The adaption of public procurement in the health care sector in the case of medical devices and equipment: A comparative case study of Ireland and Saudi Arabia

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy (PhD) is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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List of abbreviations

Symbols	Description
PP	Public Procurement
MDEs	Medical devices and equipment
WHO	World Health Organisation
WTO	World Trade Organisation
WB	World Bank
GPA	Government Procurement Agreement
FDI	Foreign Direct Investment
OECD	Organisation for Economic Co-operation and Development
EU	European Union
EEC	The European Economic Community
CE	Conformité Européenne
US	United State of America
USDOC	United State Department of Commerce
US-FDA	United states Food and Drug Authorities
KSA	Kingdom of Saudi Arbia
HSE	Healthcare Service Executive Ireland
HBS	Health Businesses Services Ireland
NPS	National Procurement Service
OGP	Office of Government Procurement Ireland
HPRA	Health Products Regulatory Authority
EMA	European Medicines Agency
EPA	Environmental Protection Agency
FSAI	Safety Authority of Ireland
MENA	Middle East and North African
GCC	gulf cooperation council
MOH	Ministry of Health Saudi Arbia
HOF	Ministry of Finance Saudi Arbia
SFDA	Saudi Food and Drug Authority
GTPL	Government Tender and Purchasing Law Saudi Arabia
MEAT	Most Economically Advantageous Tendering Criteria
LP	Lowest Price Criteria
VFM	Value for Money
RFI	Request for Information’s
RFP	Request for proposal
RFQ	Request for Quotations
ERP	Enterprise Resource Planning
RDF	Radio frequency Identifications
SMEs	Small and Medium Enterprise
GDP	Countries Gross Domestic Product (GDP)
PWC	PricewaterhouseCoopers KSA
SR	Saudi Ryal

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Abstract

Dhafer Alahmari

The adaption of public procurement in the health care sector in the case of medical devices and equipment: A comparative case study of Ireland and Saudi Arabia

Public procurement in the medical device sector is complex; it is characterised by dynamism, innovativeness, health and safety, and issues can be politicised quickly. Thus, this sector is different from other sectors that are dominated by price and precise specifications of quality measures. Moreover, public procurement in general is an important political tool for achieving a nation's objectives. However, political pressures institutionalise unique public procurement practices and rationale to achieve intended and unintended outcomes. These outcomes are also partly due to the nature of the medical device industry.

This research aims to develop a framework in which to portray the role of the political and legal environment in shaping the procurement of medical devices outcomes in a European (i.e., Ireland) and an Arabic (i.e. Saudi Arabia) country. An analytical framework was developed to set the theoretical connections between the political and legal environment and the outcomes of the public procurement of medical devices. To understand these connections three models – legal, communication, and award were developed.

A qualitative comparative case study approach was adopted which was augmented by in-depth semi-structured interviews with key healthcare procurement experts and secondary analysis. The research identified significant differences and similarities between both countries' procurement outcomes. Despite efforts made by both policymakers, the institutional logic in practice focuses mainly on efficiency. While, Saudi uses the lowest-cost approach, the Irish system uses MEAT which is supposed to give significant weight to quality and socio-environmental factors. In fact, both countries eventually focused on cost, with little emphasises on other elements.

The theoretical contribution comes from mapping procurement practices in two different contexts. This study expands the scope of existing procurement management knowledge. It also provides an original analysis of the institutional logic in tackling the challenges that pervade the procurement processes. The main implication of this research is that the two systems, although set in different political contexts, have relatively similar outcomes, and both systems require creative solutions to enable socio-environmental factors, quality, and innovation to be reflected and persist. In other words, political pressures, in these two cases seem to be ineffective in mobilising institutionalised practice to achieve the desired outcomes for medical device

1 Chapter 1: Introduction

> *"It is likely that procurement professionals will be continually called upon to balance these inherent tensions with little direct guidance from policymakers or elected officials attempting to reform government"*(McCue, Prier, and Swanson 2015; p1).

1.1 Introduction

Public procurement spends, in general, is significant in the balance of payments of a number of countries. For instance, according to the OECD (2019), public procurement accounts for approximately 12% of the gross domestic product (GDP) in the OECD countries. In the European Union, public procurement represents 14% of GDP (European Commission, 2016). It also accounts for around 18% of the GDP in the Middle East and North Africa MEAN (OECD, 2016). This chapter aims to introduce and define the research topic on public procurement, thus attempting to draw a practical and academic justification for this research, and for setting the research context. Thus, Section 1.2 gives an overview of the public procurement in general and the nature of and challenges of public procurement in the medical device sector as the research context. Next, in section 1.3 the research problem is defined to set out the practical motivation for conducting this study. Once the research problem has been determined, the literature that was written to explore, understand, and suggest a solution to solve this problem is summarised and reviewed in section 1.4, partly to identify the gaps in our understanding. Thus, based on these knowledge gaps, the research question, aim and objectives are clearly defined in section 1.5. Section 1.6 sets out the research context. Finally, before the thesis structure in section 1.8, the summary of the methodology is in section 1.7.

1.2 Research Background

1.2.1 Public procurement

Procurement is the purchasing of goods, services, or works by government institutions that are key to delivering organisational objectives (Thai,2017). The fundamental goal of public procurement is to acquire good or services of the right quality and quantity at the right time from a suitable supplier under pre-stated rules and regulations with the goal of the best value

for money (Telgen et al., 2010). Private and public procurement both focus on the best deal for acquiring goods and services based on the objective of achieving organisational goals (Johnson, Leenders and McCue;2017). Nonetheless, public procurement has a sheer magnitude of resources which, along with public disclosure, should attain the aims of public policy. Public procurement needs to achieve socio-economic and environmental benefits as well as satisfying the dynamic tension between resources and stakeholders, preserving fairness and transparency, using new technology and maximising competition (Erridge 2002; McCue, et al 2015) .

While the ultimate goals of public procurement were traditionally to fulfil a specific public demand with the right quantity, at the right time and in the right place and cost, they are now more concerned with adding economic, social, and environmental value (Telgen and Schotanus, 2010). The concept of public procurement is further used to enhance various socio-economic and environmental areas, such as the national industrial policy, reduction of unemployment, gender balance payments and the support of small local businesses (McCrudden, 2004). It can therefore be stated that public procurement outcomes are a function of government purchasing regulations, strategies, approaches, methodologies and methods to fulfil its socio-political agenda.

Therefore, fostering the economy, enhancing efficiency in public spending, tying coordination between states, and instituting a common regulatory framework are the main reasons for the reforms in public procurement systems and governance structures (Mcmurtry, 2014;Piga; Tatrai, 2017). Public procurement around the world represents a powerful tool, through which politicians and states can direct their markets to comply with their agendas. These agendas translate into regulation and policies, which are institutionalised through procurement processes and awards.

Despite the importance of public procurement in government reforms, it seems that it has not yet fulfilled its objectives for the state or for politicians. The first clear example is that international companies are still struggling to penetrate many countries and transparency is still an issue in many places (Thai 2017). On the one side, many of those countries, e.g. European countries, argue for the free trade and signed the WTO agreement, in order to promote open competition, fairness, equal treatment, non-discrimination, and transparency in the procurement cycle (WTO, 2020). Also these countries are taking the lead role in championing the United Nations procurement division dictation of public procurement criteria of performance such as value for money, transparency and effective global competition (UN Procurement Division, 2017). From other side, these European countries are building trading

and economic barriers with other countries in the world and giving preferences to their local European products. A second example is the role of SMEs in public procurement: although politicians clearly state that SMEs are the heart of the economic system, SMEs have not been well represented in government contracts (Patil and Krishna, 2017; Bovis, 2020).

Grandia and Meehan (2017, p. 303) present this paradox as "a lack of alignment between policy and public procurement practice". As described by Swanson *et al (*2010, p. 924), "*Experience demonstrates that policies crafted to operate within a certain range of conditions are often faced with unexpected challenges outside of that range*". The result is that many policies have unintended impacts and do not accomplish their original goals. It is not clear why this malfunction of public procurement to achieve its targets should exist. The EU commission called for research when it wanted to understand how public procurement was institutionalised, since the regulatory guidelines do not say "what" a public entity "has to buy" but rather "how" it "has to buy" something. i.e. which procedures and which rules must it observe, including calls for tender or participation and "selection and award criteria" in tender specifications to empower and put the political agendas into actions (European Commission, 2020, p. 2). This research aims to understand this challenge of "how" the current implementation approach of the political agenda in public procurement does not lead to the intended consequences.

1.2.2 Medical Devices

Healthcare technology is essential for delivering healthcare service and value to citizens. It does so by diagnosis and prevention using advanced technology, rather than treatment and rehabilitation (World Health Organization, 2017). The core assets of any health institutional system are its people, but, more importantly, these people must have the highest quality tools to be able to meet their institutional objectives. Medical devices and equipment in particular are among the most important health care aspects of technology for diagnosing illnesses and preserving public health at the lowest possible cost (World Health Organisation, 2017).

Based on the EU's description, the Health Care Executive (HSE) defines a Medical Device and Equipment(MDE) as any instrument, apparatus, software, appliance, material, or other article, whether used alone or in combination, together with any accessory including technologies intended by manufacturers to be used specifically for diagnostic, and/or therapeutic purposes (HBS, 2019).The MDE market is one of the world's fastest growing technologies (Sorenson and Kanavos, 2011). The global market supply of the industry grew by 5.7% in 2019, reaching $ 462.5 billion (Market Line, 2020). The industry has grown by

approximately 30% in the last five years. By 2024, the supply market for global health care MDEs is expected to have grown in value to $615.3 billion, showing an increase of 33% since 2019 (MarketLine 2020, MedTech 2019).

This market is characterised as being hyper competitive. It is characterised by innovation, quality, and responsiveness to dynamic and changing needs . It is not like other standardised commodities where “price” and “cost” are the most important factors; the health and safety come first, and innovation and quality come after. Since it is a highly innovative market, the product offerings are changing from year to year and the product characteristics are evolving fast due to the changes in the requirements and the advancements in the science. These characteristics, or nominated logic of the industry, contradicts with the traditional public procurement rationalities of efficiency and cost as the main criteria of performance.

1.3 Research Problem

Given the importance of medical devices, there are various challenges facing this industry. The first challenge is in the regulatory nature of the medical device context. Regulations can direct the market to intended or unintended outcomes. Politicians, through their regulations, may interfere in this context in particular because of their sensitivity in public matters of health and safety and also because of the need for innovation to fit with technological advancement in the medical device field (Uyarra et al 2017). For instance, as noted by (Mulder, 2020), the EU regulations have impacted on and directed the innovation and development of the Mhealth apps in Europe in a negative way. Indeed, the medical device sector is a unique sector and the consequences of the decisions have to been studied in-depth, as it is not only the cheapest product offered; rather it is the one that can deliver the political promises.

The second challenge is that, unlike other sectors that can be dominated by a cost approach, the efficiency objectives should not be the main leading rationality. Indeed, it is unique because it is dominated and led by innovation and users’ judgment, which are not fully compatible with the classic procurement value outcomes (Weszl, Rencz and Brodszky, 2019). While the procurement processes are more centralised and standardized, medical devices are used by doctors and should fit in with their expectations, take account of their acceptance and ability to get the best use out of it. Unfortunately, 70% of medical devices are not used because doctors do not perceive them to be fit for purpose (Diaconu *et al.*, 2017). Weszl et al (2019) examined the impact of the EU regulations on public procurement in the context of medical devices and

found that they were primarily concerned with the price and the cost of purchasing and completely ignored patient-reported outcome measures.

The third challenge stems from regulations. It is the communication process between suppliers and buyers, which focuses on transparency, accountability and cost, versus the rationale of market dynamism , quality, innovation and speed to the end user (e.g., McCue, et al 2015). Although it is expected that regulations could improve the use of communication technologies to give better coordination with suppliers, it has been noted by MacKey and Cuomo (2020) that adopting these technologies has hardly been noticed in the public procurement for medical devices, except for transactional applications such as e-procurement. By the same token, patients are not perceived to be considered in the procurement regulations; the major focus in the framework is on social-economic, cost and transparency and not on the speed to the market, quality or innovation for saving costs in the long term. Thus, the final outcomes of the approaches currently taken do not in general improve the welfare of society.

The fourth challenge in this sector is the fact that the government faces challenges to make their socio-economic promises come true in terms of engaging SMEs. Although one of the most global political agenda items is to involve SMEs in the MDEs public procurement, Kaplan et al., (2004) argue that SMEs have a very limited resources to demonstrate the evidence of efficiency, and health safety to meet MDEs regularity requirements, thus facing failure on the first step of market entry.

To sum up, these challenges together create a need to research on investigating and understanding the mechanisms for interaction and possible influences on procurement outcomes among politicians, civil servants, practitioners, doctors and suppliers when they regulate, communicate, select, and award contracts.

1.4 Research Motivation

Despite its strategic importance, too little is known about the mechanisms to align public procurement policy and practice (McCue, et al 2015; Rolfstam, 2015; Plantinga, Voordijk and Dorée, 2020). While governments increasingly consider procurement as a strategic tool that serves policy (OECD, 2019), there is no evidence that shows how the processes of procurement can contribute (Plantinga, Voordijk and Dorée, 2020). Several theories have tried to capture the relationship between the political and regulatory frameworks and the procurement outcomes (Snider and Rendon, 2008; Flynn and Davis, 2014; Patrucco et al., 2017; Koala and

Steinfeld, 2018). For instance, institutional theory as developed by DiMaggio and Powell (1983) suggests that the political environment puts political pressure on the institutions operating in the ecosystem to fulfil external and internal objectives. However, the hard evidence shows that SMEs, for instance, although significant for most political regimes, are not well represented in the public procurement sector.

Equally, how political factors shape the procurement process and how the conflicting objectives can be reconciled with actual outcomes are enigmatic (Grandia and Meehan, 2017). As recommended by Grandia and Meehan, (2017) and Djankov *et al.*, (2017), the processes and awards on an international level should be compared, and so should the ways in which these factors could influence the public procurement outcome, where legislation dictates different procedures to follow. the context of medical devices is dominated by the rationale of innovation, the dynamic market, fast changing technology which is not fully compatible with cost, and efficiency (Askfors and Forenstedt, 2018), and possibly contradicting with the rationale of politicians (i.e. the political agenda) and professional procurement practices (e.g. McCue et al 2015;Glas, Schaupp and Essig, 2017;Nicolini, 2010). In particular, the research examines how the conflicting objectives in procurement translated into practice by various actors.

Similarly, the approach of doctors and administrators are not compatible, particularly in defining the requirements, which then create communication challenges in the area of medical devices (Kristiansen, Obstfelder and Lotherington, 2015; Askfors and Fornstedt, 2018). Although Askfors and Forenstedt (2018) documented these conflicts and their possible effects on communication, no research has clearly drawn the theoretical connections between the political and regulatory system, the communications between with different agents (i.e. doctors, suppliers, administrators, and professionals), nor any clear linkage to the procurement outcomes in different contexts.

A fresh perspective is needed to trace the theoretical connection between the political, regulatory frameworks and the procurement outcomes. The connection seems more complex than any involving stakeholders or even stating this in the political agenda. Frameworks are needed in which to investigate this relationship. Thus, this research aimed to use neo-institutional theory to examine the connection between political pressures and procurement outcomes taking into perspective the institutionalisation process (i.e. constellation of contradicting rationales which have been institutionalised to form a hybrid logic and practice). Although institutional theory has often been used before, neo-institutional theory helps the

researcher to investigate the transition of the approach and aims of the politician (i.e. through the secondary data of each country's vision and political priorities) to appear in the regulatory documents (i.e. through the secondary data of the regulatory framework) and put into practice (i.e. through interviews) data mapping the level of communication, the selection process and awarding criteria.

1.5 Research Question, Aim and Objectives

The overarching research question for this research can be formulated as follows:

How can the adoption of different political and regulatory processes shape public procurement practices and outcomes? This will be researched through the case study of buying medical devices and equipment.

Research Aim

The research aims to develop a framework in which the role of the political and legal environment is shown in shaping the procurement process and outcomes. Secondly the research aims to develop a model to understand the connections between external political strategies and the procurement processes institutionalisation, communications practices, and whether the political orientations align with institutional implementations. Specifically, the research aims to develop a framework to describe the role of the political and legal environment in shaping the practical procurement outcomes. The previous procurement models are ether focused on external contextual factors and goals with less emphasis on how these goals are transferred through procurement tools into tangible outcomes (Thai 2001-2017; Erridge 2002, Patrucco et al., 2017), or internal practices as a set of processes without considering the external contractual factors element surrounding the procurement system (Weele 2004; McCue, 2001). As mentioned in section 1.4 there is a persistent problem of a possible conflict between the political goals (e.g., regulatory versus socio-economic, versus commercial efficiency). Thus, this research is attempting to develop an holistic model to link the external pressure to the institutional day to day practices to understand the outcomes of the conflicting goals of public procurement

To break down the research questions and aims, three-objectives are developed on how procurement process functions at an institutional level:

The first objective is to investigate the political and legal environment in Ireland and Saudi Arabia so as to obtain an in-depth understanding of the broad strategic direction and pressures

of political vision and regulation. It is also to understand the outcome of the institutional pressures that influence the practical outcomes of different procurement systems.

The second objective is to model communication between the actors involved in the public procurement processes within institutions and to ask whether the institutional approach matches or clashes with the conflicting goals and interests of the political interests.

The third objective is to examine whether the award criteria considered to be at the heart of procurement awarding processes cannot be separated from the previous two objectives. There are multiple stakeholders involved in the design and evaluation, interactions, and communication processes to deliver the value sought and these are bounded by procurement guidelines, the wider political objectives (e.g., SMEs promotions, green environments) and the institutional demand of commercial value (e.g., value for money, efficiency that suits end-user demands). In a sense, the research sets out to show how these conflicting objectives are accounted for. The following specific objectives are structured to develop a model of each specific area being examined to build a new holistic model of external and internal elements that contributes to the understanding of public procurement outcomes:

1. *To develop a model to investigate the influence of the political and legal environment influencing the procurement process in Ireland and Saudi Arabia*
2. *To develop a model to investigate the role of the communication process in public procurement so that the outcomes can be mapped.*
3. *To develop a model to investigate the influence on the award criteria outcomes of these pressures.*

1.6 Empirical Context

To plug the gaps in knowledge in terms of the vagueness over the theoretical connection between political pressures and the procurement practices, this research proposes to compare two political systems with different regulatory and legal frameworks which are presumed to have two different procurement outcomes. The two countries are classified as high-income countries and take patient safety and health factors as matters of priority in their political agenda. The countries are Ireland and Saudi Arabia. Public procurement in both countries is governed in the main by regulatory and legal frameworks. While the first(Ireland) is regulated by EU public procurement directives and not a national framework, the second (Saudia Arabia) is regulated purely by national procurement law. It is expected that different processes activities are chosen in each context, and the award criteria may lead to different results.

Since Ireland is a member of the European Union, it transposed the EU Procurement Directives to the national law without any national amendments (Brennan, 2016; European Commission, 2016). Procurement largely remains driven by the rules and regulations of the EU, which apply above a certain threshold. The public procurement regulations were directed at European level to be delivered at the national level, and implemented at the institutional level to satisfy the EU objectives of an open market, single economy, transparency, equal treatment, and to foster SMEs involvement in public contracts among other socioeconomic concerns. The laws were generalized to all member states who have different economic and political situations, thus may have aligned with or clashed with national political objectives. Furthermore, the EU and national level objectives are implemented at the institutional level by individual public servants with various conflicting goals, working closely in day-to-day operations to satisfy regulatory demands at all levels, and satisfy public demand for a tight budget.

Similarly, Saudi Arabia's procurement was guided for a long time by the Government Tendering Purchasing Law, which was set up by the royal decree M/14, Thius has been enforced for a long time, except for some minor changes in 2006.The country's form of regulation is characterized as a hard independent law. All regulations have to be aligned with the royal views. However, social-economic objectives are directly implemented as public policy to complement the procurement regulations (Davis, 2014). The level of the policy makers is closer to institutional practice than that in Ireland, which is institutionalised at many levels; however, there is little detail to show how these policies are influencing the final outcome (Alshahrani, Rahman and Chan, 2018).

Saudi Arabia's population is nearly seven times bigger than Ireland's yet its total expenditure on health care is not quite twice as high. Saudi Arabia has seen many new initiatives and developments in procurement in 2019 and 2020. Attempts have been made to modernise and adopt more advanced methods of procurement, yet lowest-price procurement remains the method of choice for awarding contracts, despite the serious limitations associated with the use of this method as noted above. However, in Ireland most tenders are evaluated according to Most Economically Advantageous Tender (M.E.A.T.), which allows for factors other than price alone to be considered. As Table 1-1 shows, although Ireland is following the EU system, while Saudi Arabia is a monarchy, both countries aim for socio-economic development through public procurement. Both markets have imported medical devices worth around 2 billion USD. But from the data below, it appears that Ireland is a major exporting country, selling about €12.6 billion, unlike Saudi Arabia. Moreover, surprisingly the medical devices industry

directly employs around 40,000 in Ireland (MedTech, 2020) but only 11000 in Saudi Arabia (GAS, 2016). In the following sections, each of the contexts will be explored more in-depth.

Factor	**Ireland**	**Saudi Arabia**
Political dominance	EU	Monarchy
Medical Device Market import	USD 2.083 billion	USD 2 billion (2018)
Medical Devices Export	USD 12.6 billion	USD 2 million
Employers per industry	40,000	11,000
Total Healthcare Spending	USD 22.54 billion	USD 46 billion (2019)
Healthcare expenditure as % of GDP	7.8% (2015)	15.7% (2014)
Population	4,761,865 (2016)	32,276,000 (2016)
Healthcare structure	National Healthcare	Universal health care system
Number of Hospital Beds	2.8 per 1000 (2013)	2.7 per 1000 (2014)
Main Procurement Agency	Office of Government Procurement (OGP)/HBS	Ministry of health
Procurement methods	Six in total	Three in total
Commonly used Procurement method	Open Procedure/framework agreement	General Tender/ direct tender
Tender Evaluation Method	M.E.A.T	Lowest-price procurement
E-Procurement portal	Yes	Yes
Regulatory Authority	HPRA (Health Products Regulatory Authority)	SFDA (Saudi Food and Drug Authority)
Procurement system law	Implementation of EU procurement directive (CE-28-2014	The GTPL (2006)

Table 1-1: Comparison between Ireland and Saudi Arabia

1.6.1 Ireland

The Irish Ministry of Health was established in 1949 as the National Health Service. The Irish healthcare system developed based on the model of the British National Health Service (McKee, 1986), but changed to the Health Care Executive (HSE) in 2013 with a more universal structure. The HSE is the major government authority and financier of health care services.

Ireland had 86 hospitals in 2016, accommodating currently 11,660 beds, and a total of 2,281 General Practitioners who play a major role in the healthcare system. In 2018 the country's healthcare spending accounted for 6.9% of its GDP, at a current figure of €22.54 billion according to the latest data available in the CSO (2019).

From an economic and social point of view, within the EU region, the Irish medical devices market confers significant economic value on Ireland. Foreign Direct Investment (FDI) has been the key driver of Ireland's economic boom during the last few decades (Gray, 1997) and the country has excelled at attracting investment from traditional source countries like the United States, due to factors such as the country's skilled workers (Collison, Brennan and Rios-Morales, 2017). According to MedTech (2020), more than 500 companies are directly employing around "40.000" people, a total considered to be the highest in the EU per 10,000 inhabitants. The Irish MedTech Association (2020) gives the total of €12.6 billion in exports of medical devices in 2019, while Ireland imported only around €2.083 millions worth of medical devices in the same year. The vast majority of MDs companies in Ireland are SMEs, constituting around 95% of the local market. Furthermore, Ireland is the third fastest growing exporter in the EU (Luther, 2020), hosting 9 of the world's top 10 pharmaceutical and medical devices companies (*Irish Medtech Association*, 2020). Some global medical device companies are also operating in Ireland, so as to enjoy quick access to the EU's free market, as well as lower corporation tax. Key players in the industry include Neuravi, Novate Medical, NeoSurgical, PMD Solutions, Neuromod, Caspos Medical, Blueacre Technology, and AventaMed.

From a political pressure perspective, Ireland is a full member of EU and follows the EU regulations and standards in public procurement. The EU Medical Device Directives recently changed to The Medical Devices Regulation (MDR) - No 2017/745/EU6 adopted in March 2017 to be applied at all national member states including Ireland from May 2021. This regulation is believed to be an improvement of what has come before , since it improves the accuracy and quality of MDEs, ensuring a certain standard for them in all member states, further reducing chemicals and ensuring more green sustainable practices (Henry, 2019). The MDR stipulated stricter roles for all classes of medical device to be aligned with the new boom in technology in order to facilitate the freedom of movement of goods within the EU. In order for a company to market its medical devices and equipment, it is essential to be FDA-approved or have the status of CE (Conformité Européenne). The EU free market allows more leeway for suppliers to enter the EU market; every supplier has the right to bid in the EU zone.

1.6.2 Saudi Arabia

The Saudi health related market (e.g. MDEs) is the largest in the Middle East and North African (MENA) region (Naouar, 2018). Saudi Arabia's health care sector remains the largest amongst all the Gulf region and accounts for almost 55% of the medical devices bought in the Gulf States. The market between 2017 to 2021 was worth approximately $11 billion (Healthcare and Life Sciences, 2019). Approximately 90% of Saudi Arabia's medical devices, worth around $2 billion, were imported, while 7% of the consumable products were manufactured in the GCC countries only 3% was locally manufactured (USSABC, 2017). According to some studies, Saudi Arabia's medical device market has a compound annual growth rate of around 9.5% (Anand, 2019). In 2019, imports of medical devices made up for almost (98%) of the entire market at USD1.8 billion. American companies made up the highest volume of suppliers, with a 21% share of the import market (US.TRADE, 2019), although, European companies are fast gaining a market share because of their relative proximity to Saudi Arabia (Anand, 2019). According to Trading Economics (2019) Saudi imports from Ireland accounted for $177.93 million worth of medical devices. Saudi Arabia is a major importer of medical devices, unlike Ireland, which is a major producer.

Constitutionally, Saudi Arabia is a monarchy where the King declares new regulations and laws, and acts as the major source of authority and power. From a socio-economic point of view, Saudi Arabia is a conservative country with an adverse orientation against the international and foreign companies and a significant bias towards the local seller and the local producer. From a political point of view, Saudi Arabia does not have political parties and the head of the cabinet is the royal family. At the time of this research, Saudi Arabia was seeking to secure a partnership with the GCC for public procurement activities. But it was nonetheless an independent country whose regulations are made under the crown. Predictably, both countries choose different processes, and award criteria, which can influence the outcome achieved.

1.7 Research Methodology

This study followed a qualitative comparative case study design and employed a problem-driven and theory-building research strategy using a critical realist approach. The research adapted comparative case-based studies between two different countries for the reasons explained above. In order to achieve its research objectives, multiple qualitative primary and

secondary data were used. Various regulatory documents were collected, plus a total of 40 tender documents from both countries. Thirty-five semi-structured interviews with experts were completed; these stakeholders were all actively engaged in the field of procuring medical devices and equipment.

Only a few studies refer to research on procurement with qualitative methodologies (Flynn 2017; Bals et al., 2018; Patrucco, Walker, et al., 2019). Thus, a comprehensive qualitative analysis is still missing. (Patrucco, Agasisti and Glas, 2020). As previous public procurement research is focoused mainly on quantitative research it is recommended to investigate real life practices through qualitative research (Flynn and Davis, 2015). Gordon Murray, (2009) found that the procurement is multifaceted and needs in depth case studies from multiple stakeholder perspective as most of the research is either collected from suppliers or buyers experience which only shows one side of the realities. However, this research conducted in depth qualitative case base methods, which can be a starting point of methodological innovation for the field of public procurement which is more in need than further quantitative studies. The approach for the methodology and methods used to conduct this research is illustrated on Figure 1-1) and explained in greater details in chapter four.

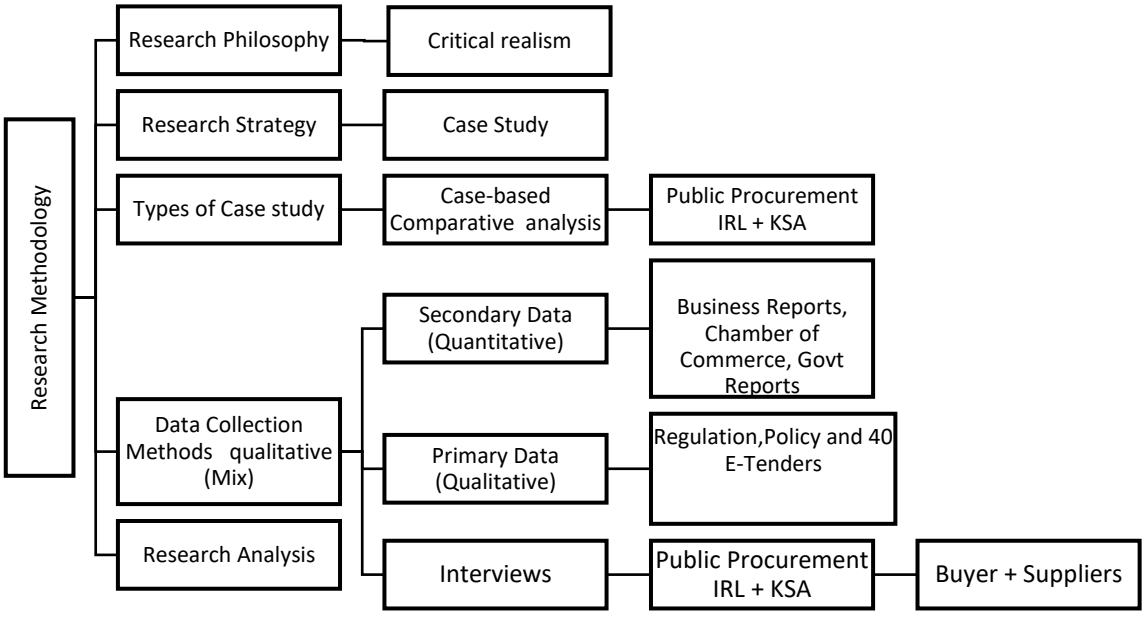

Figure 1-1:Research Methodology

1.8 Thesis structure

The study layout was based on a series of research questions and objectives. It started with a detailed literature review of aspects of public procurement: its outcomes (political, and regulatory), communication, and the awarding of contracts. The literature set the scope of the study, helped to define the research constructs and expose the knowledge gap motivating this research. The third chapter sets the theoretical basis of this research, and is used in the fourth chapter to frame the research methodology. The analysis and findings are in two chapters: Chapters 5 and 6, which cover the Irish and Saudi contexts respectively. Chapter 7 is concerned with discussion and the conclusions and limitations of the study are drawn in Chapter 8.

2 Chapter2: Literature Review

2.1 Introduction

The aim of this chapter is to review the literature on the role of the political and regulatory environment on the procurement process (i.e. communication and awarding) criteria,the process environments and public procurement outcomes. To fulfil this aim, the chapter, ss visualised in Figure 2-1.It starts with definition (Section 2. 2), public procurement in the MDEs (Section 2.2.1) principles (Section 2. 2. 2) and outcomes (section 2. 2. 3) of public procurement in this field. Then it examines the literature on the role of the political (Section 2. 3) and regulatory frameworks (Section 2. 4) on public procurement outcomes and processes. The public procurement process is defined and mapped in section 2.5. Similarly, the following sections consider the literature on the role of regulations and regulatory frameworks for the communication (2.6) and awarding (2.7) processes in public procurement.

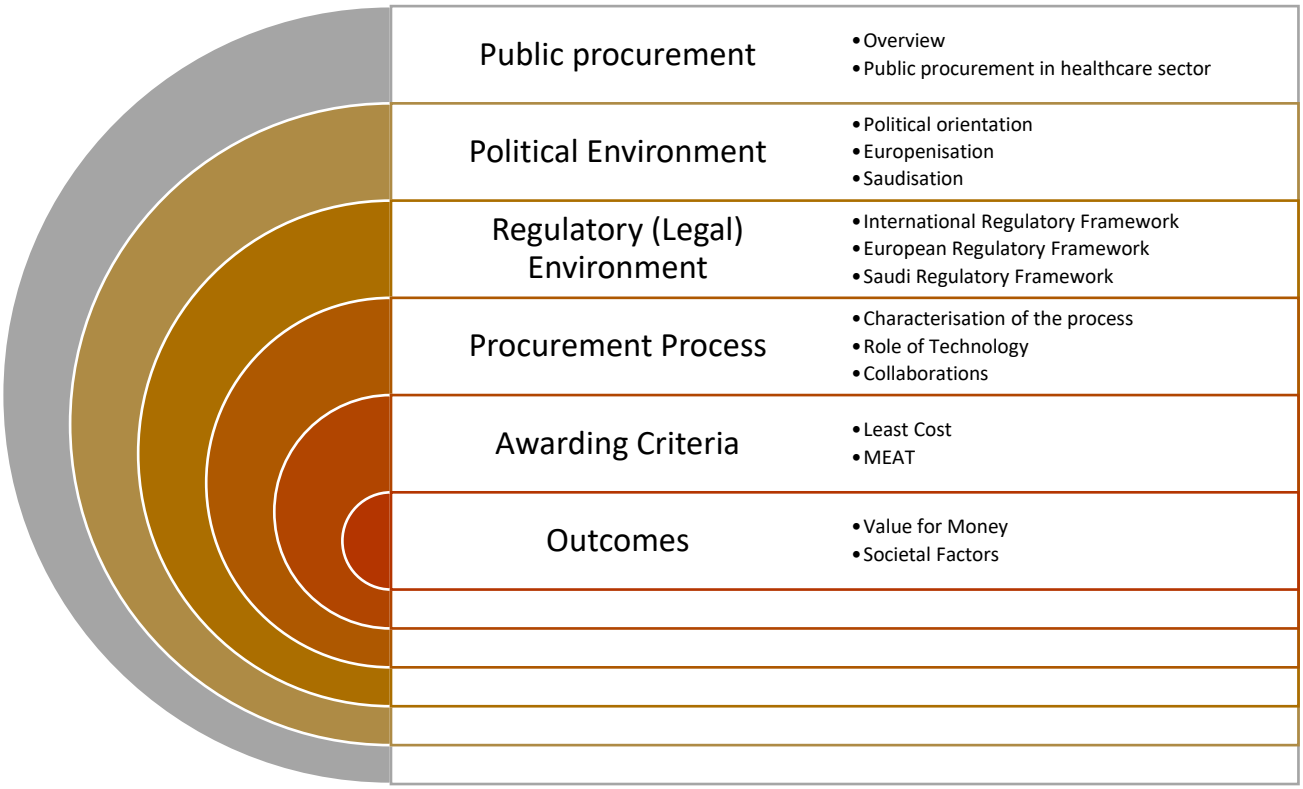

Figure 2-1:Literature Overview

2.2 Public Procurement

Public procurement is oriented around a set of political, temporal, market and socio-economic goals that function through multiple stage processes and various stakeholders interactions (Thai, 2017; Plantinga, Voordijk and Dorée, 2020). Public procurement has multiple different stakeholders: these include policy makers, the financial authorities, public administrators, individual suppliers and service providers (Vluggen *et al.*, 2019;Manunza and Schotanus, 2018). Each of these stakeholder pursues their own self-interest and seeks to maximise the benefits from this relationship within the regulatory environment (Tate and Knight, 2017). Theoretically, public procurement should aim to maximise the interests of the citizen (Popescu, Onofrei and Kelley, 2016; Tiebout, 1956; Keulemans and Van De Walle, 2017).

The literature has characterised public procurement as a way of endorsing free competition (Bovis, 2012), transparency and accountability (Vluggen *et al.*, 2019) and effectiveness and efficiency in the process (Russell and Meehan, 2014). It is assumed, based on Adam Smith's view (1776) of the free market, that fair competition will push a supplier to offer the best service at the best price (Edler and Uyarra, 2013). Free competition imposes conditions, namely, a transparent process and equal treatment of all suppliers (Thai 2001: 2008) and access to all the possible competing suppliers in the market (Vagstad 1995). If a certain type or group of suppliers is excluded, this may prevent the market from performing efficiently (Bennett 2008) and is perceived as unequal treatment (Bovis, 1998). For example, it has been found that policies created for the benefit of SMEs are predicated on the existence of some type of market failure, which can benefit Small and Medium Enterprises (SMEs) at the expense of the citizen (Bennett, 2008). To prevent this, the agreed mechanism is for suppliers to enter into open market competition using the auction approach (also called tendering or bidding) (Myerson, 1981).

The benefits of the auction system are seen as transparent, fair, and achieve the lowest cost with the highest efficiency mechanism. This paradigm of public procurements based on auctions however has created unfavourable effects on society. The focus of the auction system is cost. The cost structure of a product greatly depends on economies of scale, which, while practicable for corporates, is stacked against SMEs (Keulemans and Walle, 2017; Georghiou *et al.*, 2014). This system is mostly described in the literature as inimical and disadvantageous to SMEs (Stake 2017; Laffont and Tirole, 1993). SMEs success and growth are crucial for a nations growth and development. In addition, auctions were developed for the sale of similar

products where price is the most obvious distinguishing feature of an offer, but this may downplay the role of innovation and progressiveness in the product and/or service delivered (Martinić and Kozina, 2016).

To sum up, public procurement is different from private procurement. While private procurement focuses mainly on the cost and efficiency, the public procurement shall take other social factors in consideration such as protecting SMEs from the multinational corporates. The SMEs role in economy is vital for the development and the prosperity of the nation. Public procurement should have a comprehensive perspective to regulate and evaluate the public procurement process for the sake of maximising the nations welfare rather than to benefit one stakeholder over others. The following sections will address three main topics. Firstly, the public procurement in the MDEs in the next section is to set the direction and scoping out the research.. Secondly, the principles of the public procurement will be developed in order to be able to assess the MDEs context used in this study. Thirdly, the public procurement outcomes are defined and developed so that the research context can be examined.

2.2.1 Principles of public procurement

To maximise the citizens' interests, the literature on public procurement is governed by four main principles, namely, competitiveness; accountability, transparency and access to information; and effectiveness.

2.2.1.1 Competitiveness

The principal of competition entails that enough suppliers are given an opportunity in the open market to offer their goods and services on a competitive basis (Graells, 2015). Competition is a governance tool, preventing discrimination, eliminating favouritism and other corrupt practices that weaken the efficiency and legitimacy of the procurement system (Dawar et al., 2017). Racca, Perin and Albano (2011) describe the goal of sub-competition as achieving best prices through cost-effective process. Competition ensures that the procuring entities can purchase works, services and goods that best fit the needs of the market within the allocated budget. The range of functions is depicted as procurement planning, open competitive methods, specifications to promote competition and the wide dissemination of bidding opportunities (Brannlund, Lundberg and Marklund, 2009; Wan, 2014).

Broms, Dahlstrom and Fazeka (2019) further maintain that public procurement processes should not compromise the access or benefits of any individual and organization. Public procurement is funded by taxpayers and hence all participating individuals and organizations should be able to participate in the process of tendering and the response to specific requirements. Jaaskelainen and Tukiainen (2019) stipulate that a good market response needs tendering information to be disseminated to a wide audience, leading to competitively priced contracts. The use of non-competitive procurement methods, such as direct contracting, should be kept minimal, and encourage more competitive bidding (Darnall, Hsueh and Bretschneider, 2018).

Accordingly, this research argues for the importance of having an open competitive market to ensure well-performing public procurement; any possible kind of oligopoly or monopolistic forms of market structure should be perceived as negative.

2.2.1.2 Transparency and Access to information

To have an efficient market, all suppliers should have the same level of information regarding government's needs (Dawar *et al.*, 2017), this being a sign of transparency and open access to information. Any preferential treatment in information will give one supplier a competitive edge over the others, which can be translated as putting him in a privileged position at the expense of the citizen (Bovis, 2019). Thus, the literature argues for the equal treatment of suppliers and for authorities which do not provide information to particular suppliers that might unfairly privilege him (Harland *et al.*, 2019). Transparency implies the ability of participants to understand the processes and means by which contracts are awarded and managed (Georgieva, 2017)

Ohashi (2009) stated that transparency is important in public procurement and that information about procurement processes must be available to all stakeholders unless there is a legal and valid reason for keeping the information confidential. Public procurement principles include enough details when released through the internet or a press release to allow the service provider to decide whether he wants to compete (Arrowsmith and Hartley, 2002). After reading the invitation to tender, suppliers and service providers should be able to determine the nature and scope of the requirements, the closing date for submission, the selection and evaluation criteria, how and where documents will be submitted and the number of copies required, the deadline for queries and schedules for site visits and pre-bid meetings (Smith, 2008).

In the same way, Halonen (2017) elaborated that public procurement should be open to all qualified individuals and organizations and that all stakeholders should have access to information pertaining to the procurement requirements, but confidential information belonging to individuals and organizations should not be available publicly. Certain procurement methods such as selective or restrictive bidding limit the availability of solicitation documents to qualified firms (Lauriault and Francoli, 2017). Naidoo and Ambe (2017) have explained that direct contracting and requests for quotation also limit competition, because they limit offers to certain types and numbers of individuals and organizations.

Thus, transparency and access to information are considered in this research as important aspects of a well-performing public procurement function.

2.2.1.3 Effectiveness

The fourth principle is having an efficient and effective procurement processes. Being efficient and effective may reduce the transaction cost (Dawar *et al.*, 2017) and agency cost (Pettersen, Nyland and Robbins, 2020). The more complicated the process, the more difficult will be entailed and the fewer suppliers will enter the market (Krüger, 2004), which in turn impairs the perfection of the market mechanisms (Molander, Fellesson and Friman, 2018). Besides, an inefficient process could add unnecessary expense to the costs of procurement (Canıtez and Çelebi, 2018), and could lead to mistakes and duplicated effort. According to Kakwezi and Nyeko (2019), effectiveness is known as productiveness in relation to the costs of the procurement process. An effective procurement system makes it possible for suppliers to provide satisfactory quality within a defined timeframe. Yakovlev et al (2015) explained that the goal of public procurement is to acquire the right items at the right time to achieve public policy. The longevity of the lifecycle of the procurement (i.e. from the perception of need to its fulfilment) and consequent saving of taxpayers' money is a crucial aspect of a well-performing public procurement function. The important indicators include the purchase order cycle, length of the procurement cycle and administrative lead-time of the purchase order. It is generally agreed that procurement officials must have the right tools for procurement planning and management and their decisions must be well-informed to enhance their efficiency (Tassabehji and Moorhouse, 2008; Maki, 2012). Thus, this research will adopt effectiveness and efficiency for assessing the public procurement functions.

2.2.2 Public Procurement Outcomes

Public procurement seeks regulatory compliance, socio-economic and commercial outcomes (Erridge and McIlroy, 2002;Patrucco *et al.*, 2017; Patrucco et al., 2019).

		Factor	Reference	Outcome measure
Value for money aspects	efficiency factors	Quality	OECD (2012); Afonso, Schuknecht, and Tanzi (2010); MacCue et al (2015) Quirk (2005)	▪ Estimated value vs. awarded cost ▪ Supplier performance according to specification ▪ Internal customer satisfaction
		Cost	Lindholm et al., (2019); Kumar, Ozdamar, and Peng (2005); Thai, Essig, and Amann (2012); OECD (2012), Vafaisee, (2010)	▪ Estimated cost vs. recognised savings ▪ Realised saving in a new contract ▪ Interests' charges over time between the design and implementation phase
		Time/speed to the market	Hochschorner and Finnveden (2006)	▪ Duration of procurement cycle (from sourcing to the final award of a contract) ▪ The percentage of procurement activities completed within the procurement time guideline.
		Innovation	Uyarra et al., (2014); Uyarra et al., (2016); Knutsson and Thomasson (2014); Edquist et al. (2015)	▪ Firms' increased investment on innovation due to public procurement ▪ Firms' increased capability to innovate due to public procurement. ▪ Involvement of suppliers in the pre-tendering phase enhance innovative technological solution
	Social and environmental objectives	Compliance	Trionfetti (2000); Thi, Essig, and Amann (2012)	▪ The percentage of the contract awarded using non-competitive producers. vs. ▪ The percentage of contract awarded through MEAT.
		Sustainability /competition	McCrudden (2004); Amann et al. (2014); Vafaisee (2010).	▪ Number of patents due to public procurement ▪ Number of potential local suppliers identified ▪ Number of firms involved in local supplier development programmes
		Promoting SME	Loader, (2015); Bovis (2002); Aschhoff & Sofka (2009)	▪ Number of small suppliers vs. corporate firms involved in procurement ▪ Easing the minimum requirement to become achievable by small businesses ▪ Transparency ▪ Standardisation of the processes ▪ Fixability of procurement processes ▪ Supplier development programmes
		Green Environment	Brammer and Walker, (2011); Lindholm et al., (2019)	▪ Enforcement of the green and social objectives in the document, and the award criteria ▪ Minimum requirements of the environmental and social factors ▪ Consideration or proportion of social and environmental factors in the award criteria

Table 2-1: Procurement outcome measure

This research adopts the taxonomy of Lindholm et al (2019) that public procurement outcomes can be divided into 'value for money' (economic and efficiency value) and socio-economic

interest charges over time and the overrun of time in the implementation phase (Vafaisee, 2010).

In this research the value for money is the combination of the commercial efficiency aspects and the social economic and environmental objectives as listed on table (2.1). This is in turn explained in more detail in sections (2.3.1) and (2.3.2)

2.2.2.1 Value for money

The concept of Value for Money (VfM) in government procurement has no common definition, it is defined of "what a government judges to be an optimal combination of quantity, quality, features and cost, expected over the whole of the project's lifetime" (Burger & Hawkesworth, 2011, p. 2).Public procurement basically, aims to take cost, quality, and speed as key elements in assessing a government's performance (MacCue et al 2015). Value for money (VFM) focuses on the need to manage public funds with due diligence, so that the price paid for goods in the market compared to any other price is acceptable and represents good VFM (Anderson and Narus, 2017; Erridge, 2007; Anderson and Narus, 2017). Burger and Hawkesworth (2011) have explained that value for money involves economic , social and environmental value or a reasonable commercial price. Dimitri, (2013) added that public procurement is an economic activity concerned with minimising the cost of acquired resources, having regard for quality. The quality perspective depicts emphasis on purchasing performance in terms of the suppliers' relationship, customer satisfaction and the efficiency of the process. The quality aspect is defined as meeting or exceeding the customer's (i.e. the user's) expectations (Frączkiewicz-Wronka, Szymaniec 2014) and can also be defined as getting something fitting one's purpose (Yu, Wang and Wang, 2013). with an accepted level of defects or performance (Lindholm *et al.,* 2019). Cost is not only the cost of buying the product but also the cost of maintaining and scrapping it (i.e. the total cost of ownership) (Lines, Kakarapalli and Nguyen, 2020).

To sum up, this research defines VFM as the total cost of the product, its quality (i.e. fitness for purpose) and after-sales services (i.e. maintenance or support), the consideration of VFM through multiple stages of practices against political orientations and the way in which value is defined by different practitioners.

2.2.2.2 Socio-Economic Outcomes (social, economic outcomes)

Governments buy on a large scale and their purchases can be significant enough to reshape the market (Araujo et al., 2005) and influence the socio-economic ecosystem (Keulemans and Walle ; 2017; Khan, 2018). Public procurement it is argued should focus not only on VFM, it also should play a role in influencing societal outcomes (Lember, Kattel and Kalvet, 2015). Unlike the traditional school of thought that forbids the government to intervene in the market structure, researchers argue that public procurement can be a mechanism to foster innovation in the market (Edler and Yeow, 2016), to favour SMEs (Loader, 2015) and to protect the environment (Brammer and Walker, 2011). For instance, on evidence from 90 public procurers in healthcare, energy and water services in Finland, Storsjö and Kachali, (2017) found that innovation is considered a significant factor in the procurement process, although the respondents were not satisfied that they could fully integrate this factor, due to lack of resources and inability to benchmark innovative aspects. There is empirical evidence that public procurement, through the legal framework and awarding criteria (detailed below in this chapter), influence societal innovation (Edler and Georghiou, 2007; Lember et al., 2015; Edler and Yeow, 2016).

Similarly, in protecting and fostering SMEs in the ecosystem, Aschhoff & Sofka (2009) and Harland *et al.*, (2019) argue that the legal framework and awarding practices of public procurement are significant predictors of the engagement of SMEs in the public procurement process. The legal framework of public procurement which is translated into practices and awarding criteria plays a significant role across countries in explaining the variation in the entrepreneurship landscape and in the start-up businesses engaging in public procurement (Preuss and Walker, 2011; Aschhoff & Sofka, 2009).

2.3 The Political Environment

The political environment is the key driver for the public procurement sector; the political system designs and integrates regulations in societies and forms practical functioning units. A country's politics has enormous influence on the way in which business, and economic systems behave locally and internationally (Hirschman, 1994). Political procurement is an important theoretical perspective from which to explain the differences between countries in their procurement outcomes (Schapper, Veiga Malta and Gilbert, 2006; Gordon Murray, 2009). The political perspective can explain the strategic goals of public procurement which will be

translated into visions and regulations, particularly through its laws on procurement (Kattel and Lember, 2010; Thai, 2017). Public procurement and politics are closely interrelated and interdependent (Harland et al 2019). Public procurement is a political dominance tool (Thai, 2009). Politics and the structure of the general market regulate countries and have a significant effect on the outcomes of procurement. For instance, as is shown below in the Saudi context, when one party rules the country for a long time, the likelihood of non-competitive tendering is strong. A study of Swedish municipal data from 2009 to 2015 by Broms, Dahlström and Fazekas, (2019) found that, in such a situation, the dominance of receiving a single bid may affect the whole principle of open and competitive tendering.

The political environment is the tendency of the state to frame certain government regulations, processes, and practices (Moynihan and Soss, 2014). This is not only a matter of one party as the dominant political factor in the procurement outcomes; but also of the orientation of current policy makers as possible shapers of public procurement outcomes. The political orientation pushes policy makers to exert coercive pressures to be regulated by and aligned with this orientation on the institutions operating in the ecosystem (McAdam et al., 2013). For instance, academic evidence has found that the EU exerted coercive pressure to ensure that public procurement regulations is implemented by all members of the states which might be aligned or different from the national, institutional projected VFM outcome by the European commission (Coulson, 2008;Afonso and Rault, 2010). Each state has its own orientation which can be independent or aligned with the union. In all cases, this orientation is defined in relation to political goals and may interfere in the mechanisms of the market, making competition imperfect (Harland et al, 2019) on the level of societal concerns, such as the nation's industrial policy, reducing unemployment, improving employment conditions, support for small businesses, local development, employment of disabled workers, and equal pay for men and women (McCrudden, 2004).

Thus, the political environment exerts the power of the regulatory frameworks to create bureaucratic structures that fit in with political goals (Moe, 1989). Broms and Fazekas, 2019 found that the political agenda to fight corruption may increase bureaucracy. Bureaucracy is defined as a set of rules and practices and their enforcers to ensure transparency and equality and prevent corruption in the process (Weber, 1962). These interventions may increase the complexity of the public procurement process (Cutcher, Ormiston and Gardner, 2020).

To sum up, politics is argued in this research to play the role of shaping institutions, procurement process, practices, and setting criteria. The following section underlines the key

political orientation in the Irish and Saudi contexts. Then it examines the proposed theories to conceptualise the role of political factors in shaping public procurement in these two contexts.

2.3.1 Political Orientation

Governments can adopt one of two orientations for the economic prosperity of their societies. They are the "laissez faire" approach or control of the market (Smith, 1976).

2.3.1.1 Laissez Faire Political Orientation

The first argues that perfect competition is best for citizens because it allows competitors from all over the world to offer the highest quality at the lowest price which will benefit the users and all the citizens (Bennett, 2008). In 1981, many members of the World Trade Organization (WTO) signed a multilateral agreement known as the Agreement on Government Procurement (GPA). The GPA at present has 19 parties of 47 WTO members including EU countries. The GPA is designed to ensure open, fair and transparent conditions and cost effectiveness for government procurement market competitions. (Onur Taş *et al.*, 2019), argue that the WTO GPA increase the likelihoods of their members firms to be mutually awarded the procurement contract across the EU and WTO members. The WTO promotes competition by increasing the probability of awarding a contract to a foreign firm. TAS et al (2018) found that being a member of the WTO reduces the risk of corruption by decreasing the number of contracts with single bidders, and, as their evidence shows, by the decreasing total number of wins by a single firm. Another study conducted by (Shingal, 2011) examines, whether the WTO GPA has fulfilled its intended purpose of non-discrimination. Noting that governments frequently discriminate against foreign suppliers in favour of domestic ones, the author studies whether the WTO GPA has led to greater market access for foreign suppliers. His analysis reveals that the WTO GPA has not been effective in increasing, or even sustaining, market access for foreigners in the services procurement markets of Japan and Switzerland. (Rickard and Kono, 2014) also, note that FDI barriers reduce the effectiveness of the WTO GPA which may force suppliers to invest in the EU zone to gain a foot on the market.

2.3.1.2 Favourism Orientation

The second option for governments is to use public procurement to raise a nation's prosperity by protecting infant industries and start-ups, and bringing non-monetary value to societies (Grandia and Meehan, 2017). Political slogans such as "Buy local" are translated into a public

procurement policy in which the Government is mandated to assist small businesses to gain public procurement contracts (Walker and Brammer 2009; Georghiou, Edler, Uyarra and Yeow 2014). With this approach, the strategy of favouritism prevails. This orientation seems nowadays to prevail in Europe. For instance, Keulemans and Walle's (2017) used Eurobarometer public opinion data from 26,000 citizens in 27 EU countries to discover that EU citizens want public authorities to use award contacts on more than price alone and value multiple aspects including domestic favouritism and the objectives of sustainable procurement in their government's public procurement decisions. According to this political orientation, the government does not use public procurement to get the best VFM or the highest quality products; rather, the strategy is to use it for other economic and social reasons. For instance, Guccio, Lisi and Rizzo (2017) found that public procurement is used by some governments to stabilise the economy in certain areas and to maintain themselves in power; instead of attempting to get the best offer internationally. This strategy of favouritism is highlighted by Folliot Lalliot and Yukins, (2020). Keulemans and Van De Walle's (2017) papers on favouritism in Europe highlight that the EU is setting implicit borders to buy only from its own members and international companies firm elsewhere can hardly find space to work in this ecosystem. The contradicting rationales of efficiency and social outcomes in decision making has made public procurement yet more complex (Grandia, 2015). The next two sections will underline two related political orientations reflecting the favourism and conservative strategies.

2.3.1.2.1 Europeanisation

Europeanisation is an incremental process reorienting the direction and shape of politics to the degree that EC political and economic dynamics become part of the organizational logic of national politics and policy-making" (Ladrech, 1994, p. 1). Europeanisation is defined as a process whereby EU institutions and policies influence national institutions and policies within the various member states (Hecimovic, 2018). Bulmer and Radaelli, (2004) speak of the "processes of construction, diffusion and institutionalisation of formal and informal rules, procedures, policy paradigms, styles, "ways of doing things" and "shared beliefs and norms which are first defined and consolidated in the EU policy process and then incorporated in the domestic (national and sub-national) discourse, political structures and public policies"

Europeanisation is a broad concept referring to the mutual interactions between the European Union and national political systems (Malatinec, 2017) to influence the policy making process. The simple term 'Europeanisation' is used in various contexts to describe the process of

integrating individual member states into a domestic economic, political and social system influenced by the European Union (Leška, 2015; Candel *et al.*, 2020).

Europeanisation has many positive effects on public procurement. According to (Kimya, 2020), writing on public procurement data from Turkey between 1999 and 2016, Europeanisation had significant effects on the corruption in the Turkish procurement system. A similar study on the Croatian public procurement system showed that Europeanisation improved the system significantly, making it more transparent and more efficient (Hecimovic, 2018).

2.3.1.2.2 Saudization

Saudization can be defined as enhancing the benefits for Saudi citizens directly through a public policy, royal articles which complement the procurement law and in some occasions more important than the procurement law (Al-Hammadi, 2015). In Saudi Arabia procurement tends to be conditional on a set of qualification requirements which must be satisfied before those of commercial competitiveness(Alofi *et al.*, 2015). The concept is that institutions should consider at an early stage of the tendering process that suppliers must provide a "Saudization" certificate in order to proceed to commercial competition. The policy can be directly traced to a royal decree on procurement or a policy clause at ministerial level (Taiak 20011). Saudization may also imply local suppliers giving preference to Saudi-owned companies and local products (GPL 2007; NITL 2019). Priority is given to local products and a preferential price discount of 10% to suppliers who are of local origin and and are SMEs (Alotaibi, 2019). Local and foreign contractors in KSA tend to hire foreign workers, especially from central Asia and north Africa, due to their relatively low wages (Madhi and Barrientos, 2003). This has had a negative impact on the Saudi employment rate. Given this situation, the Saudi government intervened and issued its Saudization programme in the Fourth Development Plan (1985–1989).

For instance, if the supplier does not satisfy the demands of Saudization he can be excluded from the competition at the first filter stage. In Saudi Arabia, public procurement is regulated by hard law; the policy concerning social and economic benefits (e.g. for employment, local suppliers and SMEs) is enforced directly in the government procurement law 2004. Unlike EU which is a bit soft giving a room for its implementations through the award criteria at both national and institutional level.

Saudization, which is an expression meaning nationalization or localization, is a programme created by the KSA; it aimed at minimizing the Saudi unemployment rate and eliminating

possible unrest among the middle classes through helping the economic growth by favouring local companies (Al-Dosary and Rahman, 2005). It regulates the workforce by replacing the foreign workers with Saudis in a planned manner that is translated in the country's procurement policy (Looney, 2004). To demonstrate the extent of the Saudi unemployment problem, statistics indicate that in 2015 – which is after years of successfully applying the Saudization programme – foreigners constituted one-fifth of the Saudi population (CIA 2017). Although Saudization is not stated explicitly, all the companies in country have to abide by it. This also indirectly creates hurdles for foreign companies to surmount in accessing Saudi Arabia, unless they operate directly in the kingdom. The Saudization programme is strongly enforced by the Saudi Ministry of finance and Labour. In fact, nearly 200,000 private firms were closed down in a single year for failing to comply with it (Abdul-Ghafour *et al.*, 2014). The effect of this Ministerial Resolution is to make U. S. contractors careful not to fall into the trap of hiring too many foreign personnel (El-adaway *et al.*, 2018).

2.3.2 SMEs

Whether the location is Europe or the Gulf Countries, SMEs are perceived as crucial for politicians(Patil, 2017). Politicians believe that encouraging SMEs to engage, bid and win in the case of public procurement is inevitable and a political priority for them (Ancarani *et al.*, 2019).SMEs represent the greater part of the voting community in the municipalities, and this can put pressure on politicians to protect and support them. SMEs contribute a significant percentage of the country's GDP; hence, encouraging them to take part in public procurement may improve Saudis' economic performance and reduce the reliance on global and international firms (Akenroye *et al.*, 2020). SMEs, for their part, perceive that public procurement is an opportunity for growth; it gives them payment certainty, reputation, and the possibility of being sustained by long-term commercial relationships. SMEs that want to be incorporated in the public procurement system, however, face many challenges such as unfair qualification criteria, large contract sizes, under-staffed procurement divisions, and efficiency concerns among procurers (Patil and Krishna, 2017).

Protecting SMEs is not free and probably citizens will have to pay for the proper inefficiency created by supporting them. But preferential treatment of the SMEs is found to be effective in protecting and fostering their growth (Krasnokutskaya and Seim, 2011), even though their inefficiency makes them costly to society. The contradictions between VFM and supporting SMEs have been widely studied in the literature (Cabras, 2011; Erridge, 2007; Loader, 2007;

Preuss, 2007; Walker and Brammer, 2009; Flynn and Davis, 2015). SMEs' inefficiency can be traced back to the complexity of the system and the tension created between the cost rationale and the rationale of protecting SMEs. The complexities created in the procurement system to protect the SMEs are many. For instance, Cabras, (2011) found that protecting SMEs entails excessive bureaucracy and too much weighting on cost (Cabras, 2011), difficulties with identifying opportunities and navigating the seven procedural aspects of tendering (Fee et al., 2002;Loader, 2005), the financial and time demands of tendering (Flynn *et al.*, 2015), the too large contract sizes and the asymmetries of information (Bovis, 1998). Thus, as Loader (2005) concluded, although politicians "would like government to do business with small firms, in practice their primary aim is to achieve VFM" (page 313). In other words, the contradictions between supporting SMEs and VFM may end up by focusing only on VFM and keeping their support for SMEs as an unfulfilled wish.

Large corporates may succeed in both cost and quality, which is the main driver of the public practitioners. Large corporates have the capacity to operate on a global scale, reducing prices beyond what the local SMEs can afford to offer. In term of quality, the large firms are more advanced and capable of employing the right force. Research and development is one of their core objectives in production; this is what ensures the security of long-term projects.

2.4 Regulatory Environment Move To Practice

The main mechanism for translating political pressures (e.g., Europeanisation or some national policy) in each context is the regulatory framework adopted in it. Public procurement entails four key fundamentals: procurement regulations, policymaking, procurement authorisation and appropriation together with the public procurement processes and operations (Knight et al,2012). The procurement law and regulation established by policymakers becomes the institutional framework for the public procurement framework and programme managers who implement the authorised programmes. Feedback guides the policy makers and management in adjusting and improving procurement operations (Thai, 2016). In contrast to the procurement rules and regulations, the legal forces determine the legal framework that influences the procurement system (Nicholas and Muller 2017). Bovis (2012) stated that, along with public procurement rules and regulations, the legal environment elaborates the legal framework that governs all business activities including finance, marketing, research and development, personnel, and contracts.

Legal restrictions were found to influence the process and context of the public procurement system in developed countries (Harland *et al.*, 2007). In developing countries, Ibrahim *et al* (2017) observed that political pressure, lack of political will, corruption, weak institutions or weak enforcement mechanisms threatened the possible connection between political pressure and enforcement by means of the regulatory framework. In the EU, by contrast, public procurement directives have become stricter in stipulating transparency and fairness through specifying how bids will be evaluated in terms of scoring, giving less room for discretion while seeking to reduce the risk of undue discrimination (Arrowsmith, 2010; Sanchez-Graells, 2013). In developing countries, the legal systems are not comprehensive, and government contracts lack details, as supported by evidence from the research by Ibrahim et al. (2017) on Ghana's public procurement system. Chicot and Bleda, (2016) added that in developing countries the legal framework of public procurement is not consistent and does not provide a road map for integrating its processes. In contrast, the developed economies have clearly defined procurement rules and regulations for achieving the objectives of procurement (Thai 2009).

Governments dealing with a medical crisis, however, may find that public procurement regulations can be restrictive. As documented by Farca and Dragos (2020), for instance, the ability of a European country (Romania) to deal with the Covid 19 crisis was inhibited and weakened by the 2014 EU directive. According to their research, the regulations were inappropriate because they had not been developed to deal with an urgent need for supplies. In this research the regulations can be classified as either soft or hard. The regulatory framework in the EU is shaped by soft law operating through highly fragmented processes implemented at national and institutional levels, with different levels of compliance in individual institutions (Chicot and Bleda, 2016;Arrowsmith, 2006, Bovis 2012, 1–10). Giving the important of the context under study, the regulation in Saudi Arabia, in contrast, is perceived as "harsh" (Saad, 2016). While in Ireland is more relaxed under the democratic environment. The high level of power enscourages closely monitored institutional practices in the Saudi kingdom, which give may encourage a high level of compliance, speed up the processes and having a shorter distance between the political decision makers and the practitioner.

2.4.1 Overview of public procurement regulatory directive in European Union (Ireland)

Historically the EU began with three European communities, which formed an alliance under separate treaties after the Second World War mainly for the purposes of political

collaboration(Coen, 1997). Political agendas were assigned to a form of collective legal term of EU law, the "acquis Communautaire". This originally French term stands for "the whole body of written and unwritten EU laws, the EU's political aims and the obligations, the right, and remedies that the Member States share and must adhere to with regard to the EU, heterogeneous and amorphous blend of politics and laws of different hierarchical orders, setting the benchmark for the current state of European integration"(Bovis, 1998; Anne Peters, 2021, p. 1).

The European Economic Community (EEC) was established in 1957 to enhance economic cooperation and peace in the EU after the war (Arrowsmith, 2010).The European Community aimed to eliminate the favouritism and protectionism of European public buyers in reserving contracts for their national suppliers by opening up the procurement market and ensuring free trade amongst the member states. Along with the free movement supplies in primary law, public procurement procedures and coordination were regulated from the 1970s onwards in the form of directives (Arrowsmith 2005). In the 1980s and 1990s the Remedies Directives (89/665), Utilities Directive (90/531), and Services Directive (92/50) were major steps towards a common procurement regime (Bovis 2012). In addition, major reforms to the directives were introduced in 2004 (2004/18/EC) to simplify and unify procurement procedures. The previous regularity obstacles were also overcome by harmonising the procurement law (Arrowsmith 2011, 55–8). The EU procurement directive operated along with the policy-based competitive advantage theory. i.e., the industrialised member states enjoyed the exchange of goods produced within the union, enhancing competitive advantage and creating a more integrated economy (Thai, 2009).

The Directive provides four main types of procedure for selecting private contractors (open, restricted, by negotiation and by competitive dialogue) and two award criteria (the "lowest price" criterion or the "most economically advantageous offer" criterion). The 2014 Public Procurement Directive reiterates and extends the references to the principles and objectives in its citations (1), (2) and (89)-(99), as well as in art. 18. The latter provision refers to equal treatment, non-discrimination, transparency, proportionality and competition as principles of procurement illustrated in Table (2.2). The directive promoted the use of the most economically advantageous tender (MEAT) and limiting the lowest price (LP) awarding criteria to be used on any value less than the amount of 25000 Euro. The regulation stressed the following table of principles (2.2).

Principle	*implication*
Transparency	Procedures, requirements, evaluations and the awarding of contracts are communicated in advance’
Equality	Information is provided to the whole market at the same time
Non discrimination	Buying organizations cannot discriminate against any supplier based on any factor.
Proportionality	The imposition of requirements and conditions on bidders has to be reasonable
Mutual recognition	Certificates from other countries are considered
Value for money (commercial)	Quality, price and other aspects are linked to the subject matter

Table 2-2:Table 1: Principles of EU public procurement (Alahmari; Divis 2018)

The European Union also promotes the concept of green public procurement through its various publications (e.g. Buying Green, Collection of Good Practices GPP)- (European Commission, 2017). The concept of green public procurement is supported by several EU policies and it contributes to the goals proposed in the strategy document ‘Europe 2020’. The European framework also offers possibilities for standardisation (e.g. single procurement documents). European standards can be used in the process, ensuring required the technical specifications match with environmental criteria (European Commission, 2016a). Standardisation is the voluntary process of developing technical specifications based on consensus among all the interested parties. Public authorities should be aware of the available EU standards and make use of them as appropriate in their procurement (European Commission 2016 b) The changes in EU legislation aim to achieve a right relationship between the three complementary elements: the environment, the society and the economy (Stake, 2017) Green public procurement has its own environmental award criteria (2020 EU Vision)

The ultimate aim of the public procurement directive is to liberalise a unified EU market, since the economy relies on harmonisation (EU Commission 2010). Hence public procurement practising harmonisation has been conducted through a directive as a legal instrument of the “acquis Communautaire”. In the meantime, it offers directions for the European members to implement it at the institutional level (Bovis, 2020). However, the roots of the procurement directive lie in soft law, based on an instrument that is not legally binding on purchasing practices and a genuine competitive market among the member states (Eourpean Commission, 2020).The procurement practitioners may perceive some dualism in performing market-oriented activities without misplacing their responsibilities as contracting authorities for the EU’s public procurement law (Schepel, 2006).

While procurement is closely related to the political agenda, the directives may pressurise politics at the practical national and institutional level to behave in a certain way. The procurement regulations are generally constructed to create opportunities for taxpayers and voters (Erridge, 2007), while the EU's political orientation can be with or against that of the nation. Meanwhile institutional and individual practice orientations incline procurement towards VFM for the end-user and in turn affect the citizens who have a voice and use it in political elections.

The EU Commission for the last 50 years has proposed numbers of continuous reforms. which mainly aim to achieve transparency and fair and open competition to achieve value for money for taxpayers ((Union Publications, 1973)European Commission 1996, p. 3;European Commission, 2014). The procurement directives have been perceived as more theory-oriented than practical outcome and no evidence exists to show how the procurement processes translated these objectives into practical outcome (Purchaca et al 2019 . According to Bovis (2020), the most recent reforms in the 2014 remedies suffered from serious deficiencies, since they did not provide for effective review procedures between the stages of awarding a procurement contract. However, striking a balance to achieve VFM (e.g. between quality, price and other factors) as suggested under MEAT criteria is left open to context. The context includes the type of contract and the national authorities. This indicates that VFM is not the primary agenda, but secondary to having an open market, compliance, transparency and economic growth. (Erridge, 2007), showed that procurement is more complicated than processes and is based on compliance with public goals but not on procuring the goals set by organizations.

2.4.2 Overview of public procurement regulatory frameworks in Saudi Arbia

Saudi procurement regulatory framework is rooted in the EU public procurement law, as transferred from Egypt in 1957 (Hanson, 1987). The government developed and prepared many development plans (Davis,2014). However, the system is still too immature to implement them. The major reform of public procurement was in 2007, when the government changed many articles in the law to comply with international law and principles such as transparency and equal treatment, because of its political ambition to join the World Trade Organization (WTO) and the Government Procurement Agreement (GPA). while KSA is a full member of

the WTO commercial agreement, it not joined yet the GPA agreement still an observer member in 2020, because unsatisfactory procurement reform (WOT, 2020).

Despite its financial shortcomings, which have led to the exit of many procurement firms from the market due to the expense of the government requirements, the procurement process in Saudi Arabia is currently not only regulated by the Purchasing Law, but also subject to other supplementary regulations. However, the principles of these policies covers only the contracts that were issued in line with legal procedures (Davis 2014). Goods and services may be purchased from no more than one supplier or contractor with no standard alternatives and are procured by direct purchase, depending on the authorisation of the competent minister (Mamavi, Nagati, Pache, & Wehrle 2015). The procurement law in Saudi Arabia gives priority to products made in Saudi Arabia over products from other countries. Therefore, foreign companies find it hard to win a government contract. Likewise, a government contractor is normally required to use suppliers from Saudi Arabia when their prices do not exceed those of foreign commodities by more than 10 percent(GPA 2006).

According to Davis (2014), the rapid development of Saudi Arabia has enabled this system to thrive, judging by encouragement it has given to SMEs involved in public procurement to prosper in great numbers. Such an abundance of bidders arguably promotes market competition but still relies on the lowest price criterion for awarding contracts. Yusuf & Nisreen (2016) state that this system is liable to lock out competent bidders because the most qualified bidders, unlike amateurs, hardly lower their prices at all in support of a tender, therefore opening up the market may tremendously reduce price and maximise quality (Pablo et al. 2015). The outcomes of such a system range from time overrun, incompetent bids, and low-quality services and work (Ahmed et al. 2016). Significantly, critics argue that such a system is likely to curtail the economic development of a country because its outcomes bring more harm than good (Assaf and Al-Hejji, 2016).

2.5 Phases of Public Procurement

Public procurement stages and process may play a significant role in predicting the outcomes of procurement. Techniques for the best VFM include the centralisation of negotiations, elimination of non-essential activities, challenging the norms for innovation, reducing the cost-of-service delivery and e-procurement applications (Heikkila, Kaipia and Ojala, 2018; Schiele,

2019). Georghiou et al (2014) stated that public procurement is a process which starts with planning, and goes on to advertising, bid invitations, pre-qualification and bid evaluation, post-qualification and contract award and management. To understand these processes, as illustrated in Figurer 2-2, this research divides the procurement process into three stages, those of *pre-tendering, tendering,* and *post- tendering* (CIPS 2018; McKevitt and Davis, 2013).

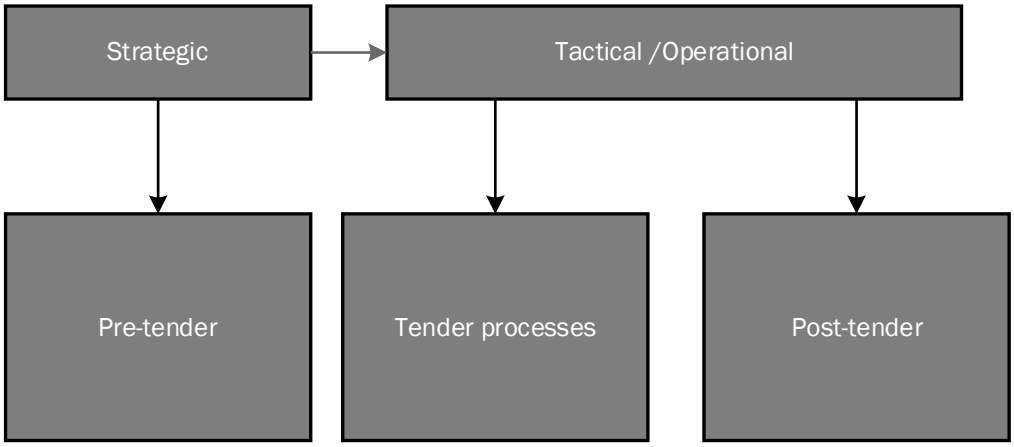

Figure 2-2:Phases of procurement Processes (CIPS,2018; McKevitt and Davis, 2013)

2.5.1 Pre-tendering Stage

The pre-tendering stage entails the identification of needs, planning and budgeting, project preparation (including the definition of requirements), and selection of the procurement process. At this stage the awarding criteria are defined so as to maintain VFM as an emerging goal. Keeping a balance between quality, cost and other aspects of the purchase, the communicated criteria are translated into practices (McKevitt and Davis, 2016) which should be clear, objective, understandable, precise, and useful to suppliers (Thai, 2017). Thus, this stage is often considered to be crucial for the successful management of public procurement, since adequate planning minimizes the need to modify the contract later. As noted by Atkin and Brooks (2015), most institutions in developed countries, including European countries, have written policies and procedures that must be complied with for obtaining the products or services they need. The main risks during the pre-tendering phase, as stipulated by the OECD (2009), include inadequate assessment of needs, inadequate planning and budgeting, lack of objectivity and impartiality, lack of publicity and transparency, an insufficient or inconsistently applied timeframe, irregular or inappropriate choice of the type of procurement, inadequate definition of requirements and specification, and undue outside influence by external actors, including political interference. For the successful execution of the requirements and specifications, it is important at this stage to identify the risks and forestall them.

2.5.2 Tendering Stage

The tendering stage involves a variety of activities such as the preparation of tender documents, specification of the selection or award criteria, invitation to tender/publication of tenders, opening, assessing and evaluating tenders, signing the tender contract, and notification of the contract award (Kakwezi,; Nyeko, S. 2019). Among the means of obtaining offers from suppliers are enquiries or 'requests for pricing/quotation' (RFPs/RFQs). Obtaining an offer from a vendor can be seen as a continuum with the degree of complexity as the axis, enquiries at one end and tendering at the other (CIPS 2018). The main challenges at this stage of public procurement include lack of access to records on the procedure, conflicts of interest, corruption in the evaluation and approval processes, fictitious offers, collusive bidding, lack of competition, and inconsistent access to the information about tendering (Modrušan, Rabuzin and Mršić, 2018). This phase is successful if such issues can be addressed throughout the process, including learning about the market before designing the tender process, collecting information about past tenders and obtaining information from other public procurements, including information on prices from other areas of the world or for similar products or services, and verification of the price differences between the offers. Tendering methodologies such as MEAT (the most economically advantageous tender) or LP are considered at this stage of procurement.

This stage has two main processes: publicising the tendering documents and evaluating the bids (both suppliers and offers). Publicising the tendering documents is described in the next section. Regarding the evaluation process, Van Weele (2014) stated that the important decision about the most suitable supplier will reduce costs and lead time, strengthen competitiveness and increase customer satisfaction. Telgen (2010) argued that the goal of the buyer in the selection processes is to find a supplier who provides the right quality at the right price. The supplier selection process as managed by the procurement department is critical and it is important to develop an effective process for finding the best qualified supplier (Gelderman, Semeijn and Vluggen, 2017). According to Mosey (2009), it involves examining all the offers received so as to ascertain the validity and responsiveness to requirements and specifications. These offers can be elaborated in a solicitation document that analyses the costs and benefits and determines the fair value. In the solicitation document the method uses specified evaluation criteria, as a basis for selecting the bids that provide best VFM. Cano and Ayala (2019) argued that supplier evaluation is an important activity in supplier selection and has the goal of

performance assessment based on suppliers' profiles and previous organizational experience of business with these suppliers. The goal of supplier evaluation is to minimise risk and improve value for the buyer. Supplier evaluation should motivate any needed corrective actions for existing suppliers not only the selection of a new supplier. Supplier selection is time-consuming but it is important to be clear about its objective, i.e. to create value for the organization. Laosirihongthong, Samaranayake and Nagalingam (2019) point out that the buyer's capabilities (in cost reduction, co-design and technical skills) and the supplier's capabilities (in quality, management and finance) should be considered when suppliers are being evaluated. Such evaluation is important for improving service, quality and delivery, for relationships and for cost reduction. Poor evaluation of a supplier impairs the whole supply chain, whereas low cost and high quality products depend upon having an appropriate supplier (Mardale, 2018). The important factors for supplier evaluation in the literature are summarised in Table 2-2.

Abdolshah (2013)	Imeri et al (2014)	Lammi (2016)	Stevic (2017)	Kamaths (2018)
• Quality • Timely delivery • Past performance • Technical capability • Price and financial criteria • Communication system • Legality and procedure	• Cost • Delivery • Trust • Financial management • Technical capability • Discipline • Past performance • Responsiveness	• Quality • Timely delivery • Service level • Flexibility • Responsiveness • Price/cost • Certification • Communication • Information sharing (EDI)	• Quality • Quality team visit • Timely delivery • Tariff and customs • Freight and payment • Labour disputes • Technical assistance • Negotiation (Edi)	• Quality • Delivery • Warranty and claim • Past performance

Table 2-3: Factors of supplier selection criteria

2.5.3 Post-tendering Stage

This stage is out of the scope of our research. There is often confusion between the procurement processes ownership, contract management and delivery of contract. However, in

this research public procurement is seen as the activities of procurement from design to the contract award beyond that is contract management activities. The post-tendering stage entails verifying whether the contract was implemented in accordance with the outcome of the procurement procedure and if all the preliminary requirements and specifications were met. Afterwards, the contractor can be paid, contracts can be amended, and any outstanding issues can be resolved (OLAF 2018). The initial terms of the contracts should institute a set of effective quality checks, sanctions, warranty, and supervision. The BLC 304/05 Procurement Management (2009) handbook documents that the management of a procurement contract encompasses monitoring and documenting performance. Daily or regular monitoring of the contract is demanded, depending on the products, services, or work procured, and it is primarily the responsibility of the company receiving the services to ensure this. If there are any changes, the contract should be amended to reflect them, as agreed by both the procuring party and the vendor. The present research will not cover this stage. There is an opportunity for future research which goes on to consider what is needed after the contract writing and performance after the contracting process including possible disputes. The post-tender phase is outside the scope of this research; however, this section was included to show a full loop of the procurement processes.

2.6 Procurement and Communications

Public procurement is a cyclical strategic process requiring communication and information sharing by top policy makers down to the tactical level of day-to-day practices (Schapper, Veiga Malta and Gilbert, 2006). Public procurement is characterised by the flow of information between different stakeholders: users (in the present case, hospitals) beneficiaries (patients), sponsors (i.e. finance ministries), procurement agents (ministries of health) and suppliers. Because this research focuses on medical devices, patients as stakeholders are not included in the analysis because their knowledge on this topic will probably be limited. Thus, this research will focus on the communication between users and procurement agents, between the procurement agents and sponsors, and between procurement agents and suppliers. Each communication requires a different message and a different process which indeed can present unique challenges. It is presumed that these communications may play a significant role in explaining the procurement outcomes; and they are formulated on the basis of the institutional pressures i.e., political, regulatory, institutional behaviour domains (e.g McCue and Roman,

2012). The following sections will look in turn at the communications between the procurement agents and the users, the procurement agents and the suppliers, and the procurement agents and the sponsors.

2.6.1 Communications with the Users

Communicating with users (i.e., hospitals as institutions) requires understanding the requirement and developing a needs analysis. According to Arrowsmith, Linarelli and Wallace, (2000 p407), the demand and needs analysis is an important stage for scrutinising what is required and when it is needed. This includes early customer involvement; identifying stakeholder needs and analysing previous records, as well as the total value of what is needed along with the social and environmental aspects associated with requirements. The manner in which the solicitation document communicates requirements must be internally consistent so that prospective bidders garner an understanding that is aligned with the intent of the requirements articulated by the procuring entity (McCue, Prier and Steinfeld, 2018). Moreover, Thai (2008, p. 429) stated that the correct information in terms of 'what and when needed' is a key influence on the tendering process (with its documented solicitation) in terms of both the efficiency and effectiveness of public spending. Piga and Treumer (2013) contended that the wrong needs analysis means that the responsible authority may procure goods and services that are not required or do not meet requirements. For example, the goods or services may not meet the requirements in terms of quality or quantity, or may not be economically justifiable (Pomazalova, 2012).

The demand and needs analysis influence the setting of the qualification and award criteria. (Piga and Treumer, 2013). According to Van Weele (2014), specification is the first task in the purchasing process; it determines what needs to be purchased. Its goal is to eliminate the possibilities of misunderstanding and complexities that can result in financial loss. The specification can be functional or technical type. Van der Valk and Rozemeijer (2009) stated that the purchase process starts when a request is raised by the unit showing what is needed, when and how much or many are required. The needs and requirements of the business are trigger forces for specification. Arrowsmith (2010) stated that of the functional specifications that elaborate the functional characteristics, three advantages accrue: the supplier has the opportunity to share his knowledge and information, standards for suppliers are set to evaluate a product's closeness to requirements and innovation is not inhibited (Murray, 2009). The technical specifications include the supplier's capabilities, abilities and the product's properties

and characteristics. The specification is managed within its own department and in collaboration with the supplier (Mendoza and Ventura, 2012; Van Poucke, 2016).

According to Bildsten (2013), two attributes provide the specifications for a purchase order, which can categorized as specifications for its logistics, quality, legal and environmental compliance and financial implications. When the specifications are not set out properly, it may lead to cost overrun, a lower number of suppliers or variations in the actual quantity or requirements. Kroese et al (2008) added that the specifications vary in term of complexity, such as the degree of precision and flexibility, including the purchase objectives, to detailed requirements. Donk, Pieter and Vaart (2016) stated that the complexities of technical specification include incomplete or generic specifications, unclear or missing descriptions of product requirements or over-specification of requirements. The specification should be a guideline for the supplier and over-specification increases cost or needs extra time (Hoffmann and Wynstra, 2010).

2.6.2 Communication with Suppliers

The second aspect of communication here is that between the procurement agent (i.e. a ministry of health) and the suppliers. In public procurement communication involves the pre-tender, tendering and post-tendering stages. The focus of the present research is mainly on the pre- and tendering processes stages. In the former, communication is rare and possibly restricted to defining the market potentials (Schepel, 2006) or to writing specifications and solicitation documents (Lynch and Angel 2013). Most communications in the tendering process are to clarify unclear elements in the tendering documents. As found by Patrucco, Agasisti and Glas,(2020) supplier collaborations can have a vital effect on the procurement outcomes.

Suppliers can engage in communication from an early point in the tender design to the point of order fulfilments, bearing in mind transparency, equal treatment, equal levels of information sharing, integrity, compliance, and mutual recognition (Arrowsmith,2010, EU directive 2014). In some European countries, Public buyers are encouraged to utilize market dialogue, which can consist of a broad range of interactions among different stakeholders (Alhola et al., 2016).

Communication with suppliers is argued to encourage innovation before tendering (Uyarra et al., 2014). Research on 800 UK suppliers to the public sector in the UK conducted by Uyarra et al (2014) found that, out of 17 factors, early communication with the government was the second most important factor for boosting innovation in the production process for suppliers.

According to Uyarra (2010), close and early engagement and communications with suppliers has the effect of producing well-written tender specifications because it can also allow access to industrial knowledge which is not available to the government. The buyer can gain a better knowledge of the market base of the industry (of solicitation documents to private operators are written in clear language (Uyarra and Flanagan, 2010). Gil and Marion (2009) argue that coordination and interaction with suppliers help to reduce the cost of administration and increase quality.

However, the drawback is that such interaction opens the door to unwanted behaviour such as corruption and violating the laws of public procurement transparency, equal treatment and information or bridging requirement for specific providers (Keränen,2017a, p. 208). Interaction and communication between public buyers and potential suppliers can be constrained by a lack of skills, risk aversion or too rigid an application of procurement processes and practices (Erridge and Greer,2002).

2.6.3 Technology in Communication

The literature recognizes information technology (i.e., e-procurement" or "digital procurement") as one of the most powerful mechanisms to support process execution at tender phase (Ma & Zheng, 2017).Technology can generally improve the efficiency and effectiveness of the communication in the procurement process (Ahmadzadeh *et al.*, 2020), helping processes standardisation, accountabilities and transparency(McCue and Roman, 2012; Moe, Newman and Sein, 2017).

Technology can improve the forecasting of demand by understanding the pattern of consumption, and increase competitions (Chang and Wong, 2010), and also can help to communicate with suppliers more effectively and more transparently (e.g. by portal communication, which sends messages to the whole list of interested suppliers) (Mackey and Raphael E. Cuomo, 2020). However, in procuring medical supplies in the public sector communication technologies have been noted to be significantly inferior to those of the private sector in aspects such as machine learning and block chain distributed ledger solutions. In the medical public sector context, they are noted to be very rarely used anywhere, unlike the context of the medical private sector (Mackey and Raphael E. Cuomo, 2020)

With regard to communicating with suppliers, E-procurement has made it more convenient and easier for SMEs to penetrate the public procurement market (Albano et al,2015; Bovis 2020);

Georghiou et al. (2014).Fernandes and Vieira, (2015) stated that E-procurement provides a significant investment return for both private and public sectors, saving time, cost and workload. With technological revolutions many options have become available for integrating and aligning procurement functions, optimising up- and down-stream procurement functions. Governments in the meantime still operate by traditional meaning of procurement (Yu, Wang and Wang, 2013). Globally, Covid-19 pandemic showed a huge problem for procurement and supply. For example, in India many small and medium enterprises were closed down during the first two months of the lockdown, which caused aproblem with distribution for healthcare providers. The hospitals increasingly started using online procurement,(B2B) platform which encourage full digitisation of procurement , optimising dynamics buying of medical supplies changed (Ray, 2021).

In communications with the users, Vaidya and Campbell, (2016) elaborated that communications using email and websites (tenders) increase the speed of information. Instituting process automation through ERP (Enterprise Resource Planning) systems and process control such as approval, payment and the tracking of procurement process deliverables (Moe et al., 2017;Ibem et al., 2016).This theory suggests that government and institutions recognise the strategic importance of information and communication technology in the process and performance of public procurement. In one study, the technology, environment and organization theory explained the effect of information and communication technology on procurement processes and performance (Brandon-Jones and Kauppi, 2018). But there was still little information on how the internal stakeholder was using digital software to communicate.

The technology in public procurement sector faces many challenges. The public sector procurement in many countries is obsessed with strict regulations and policy, some of which wer designed to serve a mainly political agenda in the 19th century. For instance, in the UK, rigid regulations did not allow revisions to be made to the databases for public procurement and this restricted the system to generating incomplete requirements for its beneficiaries (Ovaska, Rossi and Smolander, 2005) . There is no permanent approach to help e-developers to understand the constraints underlying public procurement which prevent the single interrelated and interactive phases in the full cycle of legislation from being integrated throughout its long cycle (Bovis, 2020). E-procurement therefore mainly focuses on the tendering processes, neglecting the integration of the more important aspects such as planning or real time market information that would facilitate the interaction between internal stakeholders (e.g. buyers and practitioners). It neglects external interaction with the market (the

suppliers) at the pre-stage of designing the specifications, and during the tendering process (McKevitt and Davis, 2013). Moreover, it accelerates the streamlining of evaluating and awarding suppliers, payments, and receiving orders. Keeping records would facilitate future learning for all the parties involved in public procurement not only at departmental level but also nationally. According to a recent study by Bovis (2020), end-to-end procurement digitisation is needed, to enhance the efficiency and effectiveness of public procurement but it will probably need a reform to make it more flexible approach.

2.7 Awarding Criteria

The sixth proposed perspective from which to understand the variations in public procurement across countries are the awarding criteria. These can be characterised by their scoring system (i.e. fail/pass versus scores) and as an awarding method (i.e. least cost versus weighted average).

2.7.1 Scoring System

There are two approaches to choosing supplier selection criteria, namely, pass/fail criteria (eg.financial ability and techniqual capapility of contractor to perform the contract) and awarding criteria (MEAT) where the criteria are weighted according to the importance of the subject matter or product caractristics (Bergman and Lundberg, 2013;Barraket, Keast and Furneaux, 2015; Molenaar and Tran, 2015).

2.7.1.1 Pass/fail criteria

Pass/Fail criteria focus on a threshold benchmark; i.e. on the minimum requirements from the offer or the supplier before any comparison with other suppliers. Yulek and Taylor (2011) believe that this method is fit for attributes and characteristics which cannot be measured easily. The ‘compliant or non-compliant’ approach is suitable when the factors in question can be accepted or rejected. In principle, the bid that meets the criteria is accepted but it fails if it is disqualified from meeting the criteria (Gordon and Racca, 2014). This method is used mainly when the award of a contract depends on the lowest cost/price (Yulek and Taylor, 2011). It can also be used in conjunction with other methods. For instance, Fearon, Dobler and Killen (2013) found that this method can be used to define specifications or checking eligibility of the bidding before the evaluation process; this occurs at the tendering stage, in the step before qualification.

2.7.1.2 Weighting criteria (multi-criteria)

The system that uses weighting criteria takes many criteria into account in tender design to be evaluated and scored objectively at the award stage (Ochrana *et al.*, 2015). When a weighted average approach is taken to bid evaluation, it is important in the solicitation documents to disclose the weighted ratio between the criteria (Quinot and Arrowsmith, 2013).Farid, Hadiguna and Kamil, (2019) have explained that with weighted criteria, the weighted score is used to evaluate the quality to which an offer meets the requirements. Criteria can be proportionately divided, including but not exclusive to the total cost of ownership, quality, delivery time, after-sales service and other environmental and socio-economic factors (Stilger, Siderius and van Raaij, 2017) These aspects should be linked to the types of product and service being procured, based on the requirements of the end-user. According to Hjelmborg, Jakobsen and Poulsen (2006), the weighted approach is useful when the importance of each criterion needs to be considered. In complex projects, evaluating an offer needs to consider a number of criteria other than price for the best VFM. Weight scoring is suitable when it is difficult to evaluate an offer according to its compliance/non-compliance. In weighted scoring, the price is one of the evaluation criteria and the more significant the end product, the less influence price will have and the lower the points allocated to the financial offer (Krmac and Djordjević, 2018). When the requirements are straightforward, the price can be a significant part of the selection, depending on the other criteria met.

However, with complex products, more points are allocated to technical elements than financial elements. Thus, the risk of a non-performing supplier is reduced and the saving through the lowest price is outweighed by minimising the risk of a non-performing supplier (Barraket, Keast and Furneaux, 2015). The goal of competitive solicitation is to seek the best value offer from among the bids. Weighted scoring can be expressed as a numerical rating such as a scale from 1 to 5, with 5 rating highest.

In the context of weightings as a scoring system, the objective evaluation of a tender specifies that the award criteria should be measurable and thus capable of being quantified according to the rules of the scoring system (EU Commission guideline, 2018). There are two approaches to bid evaluation, known as the absolute and the relative. The score calculation using an absolute formula depends upon the quality and price of a given bid. At the same time, the absolute formula for evaluation ignores information from any submitted bid as a reference point. The three quality criteria besides price that can differentiate bids are the service level

agreement (SLA), technical capacity and corporate social responsibility (CSR) (Stilger, Siderius and van Raaij, 2017)

2.7.2 Awarding Methods

There are two main common methods for awarding the contracts. They are the lowest price (LP), as in Saudi Arabia, or the MEAT criteria, as in the European Union (Bovis, 2016; Werner et al (2017). The selection of award criteria between the two depends on the discretion of the authority (Piga and Treumer, 2013).

2.7.2.1 Awarding criteria under the Saudi system (Lowest Cost / Price)

Saudi Arabia uses the lowest price method for awarding contracts (Ahmari and Davis,2018). In the context of LP criteria, price is the only factor taken into consideration for the choice of best tender. The tender is evaluated against set specifications based on a pass/fail system. It can be based on price alone or the total cost of buying to include other costs after buying the product, for example, maintenance costs. A study conducted by Maniadakis *et al.*,(2018), of a multi-national pharmaceutical company operating in 17 middle- and low-income countries found that when the focus of procurement is on price only parameters, the factors related to product value outcomes for patients are neglected. The study stated that it is important to take the total cost of product into consideration to prevent additional cost.

The advantage of LP is its rapidity and simplicity (Lewis, 2012). The use of the lowest price criteria is argued to make it easier for public administrators to design and evaluate because it is straightforward processes and, unlike other multi- criteria awarding methods, requires no additional formulas (Bergman and Lundberg, 2013).

This method, however, entails noted side effects. It focuses on unit price savings rather than value over time as a measure of success (Patrucco et al.,2016; Meehan, Menzies and Michaelides, 2017). Cost pressure is unsurprising, given the size of the financial challenge, but patient outcomes, not costs, are the more effective drivers of change in healthcare (Heitmueller et al., 2016; Meehan, Menzies and Michaelides, 2017). In other words, the main disadvantage of LP is that it does not allow the contracting authority to include qualitative considerations (Sjåfjell and Wiesbrock, 2015 ;Osborne and Brown, 2013). Typically, the LP criterion is used when technical and qualitative features of the supplied product, service or work, are standardized and price is the only criterion that differentiates offers (Piga and Zanza, 2005).The

LP is criticized for not considering the innovation and life-cycle cost of the goods or service procured (Moe, Newman and Sein, 2017). The LP awarding criterion considers the direct initial cost of purchase, but the authorities awarding the contract may not consider its qualitative aspects.

In the context of Saudi Arabia most of procurement that has been carried out is based within the construction industry. However, there are no practical details provided on how the award criteria delivers procurement outcomes in either government or academic publication. One study on the construction industry found negative outcome of the award criteria based on lowest price (Albogamy et al., 2012). The author claim that the lowest price award is the major factor leading to public contract failure in this context, while a previous study showed only one side of the realities. There is a need to investigate other elements beside the lowest price at multiple levels inclduing politics, regulations and institutional practices (eg. Processes Communication, and awarding mechanisms)

2.7.2.2 Awarding criteria under the EU directive 2014 (MEAT)

The most economically advantageous tender (MEAT) criteria are used when the procuring authority considers factors other than price such as quality, delivery and after-sales service (Grandia et al 2017; Lahdenpera, 2013). Each criterion has a relative weighting that reflects its relative importance as defined by the contracting authority (Dreschler, 2009). Bergman and Lundberg (2013) explained that the purpose of MEAT is to identify the tender that offers the best VFM. The MEAT focuses on value-price maximisation which includes the minimisation of costs and the maximisation of value. The VFM is the optimum combination between the cost and the non-cost related criteria that fits the purposes of the contracting authority (Marcarelli and Nappi, 2019). Davidov and Langille (2013) further describe the advantage of MEAT criterion as allowing qualitative factors as well as innovative solutions to be included. The MEAT criterion allows the life-cycle costs of the goods and services to be taken into account and not merely the direct costs set in the specification (prequalification) (Bergman and Lundberg, 2013).

MEAT includes such criteria as price, quality, functional and aesthetic characteristics, technical merit, running costs, environmental characteristics, cost effectiveness and delivery date (Sebastian et al, 2020). Other researchers have underlined factors, such as process quality, product quality, knowledge and competencies, delivery time, functionality, lifecycle costs, sustainability, past experience and societal benefits (Lewis, 2012; Kiiver and Kodym, 2014).

The award criteria can be divided into two categories, cost related and non-cost related (Bovis, 2012). Hermarij (2013) stated that the cost related criteria, also known as economic criteria, determine the financial cost of acquiring the object of the procurement.

Theoretically, the EU's MEAT criteria in the award procedure ensure that a public procuring authority can put more emphasis on environmental considerations, socio-economic factors such as the encouragement of SMEs (Alberdi and Begiristain-Zubillaga, 2021) and innovation while taking account of life-cycle costs and price of the good or service procured (Sanchez-Graells, 2021). The aim of MEAT is supposed to put an end to the dictatorship of lowest price and to allow quality centred choices. Under MEAT, the awarding authority must in the pre-tender stage specify the particular factors chosen for the contract in question and the priorities in descending order and must make a decision to award the contract on this basis (EU Commission 2016; Bergman and Lundberg, 2013). Thus it may put some suppliers who compete over price at a disadvantage and improve the ability of other suppliers to compete over the quality and innovation of their product to supply the government (Lorentziadis, 2020). Using a dataset from the Tenders Electronic Daily database in 2017–2018, Džupka, Kubák and Nemec (2020), found this change in orientation would save money for a government, because quality aspects and innovativeness may reduce the need to replace the equipment too quickly and improves the use of the products supplied.

2.7.2.2.1 Challenge 1: Quality is not as easily measurable as cost

One of the main advantages of using the MEAT as an awarding method is the consideration of quality in evaluating offers. The problem associated with MEAT is the lack of information for formulating MEAT award criteria or any mechanism for considering non-cost factors such as quality (Kidalov and Snider, 2011; Tench, Jones and Sun, 2018). Quality is hard to measure, which can reduce the emphasis on quality in assessing offers. Thus, Lundberg and Bergman, (2017), using a data set from 2009 to 2011 of the procurements in Europe, found that when the quality aspect is not verifiable and measurable, using MEAT will not be effective and will not lead to the promised outcomes, but when quality is measurable and verifiable, MEAT will be the best option.

2.7.2.2.2 Challenge 2: Price is a major factor.

MEAT was developed to end the dominance of price in the bidding process. However, the price is still noted to be the dominant factor in the awarding process (Ancarani et al 2019). But

even when led by price, MEAT is not perceived to be cost-efficient. Sumpikova *et al.*, (2016) using regression analysis on the public procurement data from Slovakia, found that using the lowest price leads to higher savings than are gained by using the MEAT criteria.

2.7.2.2.3 Challenge 3: Integrating SMEs in the Evaluation Criteria

MEAT outperforms least cost as a set of criteria because it can factor in socio-economic aspects such as the encouragement of SMEs. For instance, Kidalov and Snider, (2011) Maréchal and Morand, (2012) found that MEAT may make a difference in favouring SMEs in the tendering process. However, as noted in the data from Sweden, the designing of the MEAT criteria may discriminate against the SMES because governments in designing the MEAT scores are keener to listen to the large corporates (Stake 2017). Ironically, as surveyed in Canada, SMEs prefers the lowest cost principle to the MEAT principle because the latter sets criteria not achievable by SMEs thus excluding them from the competition and probably also because MEAT can opens the door to corruption if the MEAT is designed to fit a particular corporate (Ancarani et al 2019).

2.8 Chapter Summary and research framework developments

This section summarises the literature review and traces the development of the research framework (Figure, 2.3). The literature review built a bridge between the known and unknown aspects of public procurement on two significant dimensions: political and practical. The political one translated into the regulatory framework complying in many aspects with the political vision. Public procurement is a crucial activity of government which rests on three goals: legal / regulatory, commercial and economic; it also has social and environmental outcomes (Erridge 2002; Thai 2017) .The practical dimension concerns institutional practice which is divided in this study research into processes and communication, award criteria and outcome.

Public Procurement is strongly underlined by the political vision reflected in regulation and transferred through the communication and award criteria of the process. Erridge (2002) provided one of the first research works to assess the UK's public procurement policy practices from these three perspectives. However, the persistent problem for the last decade seems to have been a gap between procurement policy and practices. Evidence from EU Commission publications has shown that defining the goal of a procurement project is the task of the

policymaker. EU law does not regulate the subject matter of a contract that can freely be set at the national level. “Public procurement legislation is not much concerned with what contracting authorities buy, but mainly with how they buy it” (European Commission, 2004:14) This was recently followed by EU Commission (2020 p.2), which appears to solve this problem. However, the literature review was conducted to design and develop a novel framework. For this purpose it was concerned with political, regulatory, processing and communication aspects which are determined to construct the framework; these aspects direct these processes to the point of selection and award .

The literature gives a brief background on Europeanisation and Saudisation due to their political importance for this research. The first pre-fixed theme is the political agenda that is logically translated through a legal faremwork and regulations for public procurement in particular contexts. Both systems seem to be seeking the same outcome, which is the use of public procurement as a powerful tool to enforce the social and economic agenda (e.g. buying locally, enhancing SMEs to increase employment and a flourishing economy). However, the two countries regulate procurement differently. In Ireland, the soft law coming from the EU may give member states more flexibility in enforcing its regulation on their institutions. The Saudi system depends on a hard regulatory framework imposed by the crown. The social and economic agenda clearly gives preference to local suppliers and SMEs. Saudisation is required from all companies wishing to compete in procurement market. The procurement policy and regulations call for the compliance of institutions made at the King’s Council, whereas the EU operates through its Commission and parliaments at the national and institutional level. The EU regulations also grant the importance of socio-economic and environmental factors, leaving states to enforce its regulations by authorising their institutions to comply with the EU’s projected strategies (Bovis,2020). However, we may understand that the control of procurement is strict. This reveals one of the research gaps in the construction of politics and regulated procurement in the two contexts. It can be known only through a regulatory framework and by observing how the many conflicting objectives are institutionalised and practised.

Public procurement is initiated through public procurement processes, stakeholders (actors) activities and communication. The procurement systems of the chosen countries use different awarding mechanisms. Ireland under the EU procurement law has an option to choose from many producers (e.g. with open, restricted competitive dialogue and a recent framework agreement), they are all viewed to yield the Most Economically Advantageous Tender

(MEAT). By the same token, the Saudi system awards contracts mainly by choosing the lowest price. The award criteria are the bottleneck of the procurement award. The MEAT criteria are claimed to deliver value by considering other factors than price, such as quality, total cost of ownership, the life cycle of the product, innovation, social and environmental objective and subject-matter.

While MEAT is designed to incorporate more than price, lowest cost considers efficiency and cost to be the only factors determining the awarding methods. However, these factors do not working in isolation from the other factors and actors driving value within the organisation. This study is concerned only with the pre-tender and tender processes, in other words, to model how stakeholders within an institution interact and communicate to deliver what it cited in the regulatory framework (e.g., communication before tender between procurement officials and end-users, and between procurement officials and suppliers to design the award criteria). This communication is integrated in the procurement processes to award contracts according to what has been designed, taking into account transparency, accountability and the pre-determined outcome (2.2.3).

There is a need to investigate the communication of multiple actors to examineg how procurement is institutionalised and aligned with processes and practices (Plantinga, Voordijk and Dorée, 2020) and how processes contribute to delivering conflicting objectives in procurement (Grandia and Meehan, 2017). This research finds two more important themes which contribute to the development of the conceptual framework: communication and award. The interaction of actors in designing and awarding contracts, built into the design of the award criteria and how is it translated objectively to practices at the evaluation stage. To sum up the model below has been developed to understand outcome of public procurement by understanding practices , communications and awarding processes in Ireland and the kingdom

of Saudi Arbia.

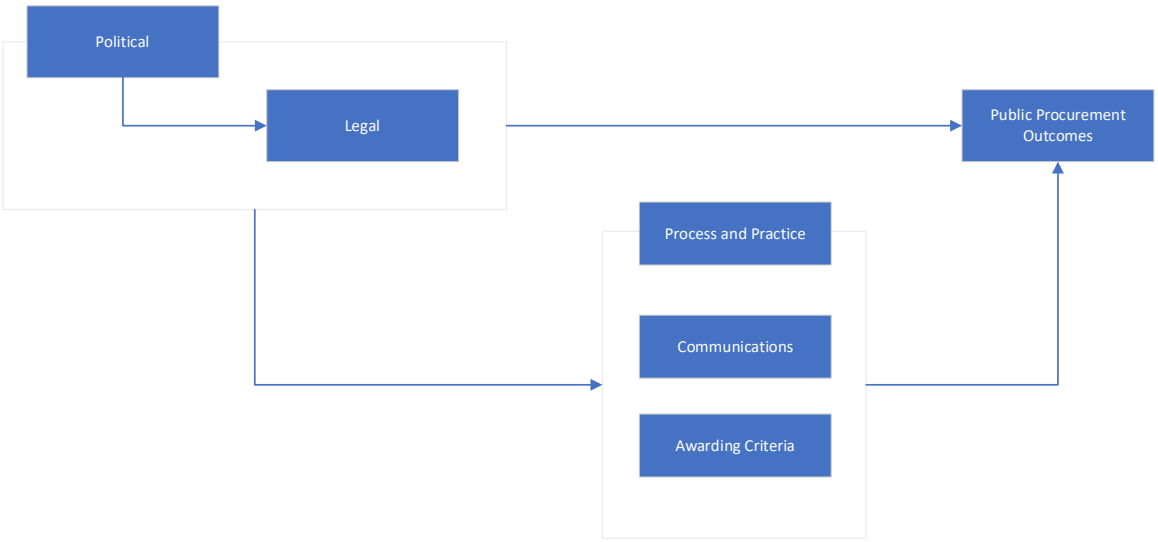

Figure 2-3:Research framework

3 Chapter 3: Analytical Framework

3.1 Introduction

The previous chapter gave an in-depth view of the public procurement literature concerned with its political and regulatory processes, its communication, and award criteria. For setting the theoretical perspective of this research, this chapter will be dedicated to establishing the analytical framework to guide the research methodology in the next chapter. This chapter will go through the relevant theories that contribute to answer the research question and investigate the research phenomenon of interest. The main theories are Technology, Organisation and Environment (TOE), Institutional theory, and stakeholder theory. This research will integrate the different theories to establish a unique analytical perspective. This chapter ends by developing the analytical framework from these theories.

3.2 Analytical Framework

The analytical framework, also called conceptual framework, aims to guide the research data collection and interpretation process. Thus, this research will develop its own analytical framework to set the analytical perspective to investigate the role of political and regulatory environments on the public procurement processes and outcomes in the MDEs.

The analytical framework consists of a set of theories that can help in investigating the public procurement outcomes. Several theories and models have given different analytical perspective to understanding and investigating the dimensions, factors and aspects of public procurement that could shape the outcomes (Arrowsmith and Trybus, 2003; Telgen and Lenselink, 1998; Flynn and Davis, 2016; Thai, 2001, 2017; Koala and Steinfeld, 2018). They include ‘Agency theory’, ‘Institutional theory’, General system theory’, Stakeholder theory’, ‘Technology, Organisation and Environment Theory (TOE)’, ‘Legitimacy Theory’, ‘Contract theory and Theory of Auction and competitive bidding’ (Freeman, 1984; Tornatzky & Fleischer, 1990; Phillips, Caldwel and Callender, 2007; Kamann, 2007; McCue and Prier, 2008; Spiller, 2008; Ashworth et al., 2009; Dunn & Jones, 2010; Thai, 2001, 2008; Walker *et al.*, 2012;Walker et al., 2013; Flynn and Davis, 2014; Chrisidu-Budnik and Przedanska, 2018).

By reviewing multiple theories, and framework used in public procurement, the role of political and regulative environment that shapes the public procurement outcomes is lacking theoretical

perspective to investigate its role in shaping the outcomes. Due to this theoretical gap, there is a need to have a novel middle-range theoretical perspective to integrate the macro aspect as political factors with the actors practices (i.e. Macros aspects), i.e. Meso perspective (Blalock, 1778; Dopfer et al 2004). Thus, in this research, it is argued that the political environment can play two significant roles that can shape procurements practical outcomes. They are the macro and micro perspective. While macro aspects (i.e. political and regulative) effects can shape the ecosystem in which the public procurement actors of the MDEs are operating (i.e. the suppliers, funder, sponsors, and beneficiaries), the micro aspects (i.e. technology, communications during the procurement activities to design and award the contract) effects could shape the relationship between the actors of the ecosystem. Thus, to set this theoretical perspective into place, the proposed Macro theories are legitimacy and institutional theory and the proposed micro theories are the stakeholder theory and Technology, Organisation and Environment (TOE).

3.3 Macro Perspective

The macro perspective focuses on understanding the relationships and interactions among the nations institutions and how these interactions may influence the socio-economic system. The main benefit from using the macro perspective is that it acknowledges the institutional contexts which is structured around the actors (e.g. organisations) and fields to frame the ecosystem that influence the decision making process of these actors (Wijk *et al.*, 2019). This means that that the macro perspective will help in assessing the position and roles of actions of interdependent actors to frame the institutional context (DiMaggio & Powell, 1983) which in turn translates into intended and unintended led practices which influence the structure of the economic entity under investigation (i.e. public procurement system) (Marti et al., 2013).Thus the proposed theories help to investigate the role of the political and regulative environments on the public procurement practices, and in turn the outcomes are the legitimacy and institutional theories.

3.3.1 The legitimacy theory

Legitimacy theory is adopted to investigate the role of changing different political parties on the outcomes i.e. each political party aims to create its legacy system to justify its political position by setting expectations and norms. For instance, fostering SMEs as a political arena for many political parties could shape legitimacy for actions that could harm the economy but benefit the SMEs. Thus, the legitimacy theory is explaining this phenomenon by defining the

condition that exists when the value system of an entity is congruent with a value system of a larger social system of which the entity is a part (Deegan, 2019). Pani (2007) discussed whether the difference between the two value systems results in a threat to the legitimacy of the entity.

The legitimacy theory holds that the leading organisation, i.e. the political party, is responsible for disclosing its practices to stakeholders, especially when they are in the public interest, to justify its existence within the boundaries of society (Clausen, Hompel and Klumpp, 2012). In such a context, the public procurement processes within a political system make the officials responsible for public procurement processes accountable for public expenditure (taxpayers' money) (Meehan, Ludbrook and Mason, 2016). Fayezi, Zomorrodi and Bals (2018) explained that the legitimacy theory integrates governance aspects such as the performance of processes, internal controls, and competent personnel. Thus, this theory is partially adopted to capture the political parties of Saudi Arabia and Irish perspective regarding their political agenda and priorities . The political parties vision and published objectives can set the legitimacy for their actions and also could provide a frame for justifying their actions.

3.3.2 Institutional Theory

The institutional theory is the main theory adapted in this research to understand the possible theoretical connection between the political environment and public procurement outcomes is the institutional theory. Rolfstam (2011) and Flynn and Davis (2014) stated that the institutional theory adopts the sociological perspective to explain the structure and behaviour of organisations. The theory draws attention to the social and cultural factors that influence the decision-making in the organisation and the way in which rational activities are adopted in the organisation, Grob and Benn (2014) added that the public departments as organisations may be considered as actors and promote values and interests that are embedded in local communities rather than limiting themselves to implementing the goals defined in the policy. This may create irregularities between the objectives defined and those that the agency intended to achieve (Meehan, Ludbrook and Mason, 2016), which could make polymorphous systems that induced negligence, struggle to survive and distort the organisation's goals (Thai, 2017). Rolfstam, Phillips and Bakker (2009) found that people in public organisations sometimes do not behave in accordance with their assigned roles. Thus, public management not only involves designing formalised structures but also raises the question of how people influenced the informal structures (Snider and Rendon, 2008). The institutionalisation process through which

people interact goes beyond such technical aspects as the co-opting of local partners, sharing of common values and implicit alliances (Rolfstam, 2009; Obanda, 2010).

According to traditional view of institution theory, the three pillars are regulatory, cultural-cognitive and normative aspects that form the basis of compliance (Patrucco, Luzzini and Ronchi, 2017). The regulatory aspect includes procedures, rules and regulations that enforce the mechanism and provide a basis for compliance. The compliance perspective reveals the ability of organisations to comprehend rules and regulations, and important indicators include value for money, accountability, transparency, competition and integrity. The regulatory aspect entails the regulations and guidance governing the procurement processes and activities (Wesseling and Edquis, 2018). The normative involves the norms and values with social systems as the basis for compliance. Cultural-cognitive considerations underlie people's understanding of beliefs and symbols and definition of compliance (Sonnichsen and Clement, 2019). Molander, Fellesson and Friman (2018) explained that in procurement, the operations are delegated to agents who influence the decision-making. At the strategic level, Furusten (2013) noted that the procurement professionals need to process skills and competency. In procurement, there are clear lines of delegation and, besides, developed countries have clear rules and regulations; thus, institutional theory (Spiller, 2008) is relevant and applicable to examining the procurement system in the context of different institutions. Factors such as cultural, social norms, interactions and staff knowledge, skills and competency are important factors influencing the procurement systems (Keranen, 2017).

The new institutional perspective assumes that policy determines practice (Berger and Luckmann, 1966). Institutional theory stipulates that organisation behave similarly due to coercive, normative and mimetic pressures (DiMaggio and Powell, 1983). The coercive pressures are the legal enforcement of the regulations and standards. The normative pressures are those factors that come from the knowledge and "norms" of the industry. The mimetic pressure searches for motivation to imitate others in the industry. These pressures create certain institutional rationale that can dominate the industry (DiMaggio, 1988). Institutional pressures by their nature, will raise the profile of international corporates and exclude societal factors such as SMEs and green products from public procurement because the simple auction-based roles focus on the logic of cost and quality, which is not aligned with SMEs and green suppliers. Thus, coercive pressures are needed to "rebalance" the institutional pressures (Rowan, 1982).

On the public procurement field, Kidalov and Snider, (2011) portrayed the institutionalisation process of the public procurement system in the United States by documenting the use of

coercive and normative pressures to support SMEs in public sector tendering. In their study, federal agencies, as coercive agents, enforced a percentage of total procurement being spent with SME suppliers. Coercive pressures are noted in the literature to play a significant role in explaining the Europeanization of the public procurement system in European countries and enforcing European institutional rationale (Hecimovic, 2018). Goetz illustrated his contention by the case of Germany, showing that political pressures to integrate further have become part of the logic of the German state; thus 'the goal of furthering integration has entered their [the country's key institutions] as a genetic code' and been translated into coercive pressures on all organisations working for Germany (Goetz, 1996).

Neo-institutional theory, with its strong sociological origins, bases its arguments on the notion that organizations are socially rewarded by legitimacy, resources, and survival, based on their acceptance of coercive, normative, and mimetic institutional pressures (DiMaggio and Powell, 1991b; Meyer and Rowan, 1991). This implies the transference of contextual values, ceremonies, and symbols to the structures, strategies, and practices of an organisation, thereby generating isomorphism (Scott, 1987; Zucker, 1987). Organizations are posited to passively succumb to institutional coercive and normative pressures in order to obtain the social support of stakeholders (for example, by adhering to regulations designed for environmental protection or requirements demanded by professional associations). Contemporary institutional theory has captured the attention of a wide range of scholars across the social sciences and is employed to examine systems ranging from micro interpersonal interactions to macro global frameworks (Scott, 2005).

With the same perspective used in understanding the medical public procurement system in the contexts of Ireland and Saudi Arabia, the political environment creates coercive pressures by the legal system; normative pressures by defining acceptance, translated into practice through processes, awarding, shortlisting criteria; and mimetic pressures by imitating other suppliers in the country or in the union. Thus, institutionalisation theory will be used in this thesis for understanding the institutional pressures that shape the institutional rationale ruling the public procurement system in the two countries. This in turn may help to understand public procurement outcomes.

3.3.2.1 Application on this research

Procurement represents an important case for historical institutionalism in public administration as it is characterised by a path-dependent logic (Pircher, 2020) The procurement

regulations is described as a path-dependent process given that policy goals, and their hierarchy, is the same. Historical institutionalism helps to understand how political controversies are resolved in a certain institutional and context setting. Institutions determine the constraints and opportunities to engage in economic activities and provide a framework to organise the economic, social, and political interaction in society (Ostrom 2005; Rolfstam 2013).Institutional theory goes more in-depth to explain the possible effects of the institutional pressures on the organisations performance which is called isomorphism. Isomorphism is a phenomenon where economic entities (i.e. suppliers and hospitals) are behaving similarly because all of them are faced by similar coercive, normative and mimetic pressures (Scott, 2002). Therefore, this theory is adopted in this research to understand the possible theoretical connection between the political environment and public procurement outcomes... This research combine the concepts of institutional pressures (political and regulations) with the concepts of institutional rationale, such as market conditions, professionalism, managerialism, in order to gain a better understanding if public procurement wider objectives is institutionalised.

With the same perspective used in understanding the medical public procurement system in the contexts of Ireland and Saudi Arabia, the political environment creates coercive pressures by the legal system; normative pressures by defining acceptance, translated into practice through processes, awarding, shortlisting criteria; and mimetic pressures by imitating other suppliers in the country or in the union. Thus, institutionalisation theory will be used in this thesis for understanding the institutional pressures that shape the institutional rationale ruling the public procurement system in the two countries. This in turn may help to understand public procurement outcomes.

3.3.2.2 Limitation of Institutional theory and further classification

The traditional and new views of institutional theory have limitations at different level. The traditional view is characterised by isomorphic, coercive, normative and mimetic pressures which is limited to explain macro dynamics in the institution organisational fields. This allows for heterogeneity, variation and change (Wooten and Hoffman, 2008).The heterogeneity of public procurement field is influenced by institutional complexity, contextual external environmental pressures (e.g., political, regulatory coercive pressure) represented by various views of actors or stakeholders (Scott,1987 and 2002). However, the old institutional theory is limited to the isomorphism environmental pressures. In addition, the new institutionalism

expanded by (DiMaggio and Powell, 1983 and 1991) institutions ether normalised or resisted can be explained by institutional logic (Suddaby and Greenwood,2005).

The institutional logic in this research is only limited in understanding the environmental pressures surrounding institutional settings for both countries under study, and the rationale of multiple organisations interactions to deliver public procurement specific and wider goals projected by political and regulatory environments. This research aims to understand the outcome of political conflicting goals following Erridges (2002-2011) explanations that political goals of adapting public procurements are: regulatory, commercial (efficiency) and social economic and environmental goals. The regulatory goal of public procurement includes transparency, market conditions, equal of treatments, ethics, and accountabilities. The second goal of public procurement is more related to institutions to satisfy public needs, which is quality, cost, time of delivery base on budget available. The third goal which is more political oriented involving SMEs in public contract, employments, economic harmonisation and recently green environment. However, these goals in general are easily identified, but how these political goals are shaping public procurement outcome is not fully investigated thus requiring us to link external force of public procurement to the internal institution rationale, practices ,communication, awards(Thai 2001; weele, 2014; Patrucco, 2017). However, both classical and new school of institutionalisms have a limited abilities to explain the roles of actors with conflicting interests and they do not provide a theoretical lens at practical level to classify stakeholders and their degrees of influence and power (Kostova et al., 2008).

Therefore, understanding the institutional pressure is only the first step to understand macro-influence on institutional practices within two different regulatory regimes. To gain a greater understand of how actors (including politicians) influence institutional practices, there is a need for theoretical explanation to analyse the roles of stakeholders influencing or influenced by the institutional logic within a certain environmental condition. Stakeholders' theory may provide a theoretical foundation to understand the influence of multiple stakeholders, explain their stake on the processes according to their degree of conflict, power, legitimacy and influences (Freeman,1983). To bridge the gap between the institutional pressures at macro level and examine the organisational practices of public procurement at micro level, stakeholder theory is integrated within institutional theory to classify actors and stakeholders. Thus, to explain the rationale of the political and regulatory environment shaping public procurement practices outcomes in Ireland and Saudi Arabia

3.4 Micro Perspective

3.4.1 Micro perspective: Stakeholder theory

Stakeholder theory is thought to represent one of the methodological practical perspectives for this research. Freeman (1984) was the first to integrate stakeholder concepts into a comprehensible construct in which the role of stakeholders, including producers, suppliers, and consumers, moves closer to the forefront of academic attention. Consideration for stakeholders, therefore, forms an integral part of this study, where achieving change in the supply chain is not merely a rational, technical process of solving problems, but rather involves a set of economic and political processes in building alliances and articulating interests (Webster 1995). In other words, stakeholders are those who have an interest in the organisation, such as employees, suppliers, consumers, shareholders, competitors, and the government.

According to Freeman (1984), a stakeholder is an individual or group within or outside an organisation who has a stake in the organisation's outcomes and performance or influences the strategic decision making within it. This also, might explain the view of Thai (2017) that politics can motivate individuals or groups in the public procurement context. Gelderman, Semeijn and Vluggen (2017) stated that stakeholders' groups can be divided into the regulatory, internal and external primary and external secondary. The stakeholder theory elaborates that public procurement puts great pressure on a buyer to get best value for money and diminish the negative effect with trading off powers and interest. The public procurement stakeholders are held accountable for the interaction between individuals or organizations and thus, a good understanding of stakeholders is required (Gelderman, Semeijn and Vluggen 2017).

Prier and McCue, (2009) noted that the principal actors in public procurement process are procurement practitioners, who are responsible for ensuring that procurement objectives are achieved. Procurement practitioners must gain the trust of stakeholders that they understand the procurement principles and process. Caillaud and Lambert-Mogiliansky (2017) added that the procurement practitioners are directly accountable for the procurement process from the identification of the need to the awarding of the contract. Therefore, a balance must be struck between stakeholders' multiple interests (Steinfeld, McCue and Prier, 2016). Pricing agents can also be used, but in this research when multiple principals and agents are involved in procurement the ownership of medical devices is not entirely made clear.

According to Gelderman et al,. (2017), stakeholder groups can be divided into regulatory, internal primary, external primary, or external secondary. In public procurement, stakeholder theory suggests that there is considerable pressure from above to get the best value for money within defined budgets and legal bounds. From multiple perspectives, the social, economic value creates coercive pressure on the institution to be normalised by multiple stakeholder for to create value outcome. This theory seems to be ideal for analysing procurement processes, communication, and collaboration of internal stakeholders to deliver value through both MEAT and LP procurement preferences in Ireland and Saudi Arabia. The external pressures is directing the logic of many conflicting objectives, how does that aligned with the institutional practices. Since, internal public procurer is shown to push for the lowest prices, commercial efficiency logic how does the other objectives take place in practices while maintaining regulatory demand of innovation, transparency and accountability. An analysis to discover which procurement process is best for managing performance to satisfy a variety of stakeholders, both internal and external, is made from this theoretical standpoint. Given the sensitivity of purchasing medical devices for any country, as well as the required operational measures and stakeholders' involvement, stakeholder theory was seen as the most fitting lens through which to view practical outcome for this research. In fact, this theory supports the study's rationale for choosing medical devices procurement, since it is important for human health. It has critical implications in that it is attracting external and internal stakeholders' interests. The communication between actors involved (eg., Buyers, suppliers, funders) can be mapped, explained and understood, by investigating individuals' involvements, power and conflict of interest between the internal stakeholders and between organisations involves on delivering value through procurement processes. Thus, stakeholder theory will help to understand the different actors' positions, stake from the public procurement practical view (i.e. clinician, procurement specialist in the hospital, procurement specialist in the government, and consultants).Thus, to gain in depth understanding of how public procurement goals are institutionalised and what the institutional logic shaping the day to day communications and activities and outcomes.

3.4.1.1 Limitation of stakeholder's theory

The stakeholder's theory is only limited to understand maps stakeholders influence, power and interaction to deliver tangible outcome, with this in mind the stakeholder influence is control by institutional pressures form political and regulatory environment. As there is a conflict of

political objectives (eg,. Social economic goal versus commercial efficiency, Transparency versus innovation versus available resources and accountability) the stakeholders may create an opposite bottom -up pressures which becomes institutionalised resisting institutional logic. However, the stakeholder's theory cannot explain the communication which might be explained by the theory technology and origination and environmental theory (TCO).

3.4.2 Technology, organisation and environment theory (TOE)

The adoption of Technology, Organisatrion and Environment (TOE) theory is used to integrate the institutional theory with the use of technology in organisations which in turn influences the public procurment performance. From a micro-perspective, the three aspects of analysis are organisation, technology and environment (Tatnall, 2010). Awa, Ukoha and Igwe (2017) stated that the organisation context refers to descriptive measures such as size, scope and managerial structure. The technology context elaborates the internal and external technologies that affect the performance of procurement systems. The environment aspect measures the system boundaries in which organisations conduct their business dealing with the suppliers (Awa, Ojiabo and Orokor, 2017), such as the institutional pressures. Under this theory, the procurement processes are computerised and integrate the operations between procurement functions and potential beneficiaries. The technology speeds up the processes and communication within and outside stakeholders (Rosli, Siew and Yeow, 2016). In public organisations the decision to implement new technologies are not taken by the organisations; rather by the political willing supported by the regulative environment. Thus, in this research the use of technology is assumed to be an outcome from the political and regulatory pressures.

Technology could play a significant role in revolutionising the public procurment practices, process and so the performance. Vaidya and Campbell (2016) described how communication with suppliers using email, website (tenders) increases the speed of information, instituting process automation through ERP (Enterprise Resource Planning) Systems and steps in the control process such as approval, payment and the tracking of procurement process deliverables (Ibem et al., 2016). This theory highlights that government and institution recognise the strategic importance of information and communication technology in the public procurement process and performance. In this study, the technology, environment and organisation theory explains the effect of information, communication and technology on procurement processes and performance (Brandon-Jones and Kauppi, 2018).

The main challenge of this theory is that it focuses on organisation practices and neglects macro factors such as the political environment of the public procurement outcomes. Thus, this theory public procurement outcomes.

3.5 Conceptual Framework for the Research

This research investigates the influence of the political environment on public procurement outcomes in two different contexts: Ireland and Saudi Arabia. Since political environment, in the long run, may shape the relationships and interactions between different agents, this research will integrate two different perspectives (i.e., macro and micro) to set the theoretical perspective of this research. It is formed from the institutional theory and stakeholder theory. While the institutional theory is proposed to set the analytic perspective of the institutional rationale of different agents in the medical device ecosystem (i.e., government, suppliers, users, and beneficiaries), the stakeholder theory will set the methodological perspective of understanding of each agent singly and define their needs, requirements, and points of view. Although the legitimacy theory required procurement to limit stakeholders actions and TOE theory can explain the interaction of stakeholders using technology. However, this research has partly adopted these two theories to support institutional theory at macro level and stakeholders perspectives at micro practical level.

Drawing on stakeholder theory (Freeman, 2010; Mitchell et al., 1997), it may be asked, 'who delivers the institutional value?' In this study we frame stakeholders as the institutional agents (e.g. individuals, groups, or organisation influencing or influenced by public procurement political regulations in practice). To go beyond the current literature in stakeholder and institutional research on healthcare integration, this research applies institutional and stakeholder theories as the theoretical lenses which provide insights into the mutual influences of many institutional actors interacting, communicating (which technology plays a significant role to shape it), implementing processesin practice and the outcome of doing so. Particularly, the concepts of stakeholders' attributes allowing us to describe the salience of stakeholders (Mitchell, Agle and Wood, 1997), while institutional theory helps to identify the dynamic pressures through which these attributes support stakeholders' power, legitimicy mutual influence using public procurement benchmarks to understand the outcomes of practices in different countries. A key to analysing this study, is to understand the top-down dominant logic of the political pressure, and buttom up opposing pressures from stakeholders influnce on

practice. The analytical perspective of this research is shown in Figure (3-1), highlighting that political envrionments shape the regulatory framework in each country; both of them are proposed to shape the institutional rationale of the organisations performing in this context, creating distinctive outcomes. The rationales are translated into practices by multiple stakeholders to deliver value through public procurement processes and activities (i.e. communication practices and the awarding methodology and critiera).

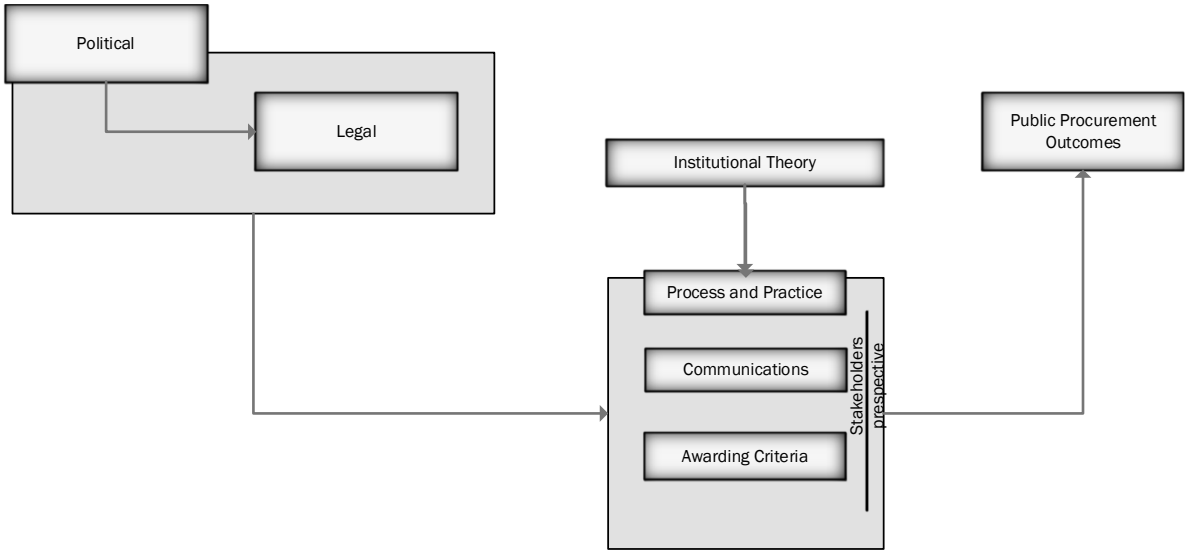

Figure 3-1: Research framework supported with theoretical stance.

4 Chapter 4 - Research Methodology

4.1 Introduction

This chapter discusses the scope of the research methodology and the tools used to conduct the research. The first part of the chapter is devoted to the underlying philosophy and methodology in general. The second part elaborates on the choice of method for this research. The first section of this begins by examining the researcher's philosophical stance (section 4.2) leading to the choice of the standpoint in the research paradigm (4.2.2). Section (4.3) justifies the methodological choice for conducting this research. It also presents the chosen research strategy and, in sections 4.4 and 4.5 gives the reason for selecting this strategy and its unit of analysis. Then section (4.6) describes the research processes, including theoretical sampling, techniques of collection (4.7), and data analysis (4.8). The chapter ends by considering ethical implications, and the validity and reliability of the findings. An overview of the research methodology and methods is illustrated by Figure (4.1).

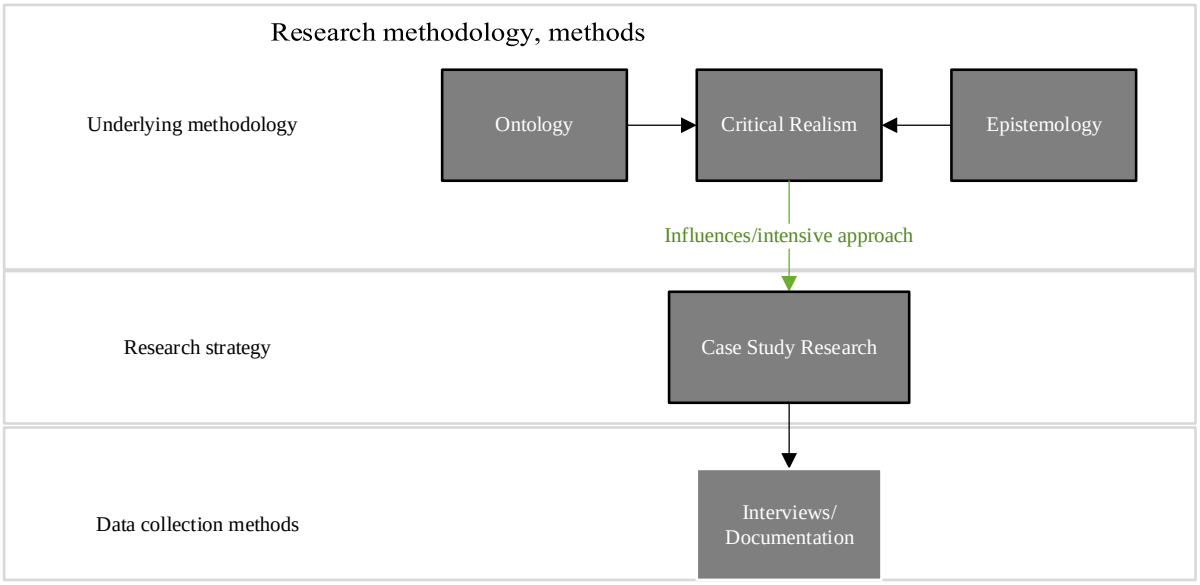

Figure 4-1: Overview of research methodology and methods

4.2 Philosophical Standpoint

The research philosophy in a piece of research captures the way in which the researcher reflects the development of knowledge and how the data have been gathered, analysed and structured.

Thus, the research strategy and method that researchers follow should fit within their chosen philosophical paradigms (Creswell, 2013). Therefore, researchers aim to design their research and discover the methods that will "interpret implications from research findings" (Bryman, 2012, p. 5). The philosophy characterised by critical concepts constitutes how researchers may be situated in relation to their surroundings (Guba and Lincoln, 1994). What they interpret as reality may be approached as a set of objective data (Sherman and May, 1996). Alternatively, it can be approached as a set of subjective data (Singleton, 2005, p. 31). Section 4.2.1. below summarises some ontological and epistemological standpoints and outlines the philosophy that underlies the present research.

4.2.1 Ontology and Epistemology

Ontology: is a branch of philosophy that considers the nature of social entities and processes (Bryman, 2012). It explicitly emphasises the difference between human perceptions and the world around people that they must explore (Gruber, 1993). The key question asked by ontology is 'What is the nature of reality?', the answer to which generally indicates either objectivism or constructivism. The first of these holds that social entities exist outside the social actors concerned with their existence (Saunders, 2012). Objectivists believe that social phenomena derive from two perceptible objects: the organisation and the culture (Bryman, 2012). This belief entails that people follow the standards of institutional regulation and are influenced by the environment and the values of the organisation's culture. However, social researchers explain and construct the truth about particular social phenomena by observing them in their context. In contrast, for the constructivists social phenomena such as organisation rules and culture are not prescribed, and need not constrain social actors. Rather, orders, rules, norms and values in organisations/cultures are constructed continuously and transformed by social actors (Bryman, 2012). For them, the social world is subjective, variously represented from different people's points of view and socially constructed through social interaction (Porter, 1996). When exploring social phenomena, therefore, social researchers are required primarily to consider social actors and their interactions with their environment.

Epistemology: This area of thought indicates how researchers acquire knowledge. Judgment can be right or wrong, but it needs to be valid before it can be considered knowledge (Landesman, 1996). An appropriate epistemology helps researchers to understand whether or not the perceived reality can be considered knowledge and whether this knowledge can help them to explain what they want to explain in the social world. For positivists, reality is external,

and objectives are gained through hypotheses and factual statistics; hence, for them knowledge must be confirmed by the senses and must be susceptible to statistical analysis. In contrast, the epistemology of interpretivism supports the idea of reality as a social construct. Consequently, in order to arrive at a causal explanation of its cause and effects. knowledge must be acquired through the interpretive understanding of individual actions (Bryman, 2012). Critical realism represents a connection between epistemological approaches (Losch, 2009). It is both like and unlike positivism and interpretivism in terms of how reality is perceived and how knowledge should be applied to understand reality.

The present study seeks to adopt the epistemological approach of critical realism, taking reality to be neither an objective and independent entity nor purely an interpreted construct. However, in its critical realist approach it is essential to understand the epistemological implications of the research.

4.2.2. Critical Realism

While sharing with positivism the idea that reality is independent of its observers, critical realism resembles interpretivism and argues that many structures underlying natural and social objects produce events by a causal mechanism (Collier, 1994; Bhaskar, 2013). Regarding human knowledge about reality, critical realists argue that the social and natural worlds exist autonomously. However, our knowledge about them is stratified, differentiated, transformative, and socially interpreted using prior social products (Bhaskar, 2008). Therefore, reality cannot be understood exclusively through empirical observation but also requires an investigation of its underlying structures, causal mechanisms, and certain conditions that produce events (Collier, 1994). Thus, critical realism can help researchers to integrate different layers of social entities and uncover the various levels of influence underlying politics and policy (Edwards, 2005; Thompson and Macmillan 2015). More specifically, critical realism is especially appropriate for considering the relationships in social processes, because it conceives social relations between institutions as facilitators of or constraints on their social activities (Bhaskar, 2013).

Critical realism provides a circular synthesis of both objective and subjective ontological stances with positivist and interpretivist epistemological approaches. The key differences between interpretivism and critical realism are the latter's belief in the power of people as agents, while the former considers that humans are alone in being able to see the world as a whole which can be affected by their activities; their subjective judgements may be interpreted

accordingly. The latter argues that people's power to understand reality is not sufficient to explain the social world. The causal efficacy of other social actors and social structures plays a part, for example, relationships within organisations and positions within a social context, which are part of a more comprehensive overview of the world (Peters et al., 2013).

Although most of the literature takes the positivist approach, public procurement is a multidisciplinary and complex area; a multi-functional emerging academic discipline (Flynn, Davis, 2014; McCue, Prier and Steinfeld, 2018). According to Spencer (2004, p.1) 'The concept of 'reality' in procurement raises more questions than answers. There are many different views of reality. Therefore, there is no dominant philosophy in procurement fields'. Some academics have forcefully endorsed the idea that the ontological and epistemological perspectives adopted are indivisibly bound up with specific methodologies and methods. However, the present study takes the view that methodology and methods are free from assumptions and the choice of which to use should be guided by the objective and the context of the research questions (Bryman 2012).

With this in mind, the present study employed a hybrid feature, critical realism, since it seems more appropriate for its research aim. On the one hand, it is a flexible approach for exploring procurement as part of a political vision and as seen in its practical implementations under two regulatory environments, Ireland and Saudi Arabia. On the other, it can be used to describe the differences and similarities of stakeholders' cultures and the processes, communication and outcomes of awards gained by institutions. Thus, it does not neglect the influence of the environment – markets, geographic location, and regulations – on politics. The regulation of procurement is described from objective observations and the evaluation of phenomena in both the chosen countries and the present study also explores and explains the underlying structures, processes and mechanisms. Moreover, critical realism is also suitable for case study research (Easton, 2010). Interpretivists are often interested in the concept of a phenomenon; critical realism is also appropriate for exploring the mechanisms that generate and direct the phenomenon (Peters et al., 2013).

Critical realism deploys two broad types of research method: extensive and intensive(Easton, 2010). The extensive (sometimes referred to as the comprehensive) approach often employs surveys and statistical analyses in large-scale group research, and uses regularities and similarities in its search for generalisation. In contrast, the intensive approach often employs interviews, ethnography, and qualitative document analysis to produce causal explanations of events or outcomes. These are what critical realists investigate, namely, the external and visible

behaviours of people and systems (Easton, 2010). The present study does not look for regularity on a large scale but rather uses qualitative interviews to understand environmental conditions and the similarities and differences in public procurement practices from different contexts. Therefore, the intensive approach is the more suitable for this research.

Critical realism also allows either an inductive or deductive approach or both. Although the inductive approach is often associated with theory generating research, the approach of the present study is not purely inductive. Interplay between the inductive and deductive approaches is often more appropriate, because it forces researchers to follow certain steps to continually make sense of the comparison (Saunders et al. 2012) and this explains processes at work in the light of contextual factors. These are also deduced in parallel from researchers' observations and assumptions concerning the nature of each case study (Strauss and Corbin, 1990). The next section describes the methodological choice and research strategy adopted by the present study.

4.3 Methodological choice: Qualitative or Quantitative?

Social science research can employ qualitative, quantitative, or mixed methods approaches (Tashakkori and Teddlie, 2010). The quantitative approach generalises results from a large sample of population to examine the relationship of variables through structured questionnaires or surveys and a data analysis procedure, including graphs and statistics, that generates mathematical data (Sounder, 2012). By contrast, a qualitative study tens to be exploratory and based on cases selected to meet the research needs. It allows for a more flexible approach in which insights are constantly revised and inform the subsequent data collection. Moreover, through qualitative research, researchers try to address "How" and "Why" questions, developing a rich understanding of the social and cultural context. Following the critical realist (intensive) approach, this research employed primarily qualitative data and secondary documents that were absorbed and analysed to support the interpretation of the qualitative data. The main research task is to investigate the public procurement context and communication during its procedures. In this regard qualitative strategy allows in-depth understanding of the processes, revealing how things happen (Miles and Huberman, 1994). This point is developed in section (4.5) below.

The function of a qualitative methodology here is to aid the design of a comprehensive procurement system (Flynn 2017; Bals et al., 2018; Patrucco, Walker, et al., 2019), but a comprehensive qualitative analysis is still missing. (Patrucco, Agasisti and Glas, 2020).Therefore, the present research has set out to understand public procurement by

conducting qualitative comparative case studies, taking account of the different views of many stakeholders.

4.4 Research Strategy (Case Study)

Research can use many strategies: experiments, surveys, archival sources, histories or case studies (Yin, 2014; Stake, 2010). While the characteristics of each method are unique, they often overlap with each other. The case study strategy focuses on understanding the dynamic forces present within unique settings (Eisenhardt, 1989). Case studies have been adapted to investigate a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context have no clear outcome (Yin, 2014). It is one of the best strategic choices for generating a broad understanding of a case or limited system of events, activities, processes, individuals or groups (Ollerenshaw and Creswell, 2002).

The case study is an appropriate method for research when it is intended to investigate an area of interest in depth (Patton, 1990). By using a particular case or scenario, the research can provide an insight into the typical environmental policy, planning and decision-making processes in existence in the situation under review. Further, it allows researchers to understand how individuals interact within their world (Denzin and Lincoln, 2011). Another advantage of the case study is that the cases are unusual enough to attract the interest of the public and policymakers (Yin 2014), which is relevant to what public procurement does. Stake (2010) notes that the main aim of case studies is to learn about a particular issue (in this research, procurement) within a culture (i.e. a national culture) and to describe a complex context.

The central aim of this research is to investigate political, regulatory and practical behaviour from a comparative perspective (Heady; 2001). The present study used case-based qualitative research on public procurement comparing practices in Ireland and Saudi Arabia. The comparative case study is recognised as one of the best analytical tools for understanding systems, processes, and outcome interventions in one or more countries (Goodrick, 2014) . In addition, Hantrais (1999) recommended comparative case design as a way to examine complex phenomena between two or more countries concentrating on politics, culture, institutions, systems and language with similar research techniques in order to understand similarities and differences. In the usual categorisation, comparative studies are motivated by the need to borrow knowledge understand, advise on, evaluate, and investigate gaps between theory and practice. The strength of comparative research also rests on its ability to foster new concepts, identify causal mechanisms and explore diversity (Azarian, 2011).

The research emphasised the contextual conditions (e.g., the politics and regulatory frameworks) that can influence the procurement processes and outcomes, exploring the different issues on which stakeholders interact and the way in which the procurement processes are adapted and constructed within each context. The next section presents the specific aspects of case studies and the level of analysis used in the present research.

4.2 Comparative case studies

In Social science, type of case study can be characterised in many ways for example single case study or multiple case studies (Yin,2014).However this research is adapting comparative case studies. Ragin and Zaret, (1983) divided comparative research into variable-oriented strategy and case-oriented strategy, the former type is concern with establishing relationships between variable, while the later one is focusing on in-depth knowledge of cases (Ragin and Zaret, 1983). The case-oriented strategy focuses on a relatively small number of cases that investigated in attention to each case as an interactable and enter-changeable as a whole unit (Ragin 2000). The Case Oriented approach is chosen for this research, which often employs a small number of cases to understand the whole complex issue under investigation within and across the nations (Hammersley and Gomm, 2000). Therefore, two countries case studies allow researcher to investigate in depth a large number of issues, which would not be possible in a multi-national study (Hantrais, 1999).

Case-oriented approach in public administration and political science can be further divided into two system design, which was considered on this comparative research: The most similar design "MSSD" and the most different system design "MDSD". The MSSD compares very similar countries with only a few different characteristics under investigation attempting to explain why there are different outcomes (peters 1998). Generally, the researcher can choose between countries with a number of common characteristics and restricted to only one difference, the disadvantageous of MSSD there are no countries are identically similar, *"*A looser application of a MSSD would be when we choose to study countries that appear to be similar in as many background characteristics as possible, but where the researcher never systematically matches the cases on all the relevant variables". If the MSSD is conceived of in the latter form, most regional comparative studies could be said to implicitly apply a MSSD (Anckar, 2008, p. 390)". However, comparative analysis cannot be limited to compare a few

factors, the nature of comparative analysis forces the researcher to go beyond the restricted area (Della Porta, 2008). Whereas MDSD comparison can compare different countries with different or similar outcome, this type of country comparative approach can go beyond restricted variables comparing social phenomenon in its context (Della Porta, 2008). The MDSD countries can clearly differ in particular aspects in terms of culture, geographic location, social and institutional structure. However, the aim is to explain these variances and explore existed casual factors despite the diversity between chosen countries (Hantrais, 2008). Collier and Collier (1991) recommend combining the most similar and most different system designs. The logic of comparison between two or more different countries with a few common features searching for the system's practice outcome under investigation (Landman, 2008).

This comparative approach study takes advantage of most similar and different large N studies regarding the depth of the analysis, which can be an attempt to complete each case's logic of casual processes (Blatter , 2008 and Hantrais, 2008). Comparative case studies encompass the analysis and synthesis of the similarities and variances or patterns across two or more cases that share common goals (Goodrick 2014, p 1). Comparing the differences and similarities that emerge to gain knowledge from each context was one of this project's aim.

The research is , following the blended choice of the most similar and the most different system. One critic of comparative studies, particularly international or cross-national comparisons, studying a distinct field of inquiry, is less concerned about the choice unit of analysis an explicit comparative frame of reference (Hantrais, 2008).Suppose countries are selected because they differ from each other in terms of a particular phenomenon. In that case, the aim is to explors these differences and explore whether any common causal factors exist despite the diversity (Hantrais, 1999).

Two different countries, ' Ireland and Saudi Arabia, were chosen with a different political system, market size and culture of administration, which offer contrasting empirical situations(detailed in section 1.6 chapter 1).However, international procurement systems have many common elements for instance; procurement benchmark steps are carried out to satisfy public, social environmental objectives and satisfying end user demand at the quantity , cost quality, within specified time frame . Each system is governance by different regulatory buddies, and institutionalised at multiple levels of governance structure, which attract researcher interest to understand how each system work. Furthermore , the procurement evaluated two different awarding mechanisms lowest price and Most Economically advantageous tender.

However, this research aims to understand the political pressures demonstrated through public procurement regulation and to investigate in depth how these systems translated into logic as a part of healthcare institution particularly when buying MDEs. In addition to understanding elements practices from multiple experts' stakeholders' actors' perspectives how each system results in a particular outcome.

4.2.1 Rational for international comparative case study of public procurement

This international comparative research on public procurement is trying to understand public procurement's different characteristics. There are various rationales for choosing to carry out an international comparative analysis between two high income developed and developing counties . While previous studies' focus were limited in one context of comparing procurement practices within European or developed countries (e.g. Sorenson and Kanavos, 2011; Patrucco et al., 2020,), investigating similarities and differences internationally is scarce. There is a need for comparing how procurement is adapted as a policy tool through procurement processes at the international level (Grandia and Meehan, 2017). Research comparing public procurement regulations across countries is limited due to the lack of comparable data (Djankov et al., 2017).

According to Harland et al(2013); Nijboer, Senden and Telgen, (2017) despite that similarities and differences across countries exist as not all countries implemented their variant simultaneously there is more than sufficient opportunity for cross-country learning: a country can learn from the experiences, of other countries" both good and bad experiences when implementing public procurement policies. However, this research the across international comparative case showed similarities and differences of factors actors that might influence public procurement practices in two different settings. It also offers a better understanding of the procurement system's diversity based on different political, regularity framework, culture, characteristics and interaction between stakeholders and their institution environment (Einsestadt, 1962). .

Finally, there is a depth and dearth of comparative research in the context of public procurement on medical devices in both developed and developing countries, and the finding outcome of this research may assist policy makers and other practitioners (e. g, buyers, suppliers, clinicians, and consultants) to leverage apportunties improving public procurement practices.

4.5 Unit of Analysis

The unit of analysis is concerned about what and who is under investigation, which may typically include an individual group or organisation (Babbie, 2012). The unit of analysis can be single or multiple. In an embedded design of case study, there are multiple units of analysis (Yin 2014). The selection in comparative research should follow logic and consistency but need not deploy all the attributes of qualitative approach. Researchers should think of this as comparing different rationale (Guba and Lincoln, 1994).

This study falls into the category of international comparative analysis in social science, representing different macro-, meso- and micro-levels as a pair of holistic cases (Blalock, 1778; Goodrick, 2014). Macro-levels typically involve institutional, national or international comparisons (here Ireland and Saudi Arabia). The meso-level refers to the middle range of interaction between the macro- and micro-units of analysis (procurement in the healthcare sector). Micro-units are the smallest units of analysis, typically individuals, or groups of people who are affected by, affect and are interlinked with the previous two levels (actors/stakeholders involved in the public procurement of medical devices). The analysis in the present study was conducted between smaller units to shed light on the public procurement in each country that functioned at a higher level. These three levels of analysis are collectively regarded as part of a case study of the procurement system in a single country which is compared and contrasted with that in the other country, as illustrated in Figure (4.2).

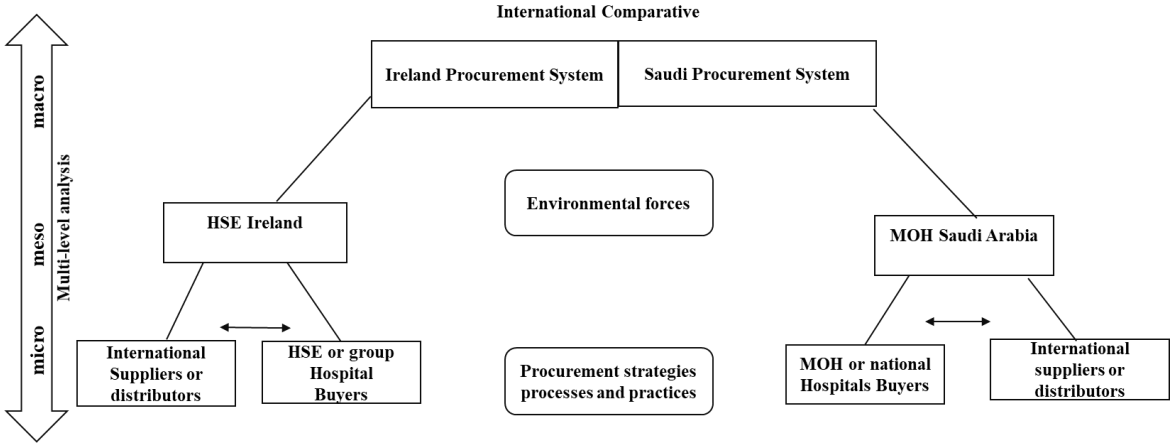

Figure 4-2:Levels of analysis (adapted from Goodrick 2014; Blalock 1979)

From Ireland, the sample of respondents came from the HSE, private international suppliers. Similarly, in Saudi Arabia, the sample was selected from the staff of the Ministry of Health. A list of the international private organisations operating in both contexts was compiled, and publicly available material such as tender documents (see section 4.7.2) were analysed. If this was not possible, the relevant contractors in Saudi Arabia and/or Ireland were studied, as an

alternative. The purpose in doing this was to account for product variabilities; it might impact on the research quality to assume that an organisation buying or selling one type of medical device would deal in a similar product for a whole country or that a country would deal in one type of medical device on a country-wide basis with another country. Focusing on the medical devices industry allows the differences and similarities in practices in a single industry to be investigated to see what challenges exist under some conditions but not others. The three levels of case selection criteria are summarised in table (4.1) below.

Pre-selection levels of criteria	**Description**
Macro-level : International/national	Procurement policies, regulations procurement benchmarks (Ireland and Saudi Arabia).
Meso-level: Institution/Organisation	Healthcare sector HSE, MoH
Micro-Level : Individual/Group; Type of Stakeholder	Key experts, stakeholders, players involved in buying medical devices and equipment (Buyers, Suppliers, clinicians and consultants). The international MDEs suppliers operate in both countries **or,** A contractor providing similar MDEs to both countries **or** ,An international supplier who has contractors in the country (supplies of medical devices and equipment)

Table 4-1:Levels of analysis

4.6 Research Methods

A comparative case study strategy uses many qualitative data resources, both primary and secondary, to enhance the credibility of the research (Patton, 1990; Yin, 2014). The data obtained from the qualitative analysis may be described as rich and deep conceptualisations of the social world (Denzin and Lincoln, 2000). Moreover, Patton (2015) asserts that people can attribute meaning to their experiences. He maintains that qualitative research contributes to interpreting the meaning of the making process, capturing people's perspectives to identify unexpected results, which allows an in-depth understanding of context (Patton, 2015 pp. 1-5). In comparative research, a qualitative approach helps to uncover factors and themes that are difficult to explore with other methods (Mills, van de Bunt and de Bruijn, 2006). The richness of qualitative data reflects authentic experience and reveals the complexity in natural contexts (Miles, Huberman and Saldana, 2014). Therefore, qualitative data makes it easier to interpret the views of stakeholders, which provide in-depth insights into the public procurement theory and practices under investigation.

4.7 Techniques of Data Collection

The data collection in the present study started by gathering the relevant regulation and policy documents and previous publicly available tender documents. The secondary data and documents collected before the interviews shed light on the major organisations involved in Ireland's tendering process. Thirty-five semi-structured interviews were conducted with respondents in Ireland and Saudi Arabia. In the next subsection, the interviewing and data collection processes are described.

4.7.1 Documentation

Documents are a source of much qualitative data, and are considered as receptacles, agents in their own right or resources to support further action (Prior, 2003). According to Patton (1990), documents are written materials and other documents from organisational, clinical, or programme records; memoranda and correspondence; official publications and reports; personal diaries, letters, artistic products, photographs, memorabilia; and written responses to open-ended surveys.

Like other analytical methods in qualitative research, documentary analysis requires data to be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge (Strauss and Corbin, 1990). Documentary analysis can cover all the examples of documents listed above (Patton, 1990 p.10).

In this study, original policy and regulation documents explicitly concerning procurement were used as primary documents and works by scholars and commercial reports were used as secondary documents.

4.7.1.1 Documents used

The documents collected are categorised in the table below which cited passim. in Chapters 3, 5, 6 and 7. The number of primary policy documents, such as procurement directives, medical device regulations and e-tenders used for this study is also listed in this table (4.2).

Regulation and policy documents	• Public procurement regulation and policy documents in both countries • Medical devices regulation documents relating to entry into the procurement market • Financial reports and procurement practice guidelines
Reports	• Medical devices and equipment market reports • Financial reports of annual spending.

	• Market reports • Chamber of Commerce reports • Experts' case reports related to the procurement of medical devices
Tender Documents	A total of 40 publicly available procurement tenders from both contexts: 20 tenders from Ireland and 20 from Saudi Arabia.

Table 4-2: Documentation sources

The documentation collected above was guided by scholarly teaching and related primary policy documents. Regulatory directives on both procurements and medical devices were collected and analysed to provide the research findings. The analysis of these documents focused more on supporting or refuting the findings than on statistically quantifying the results. The e-tender data visualisation processes is described below.

4.7.1.2 Data collection from documents and analysis

Data from documents were collected before and during the interviews, particularly the data from Saudi Arabia, where only a few tender documents were available (on E-temad, the e-tender platform). The quality of the data did not support quantitative measurement. Fortunately, this research was not concerned to reach conclusions about numbers or make statistical calculations. However, some of the data used in e-tender were quantitatively visualised and used to support the qualitative findings linked to the interview patterns and synthesis. In all, four points were investigated through documents before work on the interviews began. The research needed a complete tender document, a tender notice and its full documentation, together with the award notice for the following reason.

A tender notice for medical devices would show the date of publication of the tender and whatever information was publicly available to the private providers; the date of publication; the estimated price and quality. The name of the company, the procurement authorities, the date of tender publication, estimated cost, award criteria percentage, the successful price bid; the price that won the contract and the successful company awarded were shown in a table. For more information, please see Table (4.3). For ethical reasons, company names and most of the information must remain confidential.

The search was for a fully documented tender to allow more information to be shown in the table. If any tender document was missing or lacked essential information the whole tender had to be excluded. A tender was sought that showed the full cycle of procurement tender processes from publication to award (see Appendix G: 1-4).

Tender Arthurites	Date	Criteria	P %	Q %	E-price	N0 of bidders	Awarded Price	Awarded Company &Contract
XXXXXXXXX XXXXXXXXX	2/8/16 Date of award 3-5-2017	MEAT. No details of the scoring criteria in the award notice	65%	35%	€1300000 Not divided Per Publish notice	10	Awarded at Estimated price /Split Into lot under the framework agreement	XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX

Table 4-3: e-tender data collection, first phase.

Each tender was analysed and consolidated in an excel file table (4.4), this was not in order to find statistically significant results, but rather to show more clearly, for example, how tenders are formulated and awarded, how long the process takes, who are the right buyers and suppliers to approach in order to trace how the tendering process works.

1									
2		Pre						award	
3									
4	Tender Number	Time of Publication	Criteria Used	Cost Estimated	Quality %	Price%	Time of Award	Awarded Price	Number of bidders
5	1	02/08/2016	MEAT	1300000	35%	65%	03/05/2017	1300000	10
6	2	23/03/2013	MEAT	NA	40%	60%	12/01/2014	NA	6
7	3	20/05/2016	MEAT	240000	44%	56%	21/12/2016	100000	20
8	4	12/04/2015	MEAT	5000000	52%	48%	09/11/2015	4000000	26
9	5	23/10/2014	MEAT	NA	50%	50%	08/05/2015	NA	19
10	6	25/06/2014	MEAT	1000000	35%	65%	11/03/2015	960000	6
11	7	12/08/2015	MEAT	235000	40%	60%	27/06/2016	235000	5
12	8	13/04/2017	MEAT	3425000	50%	50%	01/07/2017	9260000	6
13	9	19/10/2015	MEAT	400000	50%	50%	01/09/2016	400000	6
14	10	08/12/2016	MEAT	40000000	50%	50%	26/08/2017	40000000	28
15	11	13/08/2014	MEAT	71987	50%	50%	30/09/2015	67281	4
16	12	06/01/2018	MEAT	400000	40%	60%	01/07/2018	284553	6
17	13	14/07/2015	MEAT	81300	50%	50%	02/11/2015	200000	2
18	14	17/02/2015	MEAT	963258	50%	50%	30/08/2016	963258	7
19	15	18/08/2016	MEAT	na	60%	40%	11/01/2017	na	11
20	16	11/10/2017	MEAT	3750000	58%	38%	23/04/2018	1162500	4
21	17	10/01/2013	MEAT	10000	60%	40%	26/02/2014	1000000	12
22	18	25/10/2018	MEAT	1200000	50%	50%	10/05/2019	1825512	3
23	19	27/01/2015	MEAT	1750000	50%	50%	08/02/2016	1750000	na
24	20	27/06/2018	MEAT	2800000	50%	50%	16/12/2018	3937000	5

Table 4-4: Irish tender information (Source: e-tender.ie)

Each individual tender was visually analysed. The terms and conditions in the available documents were studied, as well as the way in which these documents were formulated and awarded. This gave a deeper understanding of the process before the semi-structured interviews of the market conditions, the identity of the major buyers, and who were the most suitable contractors which could all affect the size of the sample. This exercise was believed to deepen the understanding of the tendering processes and how they worked in both countries. The Irish practices in tendering and how theories were translated in Ireland's actual tendering experiences were mostly absorbed from the available literature but the tender processes in Saudi Arabia were familiar. Hence the above steps were considered essential to support the stakeholders' perspective and strengthen the final result. Gathering the data also suggested that some suppliers in Ireland may station their contractors in Saudi Arabia, targeting the same brand or the same contractor or sub-contractor; this would allow a strong comparison

demonstrating the features of procurement in different settings. After simple analysis by means of Excel, the useful data were set out in Chapters 5-6.

4.7.1 Semi-Structured Interviews

Merriam (2009) stated that asking open-ended interview questions is a good practice which generates in-depth descriptive data and stories about the investigated phenomena. Interviews are among the important sources of data in case study research (Yin,2014; Stake, 1994). They fall into four types: structured, unstructured, semi-structured, and put to focus groups (Denzin and Lincoln, 2017). Here, semi-structured interviews were employed, as most suitable for this research. Stakeholder interviews provide the primary fundamental source of knowledge in case study research; they allow access to substantial empirical information that could not have been gleaned from policy documents alone (Barzelay et al., 2003). Thus, the main method for satisfying the present objectives was interviewing relevant stakeholders who were dealing daily with procurement processes. They provided unique explanations, practices, and points of view on the "How" and "Why" of particular topics (Yin, 2014). Before the interviews a list of carefully designed questions was generally compiled to allow flexibility and encourage further investigation beyond the proposed questions (Stake, 2010).

4.7.2.1 Interviewee's selection

The interviewees were selected according to the needs of the research; they were experts engaged in procurement processes key characteristics is listed on table(4.5). The conditions they had to satisfy were as follows. The participants had to be in a position where they could answer the interview questions with at least 8 years of experience of public procurement or in a position (i.e. as a clinician or procurement manager) to construct knowledge (Patton, 2015). Participants in Ireland were selected from a healthcare executive (the HSE) and two dependent hospitals. Similarly, in Saudi Arabia, the sample was purposefully chosen from the staff of the MoH, and two national hospitals. Selected suppliers involved in procurement were also essential because of their different perspectives on the workings of public procurement in different contexts.

The contact list of the potential respondents was collected from LinkedIn and the e-notices of previous tenders. Theese were divided according to their roles as clinicians, administrative staff, suppliers and government officials. The proposed participants were approached using the social media network. Sometimes, when particular organisations places or individuals were

difficult to access, snowball sampling was used, because it could find participants who were easy to identify, but difficult to access (Saunders et al, 2012). The study also made connections through my research advisor, colleagues or friends. At the end of each meeting, moreover, the participant was asked on behalf of the study to make contact with people who might help by adding their knowledge. This was helpful for finding new connections, particularly companies who operated in the two different countries; they eased the mutual understanding of buyers' interactions in these countries with the same supplier. According to Maxwell, 2013 (p. 165) participants in one study setting may have experience of another study setting or with the same setting at an earlier time; therefore, an investigator might be able to draw on their experience to identify critical factors and the effects that these have in a different setting. This applies in particular to the case of MDEs in both contexts; some of those who were interviewed as suppliers or consultants had previous experience as clinicians or had worked as buyers for years before changing their careers. One of the key informants was a principal procurement official in the EU, supplying medical devices to both Ireland and Saudi Arabia, who was able to describe examples from each context rigorously to show how companies dealt with various procurement challenges.

Buyers	**Procurement managers or directors:** internal procurement stakeholders involved in procurement processes for medical devices and supplies. Participants had to be at a managerial level, . **Clinicians:** end users who had a managerial position in a hospital ward, laboratory or X-ray unit.
Suppliers	According to the case unit selected, managers at the director or managerial level with eight years' experience or more of bidding for government tenders, particularly involving medical devices and equipment.
Consultants	External consultant involved in procurement, soliciting government procurement practitioners or suppliers of MDEs

Table 4-5: Participants sampled

4.7.2.1.1 Participants in Saudi Arabia

In Saudi Arabia, interviews were given by 19 procurement, healthcare and industry experts (see Table 4.6). Interviewees included suppliers (corporate and SME), independent consultants, clinicians and administrative staff in hospitals. Among the government staff interviewed were a Chief Planning officer, to learn about the political and regulatory factors in designing tendering documents and enforcing the political agenda, a Tender Officer to investigate the process of designing the tendering documents, a Senior Procurement Planning and Supply manager to outline the possible communication with suppliers and users, and

A Senior Buyer analyst to sum up the lessons learned and help with archival data. From the hospital side, interviews were given by a Procurement Officer, a Tender Officer and Head of a Radiology department. Two experts who were also interviewed were a former director of the Procurement Department at the MoH who went on to run a consultancy in public procurement, and a Ministry consultant. The experts were mostly independent and were expected to offer a holistic view. Different roles were represented in the choice of eight suppliers (in sales, as a company director of SME, a General Manager, a bid coordinator, a government overseer of quality compliance, and a government relations manager). The variety of the roles was meant to help a consolidated view of the research aspects under investigation to emerge.

Saudi Arabia (CB)						
No	**CodeNo**	**Gender**	**Designation**	**Experience**	**Date**	**Duration in minutes**
1	CBP1S	M	Regional Sales Manager	17 years	15/5/2019	112
2	CBP2B	M	Tender officer	12 years	15/5/2019	64
3	CAB3B	M	Procurement manager (hospital)	14 years	17/5/2019	85
4	CBP4S	M	Sales director	21 years	28/5/2019	58
5	CBP5B	F	Procurement specialist	8 years	19/6/2019	30
6	CBP6B	M	Procurement planner	13years	19/6/2019	87
7	CA/BP7S	F	Regulatory affairs and tender manager	10 years	21/6/2019	40
8	CBP8B	M	Senior Buyer analyst	14 years	29/6/2019	55
9	CBP9 S	M	General manager	22 years	2/7/2019	72
10	CBP10S	M	Owner of a small business	16 years	3/7/2019	61
11	CBP11B	M	Procurement officer	9 years	11/7/2019	47
12	CBP12S	M	Government quality compliance overseer	16 years	14/7/2019	113
13	CBP13P	F	Head of Radiography Department	23 years	22/7/2019	81
14	CBP14S	M	Sales manager	11 years	1/8/2019	61
15	CBP15C	M	Ministry consultant/Former director of procurement department	33 years	9/8/2019	75
16	CBP16B	M	Procurement officer	15 years	9/8/2019	45
17	CBP17B	M	First Procurement officer	19 years	17/8/2019	52
18	CBP18S	M	Senior contract manager	17 years	30/8/2019	39
19	CBP19S	M	Government relation manager	12 years	5/9/2019	92

Table 4-6: Interview participants on Saudi Arabia

4.7.2.1.2 Participants in Ireland

Similarly, in Ireland, sixteen interviews were conducted with the target cases, comprising eight suppliers, four buyers, two healthcare practitioners, and two procurement consultants (see Table (4.7). The number of officials working in public procurement of MDEs was 18 only. Among these, the interviewees were chosen as those in the most informative positions, namely, a National Director of Procurement (who was presumed to translate the political agenda into

practice and processes) and a Category Buyer (to represent the operations and the process itself). Interviewees were also chosen from two public hospitals. From the first of these, one clinician represented the doctors' side and one member of the administrative staff represent the administrative view. A senior manager came from the second hospital, its Hospital Procurement Manager. The suppliers had seven representatives speaking for the SMEs and CEOs, including a regulatory affairs officer, a Tender Manager for the EU/Middle East, a Bid & Tender Manager, a Tender specialist, and two Sales Directors. Of the seven, the regulatory affairs officer and the Tender Manager were working in Saudi and Ireland and had experience of the public procurement of MDEs in the two contexts.

Ireland(CA)					
CodeNo	**Gender**	**Designation**	**Experience**	**Date**	**Duration in minutes**
CAP1Supplier	M	Strategic Accounts & Commercial Manager Company Director	22 years	5/11/2018	84
CAP2Supplier	M	Contract and project manager	13 years	27/11/2018	42
CAP3 Supplier	M	Tender specialist	12 years	11/12/2018	49
CAP4 Consultant	M	CEO and managing director	36 years	17/12/2018	82
CAP5 Consultant	M	Procurement Consultant	19 years	7/1/2019	66
CAP6 Buyer	M	Procurement National Director	34 years	4/2/2019	62
CA/B7 Supplier	F	Regulatory affairs and tender manager EU-MENA	13 years	4/2/2019	59
CAP8 Buyer	M	Procurement & contract manager	14 years	21/2/2019	114
CAP9 Supplier	M	National Sales Manager	20 years	22/2/2019	53
CAP10 Supplier	F	Global Contracts, and Pricing Manager	17 years	12/4/2019	91
CAP11Supplier	F	Sales Manager self-employed (SME)	16 years	11/3/2019	80
CAP12Buyer	F	Hospital Procurement manager	21 years	16/4/2019	65
CAP13Supplier	M	Director, and sales executive	26 years	19/4/2019	65
CAP14Buyer	M	Category Buyer	11 years	22/4/2019	36
CAP15Supplier	M	Bid & Tender manager	9 years	25/4/2019	44
CAP16 Practitioner	M	Head of Laboratory department	18 years	30/4/2019	72

Table 4-7: Interview participants in Ireland

4.7.2.2 Interviews Guide

The interview guide, as noted above, recommended a list of well-designed questions, allowing flexibility encouraging investigation beyond the proposed questions (Stake, 2010). The interview guide had two main sections: demographic and research objectives. It said that the demographic questions were meant to filter and categorise the participants on the basis of their experience, rank (whether senior, manager or junior), and role (e.g. procurement officials, sales representative, doctor). Those whose experience was less than 8 years were eliminated to strengthen the credibility of the research findings. The research questions covered six main aspects: political, regulatory, the process in general, communication, awarding and outcomes of public procurement. Most of the questions were put to all the interviewees, but a few were

customised and put to a certain number only. The respondents were divided into suppliers, clinician, administrative staff in hospitals, government buyers and industry consultants. Following the pre-defined theme of the political and regulatory aspects of the conceptual framework (see Chapter 3) all the interviewees were asked the same questions on these aspects so as to elicit a consolidated view on the influence of these aspects and reveal how procurement performed within the health institutions.

The third predefined theme in the analytical framework was the process of procurement. Thus, questions on process were differentiated according to the role of the respondent; while suppliers' questions were mainly about the level of complication, the ease of their role and comments on the process from their points of view, the buyers and sponsors were asked about the process of collecting requirements and the preparation of tendering documents, weighting criteria, evaluation based on pre-determined scores, the proportions of quality, price and other elements within MEAT. Independent interviewees (i.e. consultants) and the funding agents were asked about the process of writing documents that dealt with tendering and specifications, using similar questions to those put to public procurers. The purpose here, based on stakeholder theory, was to match and consolidate the perspectives of the four key players: suppliers, users, funders, and independent participants. i.e., each stakeholder had a certain interest and thus might have a different point of view.

The fourth theme was communication. Questions on communication were put to suppliers and users. From the literature, it seems that the main concern for the supplier is the transparency and sufficiency of the communicated information. Thus, questions were asked about the clarity of the tendering documents, the perception of transparency in the communication process and their judgement on this process. They were asked about the last of these to bring out new themes in the communication process, while the questions about transparency were based on a theme f pre-defined in the literature. Regarding the users, the questions were about the process of writing and sending the correct requirements and specifications, which are defined on the users' side (i.e. by hospitals) and submitted to the funder. The focus here is to understand the problems of clinicians and administrative staff on the site and if possible, to discover how the power and logic could be shaped in writing requirements which are believed to influence the tendering documents and hence the outcomes.

The fifth theme predefined was the awarding criteria. The key aspects to underline here were the capacity of the awarding method/criteria to attain the procurement objectives and the underlying challenges in applying or using these criteria. For the Irish context, where MEAT

is used, the questions were extended to include the weights of the criteria, the role of clinicians, how they communicated to decide their collective requirements and the duration of contracts. The last aspect discussed in the interviews was the outcomes. It was left to the end of the interviews so as to avoid influencing the respondents' line of thought or let their answers to this question lead their other responses. Thus, the question asked about the procurement outcomes concerned the reasons for these particular outcomes. Finally, to ensure the reliability, credibility and validity of the research, questions were asked about whether the political, regulatory, process, communication, and awarding aspects affected the outcomes. Reliability was measured here by the level of consistency in the answers between those at the beginning of the interview and those in response to questions on the separate aspects. Credibility was ensured if the findings were reported consistently across all aspects and their influence on the outcomes. Validity was also ensured here because the respondents' understanding of the role of each of the aspects on the outcomes was adequate. Table (4-8)underline the main questions asked during the interviews.

	Suppliers	Clinician	Admin in hospital	Government Buyers Official	Industry Consultant
Political	What are the external political factors that impact on procurement functions? How they could influence the procurement outcomes				
Regulatory	What are the regulatory issues that may affect the public procurement system activity and outcomes? Give examples				
Regulatory and Process	What value do the new directives of 2014 and 2016 add to the procurement process functions and outcomes? Any simplification or complexity? What is the result of these changes?				
Process	How do you see the public procurement process? Easy? Complicated? Why and how?	How do you prepare for tender? Could you please take me through the steps of planning in your organisation?			
				How do government formulate tendering documents? What are the most important factors that you consider shape the specification documents?	
Communication	How clear do you think the tender notice and procurement documents are?	How do you and the procurement team work together to write the specification? Who are the decision makers buyers or clinicians?			
	How transparent is the current procurement process? How do you evaluate the communication process with the government?				
Awarding	Which criteria would you like to use MEAT or LP? How does the choice or weights of this criteria affect the outcome of the process?	Which criteria would you like to use MEAT or LP? Why?			
				How does the choice or weights of this criteria affect the outcome of the process?	
				What outcome of the award criteria are you currently seeing of public procurement system and what would you like to see?	
Outcomes	How do you define value for money? What elements create value? What should be the public procurement outcomes? Has the system achieved them? Why?				
Research Quality question	How does each of those aspects influence the procurement outcomes in your country?				

Table 4-8: The main interviews questions

4.8.7.2 Administration of Interviews

The interviews were conducted face-to-face in Ireland and Saudi Arabia. Interviewees were asked also to bring any documentation that they thought might help the research. The qualified interviewees numbered 35: 16 in Ireland and 19 in Saudi Arabia. The duration of these interviews ranged from 40 to 120 minutes. The time flexibility of the participants mainly determined the time spent with them.

The interviews took place on their offices, or in a coffee shop or meeting room at their workplace. The data collection extended from September 2018 to September 2019, the aim being to meet the right people to satisfy the purposes of the research at the right place within the selection criteria.

All the interviews were digitally recorded except for four participants in Saudi Arabia, who objected. All the recorded interviews in English were transcribed using Happy Scriber DCU, but the process for Saudi Arabia interviews was manual because the software does not support the Arabic language. These interviews in Arabic were also translated. The transcripts were made directly after each interview or on the following day in order to follow up with supplementary questions or after an unclear answer.

4.7.2.4 Ethical Considerations in the interviews

As noted above, it was vital to gain ethical approval for this research before starting to collect data. A full low-risk ethical approval was obtained from the Dublin City University ethics committee (see Appendix :A). Similarly, full ethical approval was gained from the MoH in Saudi Arabia (see Appendix :A). All ethical considerations were accounted for in this research, such as the participants' anonymity and details and those of private organisations. Each participant was given a unique code name. All the participants were provided with a letter of consent before the interview began. The DCU ethics committee gave its ethical approval to conduct the fieldwork. Permission was given by the Saudi healthcare authorities to send invitations to individual interviewees or enter the procurement departments in compliance with the culture of the kingdom. All the interview-related protocols and documents were translated into Arabic before ethical approval was obtained from the Ministry of Health (MoH) to start the interviews. First, before the interviews were held in Ireland, the questions and protocols

were tested on native English speakers, who had previous experience in procurement from the DCU Business School to ensure that the questions were clear and that the interviewing skills were sufficient to allow the interviews to seem conversational.

4.8 Data analysis

The CAQDAS programme for processing large amounts of data has become popular. Trying to learn the principles of coding to filter the participants' stories through thematic analysis under multiple disciplines, while also becoming competent at navigating the functions of CAQDS proved to be extremely difficult. This research employed manual coding and manual analysis for each participant's interview, as advised by some qualitative scholars such as Bryman, 2012; Saldaña, 2013; Mills and Humberin, 1994. This research adopted the approach of Charmaz, 2006 in analysing the interviews and secondary data. According to Charmaz, there are three types of coding: closed, open, and axial.

4.8.1 Closed Coding

Closed coding, also called predefined coding, is based on pre-defined criteria and the aspects for which the researcher is searching. Since this research adopted semi-structured interviews, these codes were defined in the questions which were embedded in the conceptual framework. The predefined codes cover the political, regulatory, process, communication, awarding and outcome aspects of procurement. Thus, the answers to these questions were summarised and listed in a Word file to consolidate the views and to unify the varied perspectives. The content of the secondary data related to each of these aspects were inserted in the same Word documents. This process of triangulating the methods in the analysis was designed to improve the validity and reliability of the analytical process and to address its self-reflexivity.

4.8.2 Open Coding

The second type of coding is open coding where emergent ideas are discovered in the text in itself and not predefined before the interviews. Thus, the definition of open coding is based on the use of neo-institutional theory to define the rationale of the institutions. According to neo-institutional theory, the logic is defined as the symbols, tools, methods or definitions addressed by the decision makers in the institutions. The open code is defined and used in this research on the basis of three criteria: that 1) it fits with the theory and could contribute to the knowledge; 2) it relates the code to the context to give a useful perspective; and 3) it is

consistent with the secondary data or, if not, the discrepancies can be clearly justified. If the code met these three criteria, then it allowed room for new reliable and valid codes to be used in the research.

4.8.3 Axial Coding

The last type of coding is axial coding where the researcher looks for relationships between events, codes, or explanations. Axial coding was used mainly to set up the research framework by comparing the two contexts and extrapolating the differences in the outcomes that could be due to differences between the contexts. Axial coding is helpful in developing the four models (i.e. the political, regulatory, communication and awarding models for the two contexts), which are to be consolidated in the research framework.

4.9 Research Quality

4.9.1Triangulation

Triangulation helps the researcher to withstand the accusation that a study's findings are simply an artefact of a single method, a single source, or a single investigator's bias (Patton 1990). Triangulation to validate the result was also an important technique in the present study which was seen as a way of contextualising evidence rather than using it as a container of information. It should be visualised as creating communicative turns in the construction of versions of events (Flick, 2006). This was undertaken by analysing the interview data while linking the findings with the documentation results. The benefit of triangulation is that it meets the challenge of supporting the views of many stakeholders according to their type, position, and level. It was not easy to establish consistency between the methods and the data set within cases and from one case country to the other. The document supporting one group's claim, however, was found by going back to the original documentation. Using triangulation during the analysis and consulting additional sources ensured that the information given had been checked and verified (Yin 2014; Peters, 2013). Furthermore, when Murray (2009, p. 99) expressed misgivings: "existing public procurement research approaches have limitations, as frequently there is an in-built bias and lack of triangulation through an over-reliance on procurement managers as the sole key respondents". samples were drawn from a wider group of stakeholders involved in the procurement process. They included samples from new categories or their equivalents, tested against evidence from existing documents. The methodology with reference to the validity of

the findings in this study took a multiple-methods approach mainly drawn from qualitative research methods.

4.9.2 Research Validity

To ensure the internal validity of the research finding, many strategies and techniques were used. First, according to (Beach and Pedersen, 2013, p. :2-29), process tracing is a within-case study method for making causal claims based on the view of causality. Concerning evaluation, process tracing aims to explain how an intervention has worked in practice. The mechanistic element of process tracing implies that a 'causal mechanism'– describing the chain of actions and reactions (activities) enacted by entities (actors) – connects the potential cause with its intended outcome. As a mechanism, it concerns a "process whereby causal forces are transmitted through a series of interlocking parts of a mechanism to produce an outcome" (Beach and Pedersen, 2013: 40). For example, during the interview, the research framework and a procurement process model were printed according to the procurement guidelines in the two countries (see Appendix B-3). This was to make sure that the participants understood specific details of the communication processes, the award, and the outcomes. The interviewees were probed to uncover attitudes, open new dimensions of a problem, and urge stakeholders to describe their personal stake in the process. This built an adequate knowledge of the way in which the procurement process was understood in both contexts. Building up and drawing the procurement processes in practice, as detailed in Figures 5.7 and 6.8 allowed procurement communication models to be constructed on the basis of the practices in each section, gathering more evidence in each episode.

Second, for greater depth in the interviews, different interview guides were used to respond to the profiles of different stakeholders. This was pre-tested with a few stakeholders from Ireland and Saudi Arabia. Finally, the research took both a deductive and an inductive approach to the findings and to strengthen the validity. It was found that with these strategies, the internal validity of the findings was relatively high; an understanding of the political and practical elements of the procurement of medical devices was demonstrated in two different case studies. However, this did not altogether prevent bias, since procurement data had been familiar for the five years preceding the research.

4.10 Summary

Qualitative methods were chosen for the present study because the quantitative approach could not yield enough data at the practical micro level. Furthermore, the qualitative approach has rarely been used in the procurement literature due to the complexity of gathering and validating the perspectives of many stakeholders at once. Yet this research from a critical realist standpoint allowed social conditions to be seen, the concept of quality to be interpreted through the words of expert interviewees, and organisational practices to be constructed. It relies on the researcher's judgement of how the truth can be found from multiple sources (Bhaskar, 2008-13). This research studied tender documents in detail in two contexts, including tender notices, documents, and tender awards, as well as collecting 35 interviews from expert stakeholders in the field and many regulations and reports to back up the research methods.

The next two chapters of this dissertation contain an extensive case study analysis of public procurement in the Republic of Ireland and in Saudi Arabia.

5 Case Study Result of the Procurement of Medical devices and Equipment for the Health Care Sector in Saudi Arabia

5.1 Introduction

This chapter aims to investigate the potential influence of the political environment that shapes the procurement rationale and outcomes in Ireland. It will investigate in depth how these political and legal aspects are influencing the procurement processes and award practices, which in turn will determine the public procurement performance. Thus, this chapter is structured based on the analytical framework developed in chapter 3 (Section 3.5, Figure 3.1). There are six main themes under investigations. They are political, legal, process, communication, selection, awarding and outcomes. Thus, this chapter, as visualised in figure 5.1, is structured as follow. First, the political forces are portrayed and investigated in section 5.4 to highlight the key themes that could shape the rationale rooted in the legal framework, process, and practices (including the selection and awarding criteria). The second section (5.5) will underline the translation of these political pressures on the legal framework to adopt certain rationale and values that could indicate and direct the process and practices. Both the political and regulatory frameworks are integrated in one Model (Section 5.6). Third section (5.7) will underline the process of the public procurement, the roots from the legal and political environments, and highlighting the key challenges faced in each of the step which can shape the final outcomes. The main practices that could shape the outcomes are the communications (section 5.8) selection (section 5.10) and awarding criteria (section 5.11). There are two models are deduced from the communication (Model 2- Section 5.9) and awarding criteria (Model 3- Section 5.12). The last section (5.13) before the summary is the public procurement outcomes which are results from the previous forces and pressures.

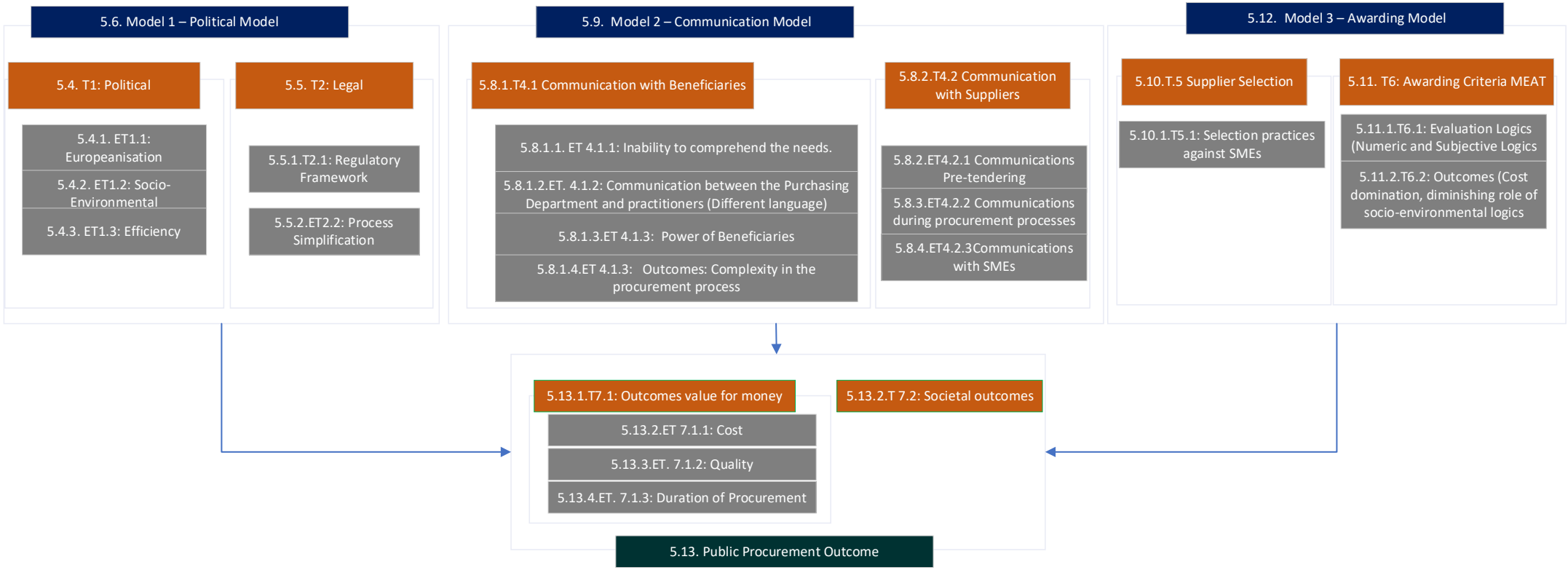

Figure 5-1:Irish Case Study Overview

5.2 Research Methods

This chapter presents data from three data sources and examines the findings on Ireland's healthcare procurement systems, particularly medical devices and equipment (MDEs). The first type of data comes from semi-structured interviews with experts in the healthcare sector in Ireland; the empirical data were collected from four groups of stakeholders (buyers, medical practitioners, consultants and suppliers) involved in public procurement who gave 16 expert interviews at managerial level. The list of respondents is in Chapter 4 (Table 4.5)

The second type of source was tender documents (20 tenders dated between 2013 and 2019). The third type of source yielded secondary data in such areas as policy, regulations, industry reports and procurement guidelines). The goal was to analyse the strengths and weaknesses of procurement systems throughout the procurement cycle in terms of pre-tender, procurement processes, internal practice, communications, and awards. The data, both primary and secondary used a mainly linear approach to data presentation, with the data sources used interchangeably, matching patterns and triangulation techniques (Yin 2014). First, on the macro-level, the chapter analyses the environmental influences from politicians and regulations (at the EU and national level). Second, on the meso level, it analyses how the externals align with the multiple expectations of internal institutional practices. Third, on the micro-level, it analyses how the interaction and logic of multiple actors leads to a certain award outcome.

5.3 Institutional Settings

5.3.1 Public procurement organisational structure

The office of government procurement (OGP) is central to public procurement and assumes responsibility for sourcing and contracting for the category of common expenditure (OGP, 2018 A). Ireland's public procurement of medical devices is governed by the national law based on the EU directive on public procurement 2004/18(OGP). However, four sectors including healthcare retain sourcing and contract functions and still themselves procure certain of their own specific items on behalf of the government departments and agencies. This being the case, the Health Service Executive (HSE) continues to govern the procurement operations of healthcare in Ireland as set out in the Health Act 2004 (Public Accounts Committee and OGP, 2018b-02-02). The central government allocates a planned budget for HSE expenditure each year based on the Health care Business Services (HBS) for every three years' expenditure (HBS, 2019). The Irish healthcare sector has two independent bodies of hospitals, public and

private, on the first of which the present study is focused. While many hospitals in Ireland are directly operated by the HSE, seven voluntary hospitals are financially independent and have independent funding; they are managed by their own executive boards of directors (HSE, 2020). HBS became a central purchasing department of the health care sector in 2013 as part of a government initiative plan for optimising healthcare and procurement. HBS also allowed more room for the HSE to concentrate on health and social care functions while the HBS tackled the procurement, finance, and other business executive functions (HSE, 2019). The current procurement department structure is demonstrated in Figure (5-2).

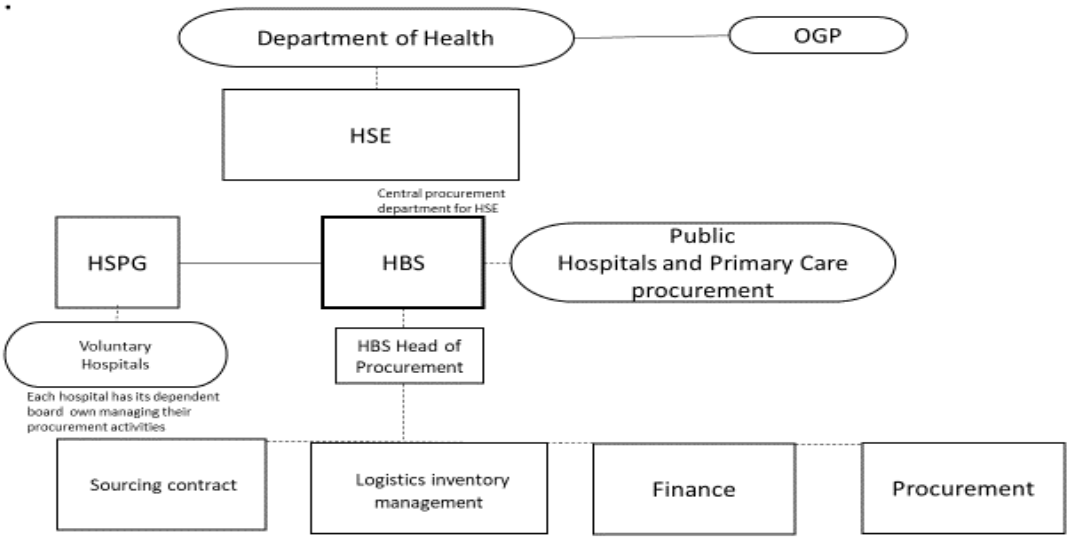

Figure 5-2: Irish Healthcare procurement structure source (duplicated by Author from hse.ie)

5.3.2 Regulations for medical devices

In Ireland the regulations for medical device products are based on Directive 2001/83/EC in the Community code for human use implemented by the Irish Medicines Board (IMB) 1995 (Davis, 2012) and amended by various regulations. In July 2014, IMB became the HPRA or Health Products Regulatory Authority. Apart from the HPRA, which is the national competent authority, there are other authorities which regulate medical products, like the European Medicines Agency (EMA), the Environmental Protection Agency (EPA), and the Food Safety Authority of Ireland (FSAI).

The main functions of the HPRA are to regulate medical devices, authorise health care products, monitor the quality, manufacture, and distribution of medical products, and ensure the implementation of the EU and national legislation relating to biotechnological components (Gallagher & Doyle-Rossi, 2019). It also protects consumers of health care products and

devices from any risk, to comply with EU and national MDE regulations (HPRA, 2020). The HPRA maintains and operates a national reporting system to regularly monitor the products that they regulate. This allows users to report any issues related to safety, quality, or efficacy.

5.4 Theme 1: Political Pressures

The main differentiating factor of the Irish case study from those of Saudi Arabia (a monarchy) is the political environment which shapes the legal framework, process, and practices and in turn may influence outcomes. Political pressure comes from the country's governance structure, which may influence the power of its institutions in deciding their outcomes and the mechanisms to deliver their objectives (Erridge, 2007). Elected governments also face political demands from different stakeholders in its ecosystem to set its legal framework in a certain direction. The EU vision strategy 2020 focuses on the economic growth of a single market that is open, fair and competitive for all citizens, supportive of government policy, social inclusion, the protection of small and minority businesses, and a green environment and innovation policy (European Commission, 2010). This may clash with institutions because it is focused more on day-to-day practices, the commercial use of market mechanisms, communication to reduce costs and increase quality.

There are three main themes reflecting the political pressures as visualised in Figure 5-3. This research found an emergent theme, which is that pressures to Europeanise which does not influence the legal framework only but also the practices and outcomes (section 5.4.1). As will be detailed in the following sections, the other pressures are the socio-environmental from lobbies and non-profit environmental organisations (5.4.2) and the efficiency pressures from the public (5.4.3).

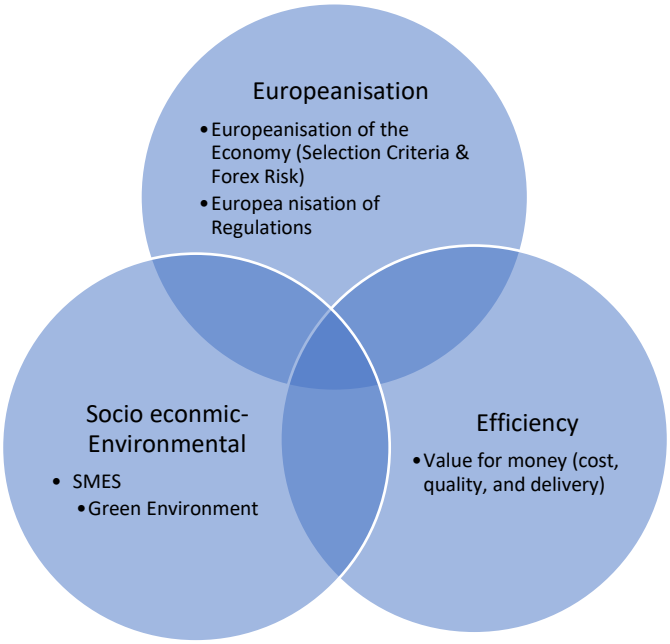

Figure 5-3: Political Pressures influencing procurement outcomes in Ireland

5.4.1 Emergent theme 1.1: pressures to Europeanise

The first emergent theme reflecting the political pressure is the Europenisation of the MDEs ecosystem. Indeed, the main pressure in this case study comes from the European Union which keeps putting forward the process of Europeanisation. Europeanisation is an incremental process of re-orienting the direction and shape of politics and practices to be fully aligned and consistent with the EU system (Richardson, 2005, p. 56), "to the degree that EU political and economic dynamics become part of the organisational logic of national politics and policy-making" (Ladrech, 1994, p. 69). This ultimately creates European rationale in conducting the practices of procurement.

Yet Irish public procurement before 2004 was fully independent and able to set its own procurement strategy without supervision or guidance from external bodies. Since Ireland joined the European Union, the political arena has been radically transformed, and the independence of their institutions has become highly reliant on EU frameworks, increasing the standardisation of the procurement strategy formulation process with European partners. Features of Europeanisation in this research concern the economy (5.4.1.1), legal framework (5.8) process and communication (5.7 & 5.8) and awarding (5.11).

5.4.1.1 Europeanisation of the Economy

Europeanisation of the economy means setting implicit and institutional pressures to limit the access of non-European firms to the European market. This can be done directly through setting European standards and certificates to limit the access of international firms (as detailed in section 5.4.1.2). Although the EU embraces the strategy of the open market, this open market strategy is open only to the European Union, putting outsiders at a disadvantage. The most recent challenge has been that of Brexit, the secession of the UK, which experts believe will have a significant effect. Although British firms have all the certificates accepted by the European Union, it is feared that they will not be able to act in the market as before, due to its institutional pressure against non-European firms.

> *" Now, after Brexit, there is uncertainty in "who" will be in the Ireland market and who can not be. The British suppliers offer 70% of the purchases of the HSE. Now, after Brexit, will the British companies be able to serve this market? if yes, will the prices change? If no, which companies will replace the British ones? This kind of complexity may make the strategy development process more challenging."* CAP14 Category Buyer

> *"I think Brexit has thrown up new challenges in this respect because the transaction policies, transaction costs and the volatility of the currency is…we are living in a climate where markets are driven by sentiment more than by anything else. It used to be that markets were driven by hard economic data but not … just, more about sentiment isn't it? It's more about nervousness, about what are the risk factors at work in the geopolitics of the world? So, you know, I think it seems to me that economics more than ever before is a human science rather than a mathematical one and that tender will continue to cut prices but they will increase also". CAP4 CEO and Managing Director/Consultant.*

Beside the preferential selection process against non-European firms, they face extra risks from forex trading. Part of the Europeanisation process is to use the same currency throughout Europe, which imposes stability in financial transactions for European suppliers but disadvantages non-European ones. The main force noted here in formulating the procurement strategy is thus not the current allotted budget, but rather is the forex risks. The pre-determined budget is not affected because the government follows a strict framework that apparently evaluates suppliers and sets tenders from a multi-dimensional perspective. The main challenge in consequence is foreign exchange volatility, which in the last few years has influenced the comparability of different tenders and affected the sustainability of successful contracting. Although the government stipulates that all contracts should be in Euros, their international suppliers (outside the Euro-Zone) may be under some risk from currency fluctuations against the Euro.

"A fixed cost in Euros that [cuts] into our tender price would cut down those risks because raw material does increase in price and therefore, we've got to make that judgment call. I don't want to win a tender on a price that is, you know, that [is] unsustainable". CAP15 Tender manager

"*Currency fluctuations …. can be a huge challenge for international suppliers".CAP2 Contract and project manager.*

"Suppliers are aware of the risk accrued from the market fluctuation under the framework or the public tender. As a result of the duration of the processes and contract agreement suppliers, allow between 5 and 10% of the price for uncertainties." CAP15 Tender manager

The perceived outcome may be a closed European market which is controlled by big European suppliers.

"Under the current public procurement system, it's almost a "cartel" now that you have a small number of big firms who operate across Europe" CAP4 CEO and Managing Director/ Consultant.

To sum up, as summarised in Table 5-1, the European market is conservative and sets implicit and explicit barriers to international suppliers. They appear as European specifications and standards that may limit the potential of international firms to penetrate European ones. The other hidden barrier to the international suppliers is the forex risks. The local supplier, who sourced from outside, will accept this risk but probably will charge a percentage more than the local producer to tackle the forex risks.

Factor	Practices enforcing Europeanisation rationale
Europeanisation of the economic environment	Europeanisation of the standards and criteria for suppliers' selections (detailed in section 5.4.4)
	Gives financial stability to the European producers
	Control of the market by large firms who may afford quality and compete in price vs. quantity contests.
	Puts international suppliers and their agents at risk from forex and hedges this by offering higher prices or acts through a third party who also offers higher prices.

Table 5-1: Europeanisation of the Public Procurement economics rationale

5.4.1.2 Europeanisation of the of public procurement directives

The public procurement regulation in Ireland is under the supervision of EU procurement commissions. However, procurement practice can be affected by two main European regulations. Directive 2004/18/EC laid down the European Union (EU) rules for awarding contracts for public works, supplies and services (for more details see section (5.5). The second

European regulation is related to the market entry of medical devices, which also affects the general competition of the procurement market but not the main concern of this research. Before 2014, the main body responsible for regulating the market entry was the "Irish Medicines Board" which was partly independent in its policies and rules. It changed into the "Health Products Regulatory Authority (HPRA)" which, according to its report published in 2020 (HPRA, 2020, p.2) had a clear vision of itself as fully aligned and compliant with the EU system. The HBS was incorporated in 2013 to ensure that the whole procurement strategy was aligned with frameworks defined by the EU, as noted in the report (HSE, 2016 a). Now, more than before, the procurement official has to comply with the EU system to maintain its overall political agenda, as CAP4 consultant explained:

> *"The Irish procurement is under pressure from the EU directive. So, we have an obligation to comply with the rules of the procurement directive".* CAP4 Consultant Managing Director.

> *"I know in the real world people are operating under time constraints and that often results in a lot of pressure from the political system to comply with EU requirement or other reasons to meet deadlines to get the tender published and to get the system working, to ensure the health and safety of the product required" CAP12B (Hospital procurement manager)*

In 2017, the EU set six priorities for its reform of public procurement. These were to do with innovation, green and social criteria in awarding public contracts; the professionalisation of public buyers; improving access by SMEs to procurement markets in the EU and by EU companies in third countries; increasing the transparency, integrity and quality of procurement data; digitisation of procurement processes; and finally more cooperation among public buyers across the EU.

These priorities appear as aspects of the legal framework (i.e., standardisation of the process), economic pressures and also the rules governing the process of awarding criteria (i.e. selection and the MEAT criterion) and pre-tendering activities (i.e. restricted commercial dialogue). The legal framework aspects are detailed in section 5.5.

5.4.2 Emergent theme 1.2: socio-environmental

Socio-environmental forces are defined as the public pressure to align the government procurement strategy with people's social and environmental needs. Partly from the European union, the Irish policy emerged from the European code of best practice to facilitate the entry of SMEs into public procurement contracts (European Commission, 2008b). The EU commissions proposed individual measures of 11 indexes to this area to address at the EU and member states' level, in order to reduce the barriers to public sector contracts for SMEs. The

policy aims to enhance their participation rate by easing difficulties in relation to big contracts. Introducing access to all available opportunities, reducing the administrative burden, alleviating the criteria for eligibility, and addressing information-sharing among tenderers.

Compliant with the institutionalisation of the European rationale across its members, the Irish public procurement vision focuses on three key aspects: open and transparent communication, integration of the Irish SMEs, and the responsibility of the ethics (OGP, 2017). The Irish government argues to have a progressive policy of facilitating the involvement of SMEs in public procurement. Meanwhile, the government's agenda for the last six years has been to develop the economy through SMEs, which is believed by political officers that it can reduce the rate of unemployment and gain some other societal objectives. Theoretically, the government developed and follow the comprehensive guidance on the use of environmental clauses as set out in Green Tenders Plan 2012 and Green Tenders Plan 2014. However, the evidence seems to be short-sighted and not on the long terms impacts on the environment as noted by the National Sales Manager of one of the large corporates selling to the government.

> *"You're trying to convince politicians and senior HSE people that who actually make the savings to be hard, and politicians is thinking 'I'm only elected for the next four or five years I don't care about it in 10 years' time'. you know what I mean. So, it's short-term short term. It's a, unfortunately" .CAP9S National Sales Manager*

The level of success of this policy of including SMEs will be investigated, verified, evaluated, and detailed throughout this chapter and concluded in the public procurement outcomes section.

The second pressure is from Non-profit Government Organisations (NGOs) play a role in the Irish government's procurement policy. IMSTA is one of the lobbies in Ireland trying to steer the procurement of medical devices to focus more on social factors and patient outcomes rather than other aspects of public procurement.

> *"Obviously the Trade Association **IMSTA** would play a role or is trying to play a role there but again its … you're dealing with the HSE in a **political environment** that's been evolving and changing and, you know, getting to the right stakeholders. The right stakeholders have been in place for long enough and enough to have a consistent approach which has been a bit of a challenge for the last years in the Irish healthcare market" CAP1S Commercial Manager and Company Director.*

Although the potential influence of these associations in the policy making of the public procurement in MDEs, this research has not noted a significant influence on the public procurement outcomes, according to this research epistemic perspective.

5.4.3 Emergent theme 1.3 Efficiency pressures

As a technocrat government liable to the elected parliament, the presumed and expected pressure is to maintain efficiency as far as possible. Institutions are under pressure to obtain better value for money. This creates a logic of efficiency in the public procurement practices (i.e. communication and awarding criteria), as detailed in sections 5.8 and 5.11. The most affected areas are political pressures, budget constraints, accountabilities with process and tender time pressures.

> *"The focus is on value for money particularly price within budget and accountability in the procurement processes as the parliamentary mechanisms for accountability have acquired more teeth, like the parliamentary, committee on public accounts, all ministries including health" CAP12B Hospital procurement manager.*

Thus, the ultimate logic of the Irish government in dealing with public procurement is the efficiency logic that is compatible with the Europeanisation rationale (in terms of policies, practices and regulations). These two main aspects constitute the political logic in leading the public procurement in this case study.

> *"I suppose every public procurement or every public authority that we deal with requires **compliance with EU directives** when procuring items and so we will, particularly when a project comes up we have to procure, and the contracting authority is very conscious of public sector audits **on money** and how the procurement process does that takes place. So every job is done **to meet the requirement**s if it's over the threshold and internal practitioners also conscious of **price** and **quality** within **budget**, so we must watch out to **balance multiple element**s" CAP14 Category buyer*

However, this pressure from the logic can be described differently at different levels (e.g. at the EU level to follow the procurement guideline (standardisation of the processes, the national level to direct institutional implementation quickly and efficiently within budget and time constraints, which might undermine other objectives in practices)

5.5 Theme 2: Legal Framework

5.5.1 Emergent Theme 2.1. Europeanisation of public procurement regulation

The Europeanisation process imposes its logic in the public procurement by imposing its rules and intervening in the legal framework governing this field (Hemiciave, 2018). The summary of laws are in Table 5.2. To create a standardised procurement process across Europe, EU law sets out standardised public procurement rules: the European Communities Regulations SI No. 329 of 2006, the European Communities Regulations SI No.50 of 2007, and the European

Union Regulations SI No 62 of 2012 have enabled the Irish legal system to derive its national laws from the EU procurement Directives 2004/18/EC, 2004/17/EC and 2009/81/EC (Bianchi & Guidi, 2010).

Once Ireland joined the European Commission, the public sector was forced to be aligned with the European regulations in the contracting process. These EU rules govern the way public authorities and certain utility operators purchase goods, works, and services. Directive 2014/24/EU, Directive 2014/25/EU (on procurement by organisations in the utilities, transport, and postal service sectors), and Directive 2014/23/EU on the awarding of concession contracts (European Commission, 2018a). On 18th April 2016, the European Union introduced three new directives that the EU countries had to transpose into their national laws.

So, the Irish public procurement of medical devices is governed by the national law based on the EU directive on public procurement 2004/18. The EU directive on public procurement was incorporated into Irish law without any modification (EU Commission 2017), in line with best practice at the EU level (Brennan, 2016b). Legal forces are defined in this research as the changes in the legal framework that may have an effect on public procurement practices (i.e. identifying suppliers, and awarding contracts). The Irish public sector has seen continuous change in the legal framework since 2004. The greatest transformation was in 2004; after that the changes were minor or contradicted by others.

> *In Ireland following the EU Procurement directive a major reform by the EU parliament is made every 10 years while there is a minor change in the regulations every two years … the existing reforms were not really effective as much as the 2004 procurement agreement". CAP4 Consulting Managing Director.*

This change in the legal forces from closed to open and from political independence to partnership influenced the government strategies and mechanisms in procurement. This obliged the public sector to be open and able to take bids from European suppliers and use the MEAT criterion instead of the cheapest price strategy.

Low	Transformation to Irish national law	Political Priorities	Evidence
2004/18/EC 2004/17/EC	2006-2009	To standardise procurement process across the European countries (Section5.2.2) To have European open (Section 5.3.2)	The processes standardisation was effective. The regulation enhanced and facilitated companies' access to the procurement market.

EU Directive 2014/24/EU [Public Procurement (goods, services and works)]	Irish Regulations 2016 S.I. No. 284/2016	Simplifying public procurement procedures and making them flexible (Section 5.3.1) Unifying common societal goals in the procurement process, including environmental protection, social responsibility, innovation, combating climate change, employment, public health and other social and environmental considerations. Enhancing access of SMEs. Encouraging the use of MEAT	The regularities framework encourages the member states to mainly use MEAT. The key stakeholders see the last reform as more complying with regulations, as opposed to the commercial side of procurement.

Table 5-2: EU Directives on Public Procurement source compiled by Author from EU procurement commission 2014).

5.5.2 Emergent theme 2.2: Standardisation and the simplification of the process

Europeanisation institutionalises the rationale of public procurement by standardising the process of strategy formulation. The European Communities Regulations SI No. 329 of 2006 standardised procurement processes and regulation, ensured better access to procurement for member states, opened up the market based on common logic (European Communities Regulations SI No.50 of 2007, and the European Union Regulations SI No 62 of 2012 , Directive 2014/24/EU, Directive 2014/25/EU (European Commission, 2014),

These directives were aimed at simplifying the public procurement procedure and making them more flexible for public buyers and suppliers, and to unify the societal objectives, enhancing better environmental and social outcome. These standardisation pressures are observed in this research, by interviewees, that are improved the perception of transparency and fairness, as well as the clarity of the process. While standardising the processes, simplifying, and unifying processes within the union, improving transparency, and increase competition are beneficial, they also turned out to be a barrier imposed for the sake of better commercial outcomes.

> *"I find is that they are **clear and transparent**. It doesn't benefit anybody or any individual vendor directly. Like it's very fair competition that darkens the room and has to be fair because not only are we trying to be compliant but optimising the spending the public money".*CAP8 Hospital procurement manager
>
> *"The system has fair competition because not only are we trying to be compliant but spending the public money".CAP6 Procurement national director*
>
> *"…in terms of tendering rules and regulations, the system becomes fairer after 2014"*. CAP2 Contract and Project Manager.

In practice the new directive also brought drawbacks, restricting practitioners' ability to gain better commercial outcomes. The directive enforces standard procurement documents and processes to strictly comply more with the processes, rather than allowing flexibilities in shaping technical specifications to gain better tender outcomes, which produced a clash between flexibility and standardisation.

> "*the honest answer to that is no I do not see significant market reforms* and *the directive index 2014 services revolve around process as opposed to commercial outcome* and *i.e. restrict commercial dialogue to achieve what it is you want to achieve* and *"I fear that* ***many elements of the regulations prevent*** *us from getting the* ***commercial outcomes****"(CAP6 Buyer)*

According to Schuster (2017), the political and external pressure on procurement professionals makes it difficult to make the right decision. This is particularly relevant when the public procurement authorities are trying to improve the procurement outcome. However are reluctant to impose regulation and standardisation which may prevent them from gaining the desired outcome.

5.6 Model 1: The influence of political and regulatory pressures on Public Procurement outcomes

The political and regulatory model (Figure 5-4) is based on neo-institutional theory (DiMaggio and Powell, 1983) in which rationale, the origin of rationale, and the outcome of the rationale may explain an institution's behaviours and ecosystem outcomes (Scott, 2005). Thus, this research investigated the key political pressures shaping the Irish public procurement ecosystem and found that three main powers are responsible for them. They are the European Union, governments as technocrats and non-profit organisations. European Union logic focuses mainly on having an open market with discriminatory pressures against non-Europeans which are reflected in the legal framework in terms of setting contracts in the Euro-Zone (which moves the forex risk to the international suppliers), a discriminatory selection process (which does not recognize non-European and non-American certificates), and standardisation of the processes for compliance and simplification (to reduce the process cost and time for European corporates but may increase administrative costs for international competitors who integrate with the system). These aspects of the legal framework have created a practice outcome which is that the international suppliers charge European countries higher prices than other countries and the best offers may be lost because they speak a non-European language. This indeed is perceived to have an effect on value for money by sacrificing the best options available if they

come from an international supplier. However, it may have positive effects on value for money because it has enabled the European corporates to penetrate the Irish market, which has become less complex because of the standardisation of the process with other countries in the EU, at less cost and in a more efficient way. It has made European firms cut their expenses and offer high value for money. But this efficiency is a double-edged weapon for the Irish market. While it enabled the European corporates to offer lower prices and gave the SMEs better access to the market because of the ease of the process, European corporates are perceived to be penetrating the market faster than the SMEs can cope with them; the SMEs may need to be protected from the European giants. Standardisation also focuses on processes and compliance rather than practical and commercial advantages from an institutional point of view.

The second political pressure comes from government composed of technocrats. Such governments seeking to decrease cost and effort as far as possible, creating an efficiency logic which is perceived as important for reducing time and cost and speeding up processes. However, excessive focus on efficiency is perceived to compete directly with the political pressures from non-profit organisations (e.g. IMSTA) which stress good environmental and patient outcomes. The government logic, which exerts coercive pressure in the ecosystem, contradicts harshly the non-profit organisation rationale which may form the normative pressure in this system. The final outcome is perceived to be mainly that the coercive pressures focus on efficiency (i.e. cost and speed, as long as something is fit for purpose).

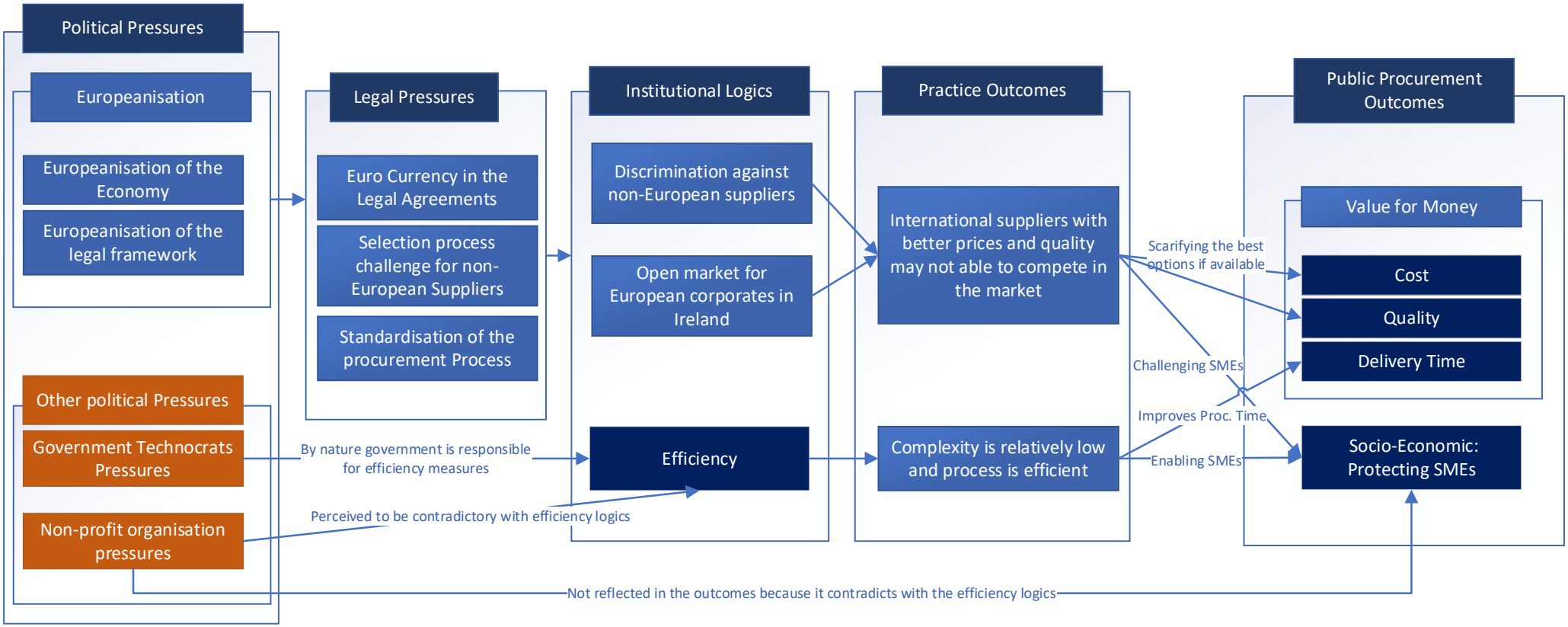

Figure 5-4: The influence of political and regulatory pressures on Public Procurement outcomes

5.7 Theme 3: the Public Procurement Process and Practices according to the legal guideline

The third theme under investigation is the public procurement process. The process is regulated on the basis of different procedures conditioned by the contract value according to EU procurement law. This section will give a background on the different public procurement processes in different scenarios to scope out the research focus on a certain process in a certain condition.

The differences in the public procurement processes is based mainly on the size of the contract and the level of complexity. The size of the contract is defined based on a certain threshold that public authorities should consider, based on estimated contract value (OGP, 2019).

> *"the character and nature of tender define the award criteria. For instance, the low-price approach is used for low-quality items such as tables and chairs, but high-quality criteria are used for surgical, diagnosis and other items".* CAP12 Hospital procurement manager

All procurement contracts are subject to the EU regulation framework, granting free access to Irish tenders of all sizes from all EU countries. However, different roles and characteristics may be eligible according to contract thresholds, as shown in figure (5-5).

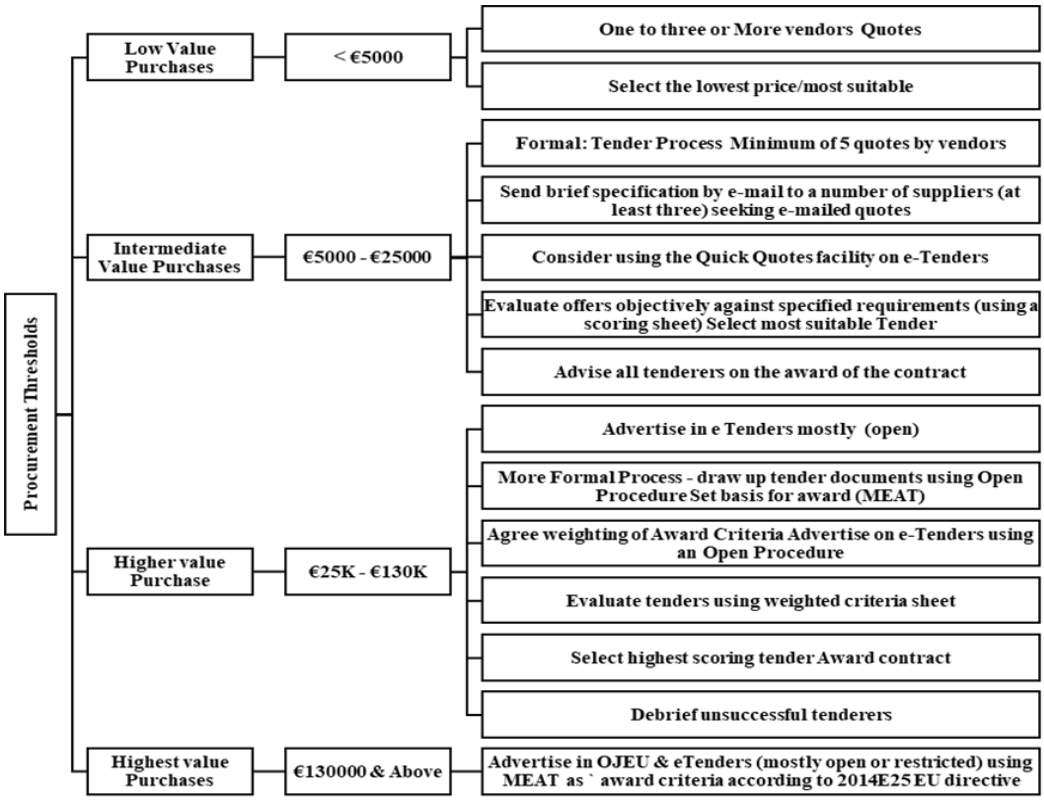

Figure 5-5:Procurement Thresholds, Adapted from OGP (2019)

According to the 2016 EU Commission regulations, there are six public procurement award procedures that contracting authorities may use when awarding contracts see figure (5-6). Whatever procedure is used, the regulations state that specifications should be as open and generic as possible in order to avoid favouring either party, ensuring transparency and equal treatment. Contracts should be publicly tendered by the Procurement Team using the most appropriate procedure (usually the OPEN procedure) if the estimated value is less than €130,000. For contracts below the relevant EU financial thresholds, the contracting authorities should follow the national guidelines. For contracts above the relevant EU financial thresholds, the 2016 Regulations apply. This research focuses on the contracts that are worth above €130,000 because in them it is obligatory to use MEAT, whereas low value tenders can use other methods.

The most commonly used procedure is the Open Procedure. The advantage of the Open Procedure is that it invites an unlimited number of offers and amount of competition unlike other procedures; there is no maximum number of participants. Its main disadvantage is that it gives the contracting authorities a great many tender documents to examine. Accordingly, this procedure may not be appropriate for complex procurements.

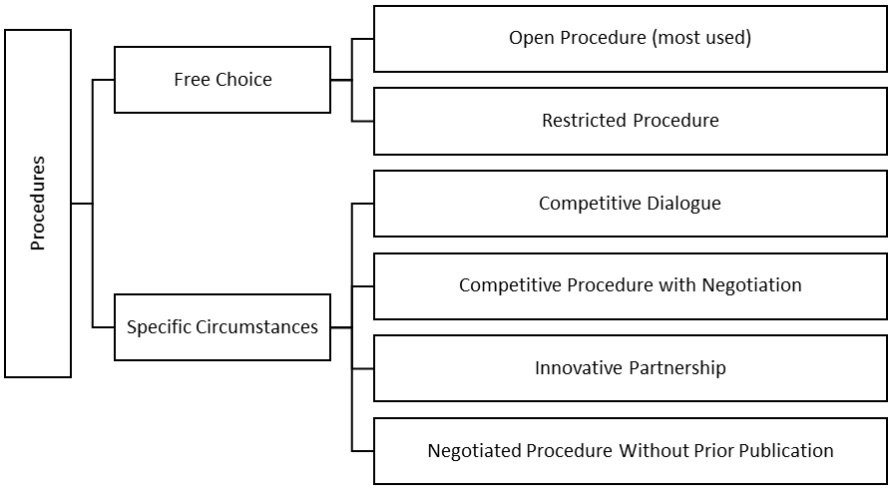

Figure 5-6:Procurement Procedures (OGP,2020)

The Open Procedure is easy and quick: a Contract Notice and Request for Tender documents (RFT) is placed in the OJEU via electronic tenders. The Contract Notice must state clearly that the contract is being offered using the Open Procedure. All interested parties may submit tenders. It is important that the Selection Criteria and Award Criteria are made clear in the Contract Notice and the RFT so that all potential tenderers can understand how the procurement process will be run and how they will be evaluated. Only tenderers who are not disqualified on

exclusion grounds and who meet the selection criteria are evaluated against the awards criteria set out in the RFT based on the MEAT criterion. This tension between cost domination and minimum specified requirements is aimed by the buyer to ensure the safety quality and other features related to the subject of the contract (i.e., the type of product).

Thus, this research focuses on open procedures using MEAT as the awarding criterion in Ireland.

5.8 Theme 4: Procurement Communications and process in practice

The procurement process goes through three main stages: pre-tender, tendering and post-tendering. This research investigation into health procurement considers only the pre-tender and tendering stages. In the pre-tendering stage, the government design its tendering publications by consolidating the needs from the hospitals (e.g. for specifications, benchmarking processes). Next, the tendering process uses advertising and communicating with suppliers until they submit their bids as private interests. After this, the evaluation committee removes the ineligible suppliers who do not meet the pre-defined criteria and then the bids are evaluated using the MEAT criterion. Figure (5.7) models the steps in practice of procuring medical devices and equipment (MDEs) in Ireland.

The step of procurement processes illustrated on figure (5.7) to demonstrate how tender design and award, in Ireland in the case of medical devices and equipment's (MDEs). However, to understand how stakeholders communicate within and between institution to deliver value through multiple steps of identifying needs and requirements, designing the tender, award weighting and evaluations.

"The overall procurement is the communication between objectives through pre-defined processes by regulations so, minders around all aspects are telling us what the procurement processes are going to look like. The first comment would be how do the procurers expect the results of procurement to be and how all the area around those objectives is to be achieved, how different players inside the organisation integrate efforts to deliver strategy. This can only be through the human intellect and interactions all the way until the original goals are met, which can be difficult to align in real life practices "CAP4 Managing director Consultant.

The key aspects to note that show the value of shaping the outcomes of the public procurement processes are the communications in the pre-tender and tendering process. For the sake of the analysis, as defined in Chapter 4, they are classified into communications with users (i.e. inside the hospitals across departments, and between the hospital and the government) and suppliers.

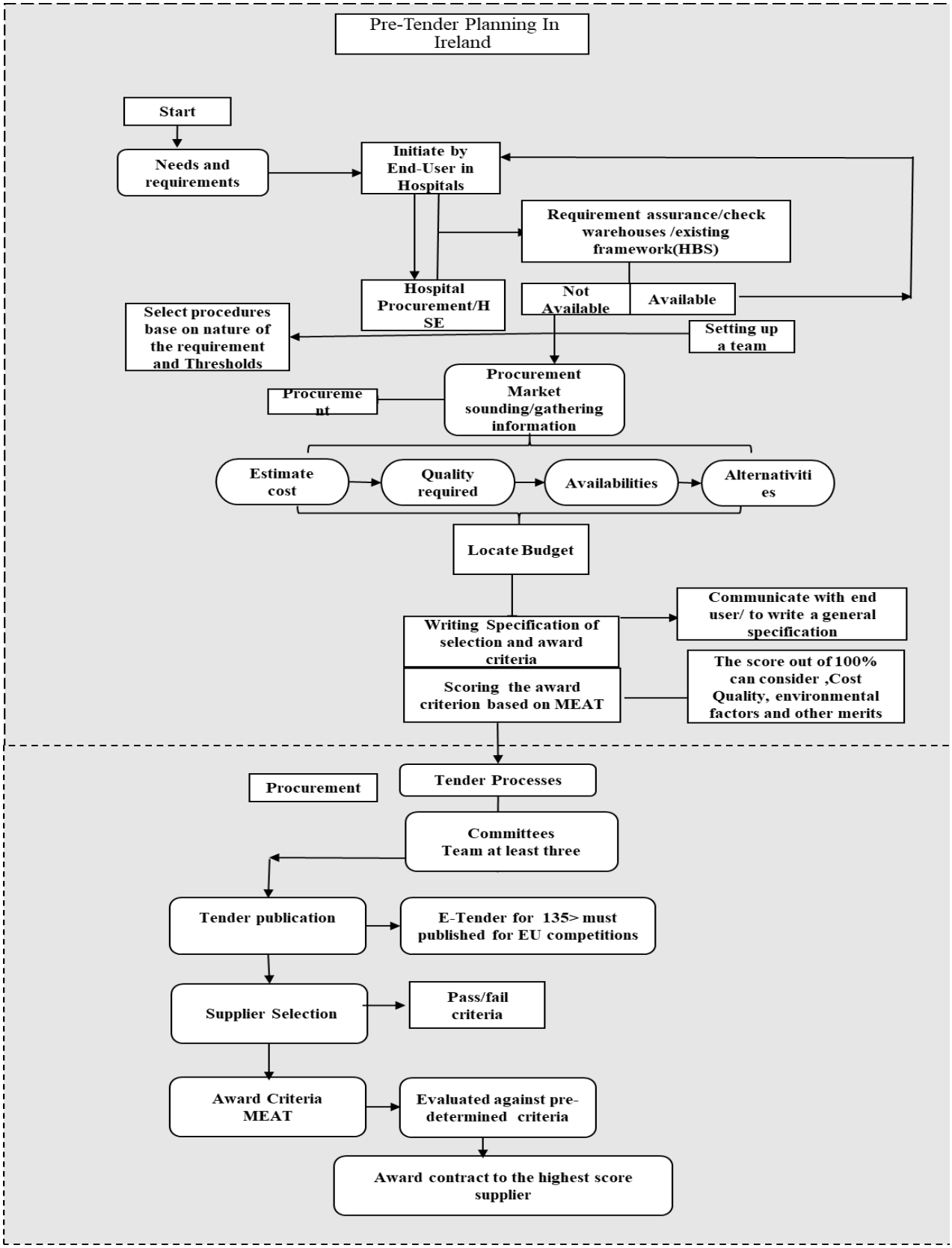

Figure 5-7:steps of procurement medical devices in Ireland (Source: Author based on secondary data and expert description)

5.8.1.1 Sub-Theme 4.1: Communications with Users

The procurement process is triggered mainly by service providers (i.e. clinicians in the medical centres). The demand for MDEs originates from healthcare practitioners in both hospital and primary care facilities. Clinicians send the purchase requisition to the purchasing department in the hospital. Through understanding the practitioners' needs the administrative staff of the purchasing department formulate their procurement plan which is regulated by the government documents and policies.

> *"Hospital departments send all their requirements, and we analyse them and develop our sourcing plan". CAP8 procurement and contract manager*

The regulation plan by the government stipulates those orders lower than a certain value will be processed by the hospital with the contracted suppliers. New items or orders with a higher value have to be either fulfilled by the government or contracted by the government and implemented through the hospital. HBS consolidates these requests and makes a tender for writing a new contract with a supplier. The administrative staff in the purchasing department face some struggles to understand the requirements in depth in order to be able to fill out the purchase order to the HBS.

> *Procurement officials dealing with the procurement of MDEs as normal are short-sighted where they should deal with it at a more value-for-patient level, long-term benefits. We can communicate but not negotiate.* CAP16 Head of Laboratory Department

The struggles in understanding the requirements are due to three main challenges in defining the practitioners' needs, which may affect the whole procurement process negatively. As will be detailed in the next subsections, these challenges may be attributed to the lack of a regulative system that ensures concise communications across roles, departments, and organisations. That is, the absence of information systems and data bases (i.e. technical and commercial definitions of the requirements) about the items and products creates challenges for staff in communicating about them. The main noted issues on the hospital side are the practitioners' inability to communicate their needs to the purchasing department in the hospital, although practitioners are more capable than the others (i.e., the purchasing actors in the hospital), and communications between those practitioners and the purchasing actors are not perfect. Details each of these communications elements are given in (5.3).

Theme	Description
Inability to comprehend practitioners' needs	Doctors are under stress from work and have minimal time to write down or articulate their needs in detail
Communications between Purchasing Department and Practitioners	Practitioners and administrative staff speak different languages
Power of practitioners	Although practitioners do not have time to be fully engaged in writing down their requirements, they have relatively high power to formulate technical specifications and accept or reject the items from the suppliers.

Table 5-3:Elements of Communication with End-User

5.8.1.1.1 Emergent Theme 4.1.1: Inability to comprehend the needs.

The first challenge is the ability of the practitioners to communicate their needs comprehensibly to the administrative staff who will formulate the plans. There are noted issues of inability among practitioners to fully describe their needs.

> *"so I would say to them tell me how you want to use them? What is the purpose? Like a nurse, I need BP monitors, so, I would say, tell me what you want them to do? So, when I asked them that question, I'm trying to understand if they just want blood pressure? Do they want an oxygen reading?" CAP12Hospital procurement manager*

It has been noted by many key procurers that miscommunication because of unclear requirements occur.

> "*The hospital practitioners provide their inputs for technical specifications like quality and innovation at the pre-tender stage, but they do not specify the cost for the equipment". "CAP8Procurement and contract manager*

This issue may be due to the lack of training for medical practitioners in defining needs helpfully and the regulations that shape this sector, or it may be because of the limited time available to them to write their needs in a clear and complete way. In the interviews, the procurement practitioners agreed that the clinicians are working under pressure and struggle to deliver patient care on time, but it is hard for them to understand exactly what they want and write a specification.

> *"that is the clinician's. Even though there are close engagement between buyers and clinicians in some cases the medical practitioners are under pressure concentrating on their core competencies which is the care of patients" CAB16 Head of laboratory department.*

Similarly, as noted by a contract manager at one of the Irish hospitals, clinicians only ask by giving the name of what they want but they do not have time to detail their requirements ,

> "*it is difficult to communicate to get end-users together because it is very hard to get the groups, it's very hard to talk to them as often as you need to get all the information*

out of them so sometimes you are calling on your own knowledge and experience to find a suitable product". CAP8 Contract and procurement manager

Supporting the previous evidence, medical practitioners confirmed that they are overloaded by other work and duties making it difficult for them to write down their needs.

> *"The consideration of medical devices, particularly surgical equipment may differ from one patient case to another. The items that we use to treat diabetics, for example, need to be very specific, most of the doctors* ***do not have time to search*** *and quantify, also we need the most safe equipment available for patients, of the best possible quality …I always ask for the instrument that helps me to do my job. I will write the name of the device, equipment, that I trust and already use.".CAB16Head of laboratory department.*

To sum up, as in table 5-4, there is a communication challenge that the key users (i.e. physicians, nurses and labs) are unable to communicate the full nature of their requirements because of the pressure of work they bear and because of lack of training in procurement regulations. These issues, indeed, can be resolved by having a system that can regulate the definitions of requirements by having databases of the items and the procedure to follow, in which the procurement regulation process is encrypted.

Theme	Description
Under pressure	Clinicians are bear the full burden of their day-to-day job and do not have sufficient time to articulate their needs
Lack of training	Practitioners have not been trained to define their specifications and how to align their requests with the procurement regulations.

Table 5-4:Inability to comprehend the needs.

5.8.1.1.2 Emergent Theme 4.1.2: Communication between the Purchasing Department and practitioners (despite the different languages)

Communications between purchasing department and medical practitioners (users) are challenging because they have different technical languages. Each of them has a different background, leading to different governing logic.

> *"Procurement would come to us then come to me where they might say 'This is not in, you know, support of procurement regulations – you make a specific requirement about a specific item, whereas you should be general. Is that a value for us as in the hospital or whoever we're going? Follow the rules and the procurement budget'. I think this should be more of which suits the patients better".* CAP16 Head of Laboratory Department

While the administrative staff are trained in regulations and the economic rationale, practitioners are more patient-oriented and tend to focus on aspects like the safety and quality of the healthcare. The first example of the discrepancy in their rationale for specifying

requirements is that practitioners prefer to name their preferences in "*brands*" and "*trademarks*" while the government procurement laws prohibit using proprietary goods at this stage. Practitioners, according to administrative staff purchasing regulations, which are aligned with the procurement laws, have to give general requirements and wait for the bidding process to bring suitable suppliers.

> *"First thing, I have to do is to sit with the clinician, e.g., about BP monitors at the moment. The way it works is, the first thing I do is somebody comes (nurse) to me and says I want BP monitors, but what do you want them for? Do not give me a name! what is the technical aspect that you need them for?"(CAP12Hospital procurement manager)*

In addition, the procurement staff have usually graduated from a business/commercially-related discipline, whereas medical practitioners have graduated from a natural sciences discipline. These differences are noted to create challenges regarding communication style. For instance, medical practitioners use scientific terms in short sentences, while procurement staff focus more on costs, quality, quantities and availability in the market and require long descriptions with a high proportion of detail. These differences make the communication challenging. For instance, practitioner specifications come in this form:

> " *What I want is* a *correct diagnosis device with effective treatment to prevent the re-admission of the patients, and moreover [something that] quickly frees up a bed for a new patient*". CAP16 Head of Laboratory Department

While the procurement staff are interested in knowing more about the specifications of the product: how to measure its "correctness", "effectiveness" "speed". The communications requirements for each of them are different and can be a source of impaired communication. Practitioners are fighting for quality, what suits patients' needs and what is easiest for them to use, while the procurers investigate to ensure that the specification does not exceed the medical and contravenes no regulations.

> *"So that's the first thing when you look at the department's needs: what's your need and requirement as end-user and patient? And what are my needs and requirements as an end-user? I hardly get what I want (in terms of requirements). But I would listen to their preference in what works better for patients and deliver what was written to Procurement".* CAP16 Head of Laboratory Department

To sum up, as summarised in table 5-5, the differences in the technical languages between procurement and medical practitioners impair the effective communication between them. These differences may distort the bill of requirements and in turn the procurement process if it is used in public procurement.

" *[the] … award criteria that they use have to be linked to the contract objectives and many* ***of the internal customers do not understand****"(CAP8 Hospital procurement and contract manager).*

Theme	Description
Different backgrounds and education	Business, commercial and legal related knowledge versus natural science knowledge
Different rationale	Practitioners using short sentences with scientific terms while purchasing administrative staff needs long detailed descriptions of generic products

Table 5-5:different languages

5.8.1.1.3 Emergent Theme 4.1.3: Power of Beneficiaries

This gap between procurement staff and medical practitioners' rationale bases the dominating logic on the power of the leading agent. The main challenge occurs when the medical practitioner has the stronger power in the process because the doctors' logic is not legally and commercially based. This issue can create challenges later in the tendering documents.

"*I think a very well-respected clinician who's very well thought of, can have the* ***final say*** *but it depends on how strong the clinician is".* CAP10 Director of Global Contracts and Pricing

"We have an issue of clinical preference because we would never get to the point where we may say to all of the clinicians or all of the cardiologists that …we must use stent A. They wouldn't accept us – they need choice. They need the opportunity, and they need access to the products they are comfortable with"CAB6 National Director

Similarly, if the power is with the procurement staff, the commercial and regulatory logic will prevail at the expense of the medical practitioners' rationale, which may indeed affect the doctors' and patients' performance. The fear of being held accountable and responsible also threatens to enforce the rationale of the procurement specialists to buy cheap products which may cure the symptom but also harm the patients, who hold individuals accountable (for example, the cervical check scandal in which several women were wrongly diagnosed with cancer and the public procurement authorities were to blame for these diagnoses). Basically, there is no formal form of ownership of the processes to determine each actor's role in them.

The clinicians might envisage thinking that the cheapest one is the worst and the dearest one the most expensive one is the best one. so, that's you know. So, I don't want them to form an opinion because of the costs . It would devalue its so every tendering process I do involves a different evaluation team. involves the users from the departments. Myself. Somebody from finance to look over my figures and so the commercial element is taken away from them. CAP8 Procurement and Contract Manager

To sum up, as summarised in Table 5-6, the differences between the internal agents' rationale creates a challenge to formulate requirements which are fit for purpose and aligned with the procurement regulations. In practice, there is no clear balance between the powers of the

rationale that would meet this challenge. However, the issue to note is that either the medical practitioner has too much power and dominates the process, which can confuse the commercial officers, or the administrative staff has too much power, which can produce supplies that are not fit for purpose.

Theme	Description
practitioner power	Confusions in the legal and commercial terms because the language is too technical for one side or the other
purchasing administrative staff power	Does not fit the doctors' and patients' health and safety needs

Table 5-6:Power of Beneficiaries

5.8.1.1.4 Emergent Theme 4.1.4: Outcomes: Complexity in the procurement process

The challenges so far mentioned lead to unintended consequences of confusion in the tendering documents and awarding criteria.

> *"Inability to write an appropriate tender (lack of quantity required, time of delivery, and other technical aspects)"CAP3s Tender specialist*

> *"there is a lack of designing tender for example the quantities published in the tender are usually more than you can win in the final offer" (CAP7 Regulatory Affairs and Tender Manager EU-MENA).*

Many suppliers found a challenge at the pre-tender stage in the uncertainties that contractors created, which show up in the evaluation, as summarised in Figure 5-8, Certain requirements may not have been remembered and they either have to go back and retender with a new specification or have to adjust and modify the weightings of the criteria in a way which tries to squeeze in these new factors. Indeed, as a key informant stated,

> *"they never get the volume promised "CAP7 Regulatory Affairs and Tender Manager.*

> " *The first part is that there is always a price volume as well as relationship and thus, the challenge with a tender can be a commitment to volumes, so, 'what can a hospital commit to their estimated volume?'."* CAP1 Commercial Manager Company Director

This complexity creates difficulties in estimating the cost, time, and requirements.

> *"The cost estimations are not accurate at the pre-tender stage. Uncertainties and market complexities are ignored". CAP13 Sales executive*

Besides, it creates slack in the process, delays and also puts the suppliers in a difficult situation where the only possible mitigation strategy is to increase the prices.

> " *[A] supplier put value on 99% of stock coming when you order, you know; they do not put a value on the whole supply chain of the piece, taking it into account again in an*

> *award. The issues such as cost and time have resulted in slack in the processes.* CAP15 Tender Manager

As a direct result of the unknown volume suppliers tend to protect themselves by adding a percentage above the marginal price to account for uncertain quantities if the tender is made with the open tender approach, but if the contract were under the framework agreement, they would in some cases increase the cost by 5% each year for three years. In the case of a framework agreement the price might be re-assessed after 12-24 months.

> *"Companies do their best to reduce their price (Example)The risk is huge and sometimes they have a clause in the contract that we can review the prices or 'valid until…' but sometimes they don't. If the contract is under framework, we have to allow5-10% of price for the uncertainties of the market change*"(CAP10 Director of Global Contracts and Pricing (Manufacturers)

The time taken in designing a tender is determined by the urgency of the purchase, a key stakeholder said.

> *"I do not know how long it takes … well depends between weeks for an urgent need and you talking up to seven months if it's a normal tender. A nuisance"CAP8Procurement and Contract manager*

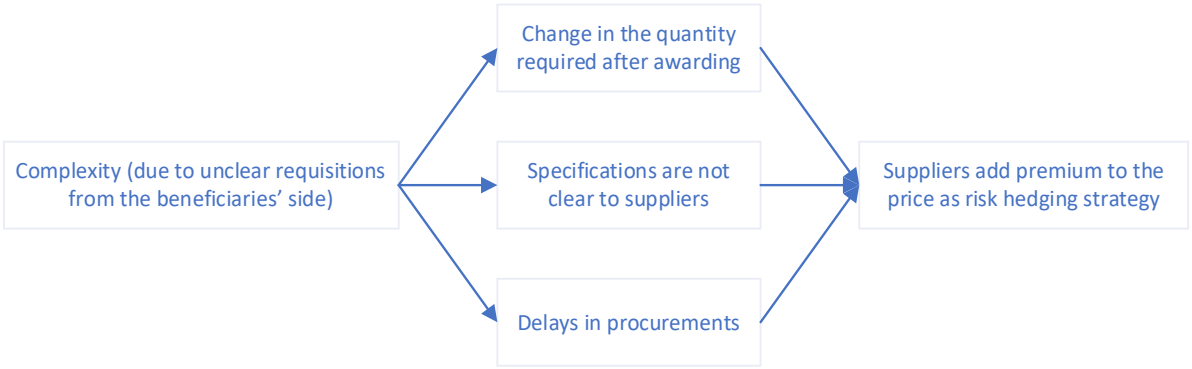

Figure 5-8:Complexity of demand source

5.8.1.2 Sub-theme 4.2: Communication with suppliers

There are two kinds of communications process with suppliers: before the tender, to design the tendering document and in the tendering, to communicate any inquiries.

5.8.1.2.1 Emergent Theme 4.1.2: Communications Pre-tendering

The communication mechanisms in the pre-tendering are summarised in table 5-8. In the pre-tendering phase, usually, there is no communication with suppliers. However, if the process of collecting information on previous projects to set appropriate or well-defined specifications does not work, communication with key suppliers is required. As noted by HBS officials, the common method used for developing tender documents for a medical device is *'reviewing previous similar product tenders'* so as to analyse financial sheets, quality, desk research, cost performance and evaluation of alternative products and suppliers. But if this method is invalid, key suppliers are invited to review and design other documents to ensure that the procurement process matches the latest technologies and advances in the market.

The hearing process is regulated by the European Union regulations, intended to improve the procurement process for complicated and significant bidding. In the hearing, a representative of the supplier can be effectively involved in the pre-tendering process which hypothetically should improve the transparency and collaboration process between the contractors (i.e. the government), the beneficiary (i.e. the hospital), and the supplier. It can also clarify the market's ability to provide different solutions. The rationale for having pre-tender communication is justified by the national procurement director as follows:

> *"that there are no engagement external stakeholders to ensure* ***tender transparency and equal treatment****, suppliers may involve in market search in a rare case when the product is niche under a competitive dialogues producer, which in …unique cases market* ***sound will be limited to large firms****. Because they have better experience of the market,* ***better data can be provided****".CAP6 National procurement director*

Although this mechanism can help the HBS with information to enhance the tendering process, improving transparency and collaboration, some suppliers perceive that this approach of specifying the requirements in the tendering process is unfair and affects the transparency promised by the political and legal forces. In theory, the supplier involved in the designing the tendering documents will not be able to bid in the tendering process and this will protect the transparency and fairness of the treatment. i.e. an organisation which is a member of this committee will have limited ability to bid, because of the conflict of interests.

> *" … the initial reaction is that somebody else is or has been involved in that reshaping or pre-tender [activity] and more than likely would not be the prime supplier expected to win the tender or be in a poor position to win, We would feel straight away that it will be more about an on the back foot situation where they were not likely to win out of the competition another interesting piece for me"* CAP1 *Commercial Manager Company Director)*

The main threat to the transparency is that those suppliers who have "friends" (the respondents in the research refused to name them) may have an indirect effect on the procurement process and can also affect the design of the tendering of documents to fit a certain supplier. There is more evidence in support of this claim: that if one firm is not able to influence the tender in the pre-tender phase, somebody else will be able to do so to suit their needs. The issue arises from communicating with both clinicians and administrative staff and suppliers.

> *"If you're not involved shaping that tender it can be very hard to win, as others will do"CAP13 Sale executive*
>
> *"the challenge is that surgeons still need certain things and so it ends up being in a discussion about the clinical level again, perhaps so even if you win the contract you have to then go and win the surgeon and if you're doing a load of surgeons, you probably have to win multiple surgeons". (CAP1 Commercial Manager Company Director).*

The same issue is noted by the SMEs and may even be perceived as a discriminatory practice against them that allows large firms only to be chosen. The lack of capacity of SMEs may make it difficult for them to get tenders.

> *"We can hardly influence the tendering process. We have to hold up our hands as well if tenders do not go away. I've seen it also, you know, your chances of succeeding in that are probably lower, so for a smaller company I can imagine that would be a bigger challenge".CAP3 Tender specialist*

Mechanism	When used	Pros	Cons
Previous procurement projects	Routine products, updating old contracts	Easy, efficient	It does not allow the HBS to discover new trends in the industry market . Thus, there are annual conferences with suppliers (run by Procurix) to facilitate the entry of suppliers and feed procurers with knowledge about the market.
Hearings with suppliers	In complex procurement projects where the bidding documents are new	• The bidding documents are understandable by the suppliers • Latest technology available in the market is included	• SMEs find they cannot meet the requirements for taking part in these hearings • Big organisations avoid these hearing events so as not to be excluded from the bidding process • Transparency is threatened

Table 5-7:Pros and cons of communications with suppliers

5.8.1.2.2 Emergent Theme 4.1.2: Communications during the procurement processes

The aim of this process is to inform the potential supplier of the purchasing requirements. There are three communication mechanisms: push, pull and interactive. Tendering advertisements use three main mechanisms: advertising documents (e.g. tender notices), open access to tender documents and post-advertisement communications.

The first push communication mechanism is through the tendering notice. The tendering notice is a brief message to potential suppliers or to the public who may be concerned in the bidding requirements. The tendering notice is a high-level requirement, for example "*The tender will be evaluated based on quality and price criteria"* (Tender Notice).

> "*Information provided in an e-tender notice only allows you to select to screen if you are going for that tender or not. If you want to review further, you need the full tender documents before you can or before you get the right documents of the award criteria and then decide if you will go for that tender or not"*. CAP3Tender specialist

In the details, the supplier can see that he needs to, without charge.

> *"Evaluation Committee must indicate the award score in the notice or the RFT in detail (e.g. cost 40%; quality and level of resources offered 30%; methodology of approach 30%)"* (Courts Service of Ireland, 2016, p. 11).

The second communication mechanism uses the "pull" approach where stakeholders can access open data which are available for free to anyone (OGP 2018 a). The open access to tender documents is believed by suppliers to be useful and to improve transparency. It enables them to decide early whether to engage in the tendering process. The details are available on the system. However, the details provided are not extensive. The response from the interviews highlights the fact that the tender notification does not contain sufficient information on the scoring criteria for factors such as quality and price and thus, the supplier's decision whether to bid or not is based on their own capacity and financial capabilities.

> "*It is not adequate, the information in the contract notice It does not break down into details , but you have to remember the published tender price is a much bigger factor than they actually will have documented … so it depends on our ability to compete"(CAP9 National sales manager).*

The problem is escalated in the complex projects where more information is believed to be needed for developing the right proposal.

> *"the complexities and nuances in the market are not accounted for in the scoring criteria and the criteria are based on quality and cost analysis."* CAP2 contract and project manager

The third communication mechanism is an interactive approach where buyers can send inquiries and receive responses by email or enquiry from the HBS. According to the respondents, the e-procurement is transparent because all of the suppliers receive the same reply and have the same access to information. But this approach may push the government to communicate less than freely to minimize the risk of a breach of transparency.

*"They are **transparent in** terms of the information exchange, but we cannot get the required information when needed". CAP 15Tender manager*

"*within strict regulation, the information exchange and tendering approach. But overall, I believe the approach to selection is generally transparent"* (CAP2 contract and project manager).

Besides, there is some fruitful interactive communication as indicated by the interviewees. Communication runs between the candidate supplier, the HSE and hospitals in the tender process window. This point was made by CAP12Buyer: that, among the original procurement documents, one concerned minimum requirements for the product. If a new, innovative product enters the market and the supplier sends an enquiry about it, this reveals to the buyer that there is a better product on the market, and he updates all the suppliers through e-tender that the term that constrained the competition has been removed. This also may be evidence that flexibility and continuous communications can enhance innovation not only in the pre-tender stage but also in the tendering itself.

*"I was choosing a piece of equipment which actually had to run on electricity and had to have the CE marking that it had passed as an electrical instrument with full requirements. There was pure silence and then just a couple of days before the decision was due, a supplier rang me and goes, 'I can say the **electricity standards pass/fail** is a critical pass fail' he said, 'but, actually itself generates its own power when the person uses it so it's not powered electrically'. 'Oh, OK OK, **I didn't realize that, I didn't!! end users today don't always realize the importance of explaining everything** to me. so that **I have the opportunity to write out to everyone through an e-notice** and say 'No', you know, 'that's wrong. It doesn't have to be powered by electricity – that constraint – any more and you get the chance and someone else out there who might have exactly the same item didn't ask the question". (CAP12Hospital procurement buyer).*

Thus, flexibility in the tendering process supported by interactive and transparent communications may improve the innovation and value for money, as narrated by the National Procurement Director

"you will probably put yourself [in the way] of getting an amazing piece of equipment that you've never even seen in your research because they're inventing new things all the time, I hope you learn from this example that when you are flexible in your technical details …" CAPB National procurement director

Communication mechanism	**Pros**	**Cons**
Tender notice (Push Communication)	Notify all potential suppliers with the requirements	It can be general and not detail
Open access tender documents (Pull communication)	Offers detailed information, Helps to decide whether to go for bidding or not	Some of the information not clear and needs clarification
e-mail or e-tender communications text messaging (Interactive Communication)	It can deliver information based on suppliers' enquiries. Answer can be shared with all potential suppliers Improves the possibility of getting the latest innovations in the market.	

Table 5-8: Processes communication (source Author)

5.8.1.2.3 Emergent Theme 4.1.3: Communications with SMEs

From the secondary data, the political agenda puts SMEs at the heart of the public procurement process (e.g., at the EU level *"to promote the internationalisation of SMEs"* and national level *"To improve the business environment especially for innovative SMEs, including through public sector procurement to support innovation incentives"* 2020 strategy (European Commission, 2010, p. 17). Therefore, in practice, incorporated SMEs at the EU unachievable because the practitioners are in fact struggling to promote the access of national SMEs. However, the policies seem to be not very effective, from the SMEs' standpoint, due to the communication challenges. The policies to embed the SMEs in the process, which include new guidelines on procurement in the public sector, have been set up by the government to simplify the process by which small businesses could bid for contracts across the public sector. In 2013, the office of government procurement established a high-level group expert to allow better entry conditions for SMEs to compete for government procurement (OGP, 2017). In 2016, the OGP established "Procurix" to give buyers and suppliers a chance to meet. Here, suppliers could demonstrate their products and meet the buyers and could then ask general question about procurement regulations, bidding design and awarding. It was also believed by the authorities that this could promote SMEs' participation in this dialogue. However, the participants argued that it was not effective in easing communication, maybe because of the topics covered or because the large corporates were not attending.

> *"The buyer-suppliers meeting is resitting lectures on the procurement guideline, I can only see small companies participating – large companies are avoiding [it]" CAP13 Sales executive*

> *"The procuring entity for HSE probably has to give an opportunity for companies to come in and demonstrate their products; you know, they do that. but, Is it kind of going through the motions? and sometimes I wonder if you didn't attend this at all would it actually matter?" CAP15S Bid & Tender manager.*

It seems these events are more educational than really engaging SMEs in designing tendering documents as the corporate representatives do.

> *"We might exclude them if we feel we won't be fair to other suppliers. We will invite anyone that is interested in the procurement to attend a seminar, a "buyer-supplier" workshop. They hear collectively what it the procurement regulation is, how to write proposals and are allowed to ask general questions, about process and procedures, so, it isn't one to one. It's the market in its entirety". CAP12 Hospital procurement manager*

Participants argue that the SMEs are granted conditional access to the public market, showing compliance to the EU procurement law and principles. The government has strengthened its support in order to encourage medium and small enterprises to bid for contracts in the public sector, and with major recognition of the good activities being carried out in the public sector, the government's new guidelines will make public tenders more accessible for them. Despite all these efforts to simplify and increase access to data, it seems that SMEs are feeling excluded by the structural rules imposed by the European Union

> *"there are many suppliers' workshops for SMEs to receive the data on tendering. But I think it is not valuable as there are more discriminatory policies against SMEs which makes all of these efforts not very valuable" CAP11 Sale manager SME.*

5.9 Model 2: The influence of Communication on the public procurement outcomes

The second model illustrated in (Figure 5-9) was developed to clarify the role of communication in the public procurement process. But before examining this relationship, looking holistically at the context may help in understanding this relationship. The European Union published articles to promote and protect SMEs and improve transparency.

Similarly, the Irish government has worked to promote the transparency and innovation rationale in the public procurement process. These rationale are translated into communication practices. They involve communication with SMEs but for educational purposes and do not engaging them in the designing of tenders. However, the government sometimes invites major suppliers to design the tendering document, especially in highly complex projects. Although the government banned these organisations from taking part in the bidding process, it has been noted that they have an informal relationship with other suppliers in the industry – which may have some impact on the transparency process. Similarly, SMEs perceived that this action makes them victims of some institutional discrimination. However, the action is perceived to improve the innovativeness of the market and keep the government updated; but even so, it undermines the value of transparency in the public procurement process.

Yet the transparency logic is enforced in the tendering communication process since the government sends the same message to all suppliers and if it receives any message, it copies the reply to all suppliers. Moreover, the e-procurement system helps to promote the innovation logic, acquainting the government by continuous communication with new ideas, some of which it accepts and implements. These combined pressures on transparency and innovation

have public procurement outcomes. First, the SMEs are not promoted as they should be. But, second, quality and innovation are improved because the tendering communication process collects in the requirements together. The cost to the public is also improved if the transparency and better understanding of the requirements enable suppliers to charge less.

Communication as noted in this research is not only across institutions; but also inside them. In this research, a conflicting logic has been found between clinicians and administrative staff in defining and articulating requirements. The result of this conflict depends on the power of the agents. This process may influence the ability to define the requirements in a transparent (because some doctors demand certain brands) and rational way (because administrative staff may define a procurement request on the basis of cost without looking at the use) following the rules and guidelines of standardised processes.

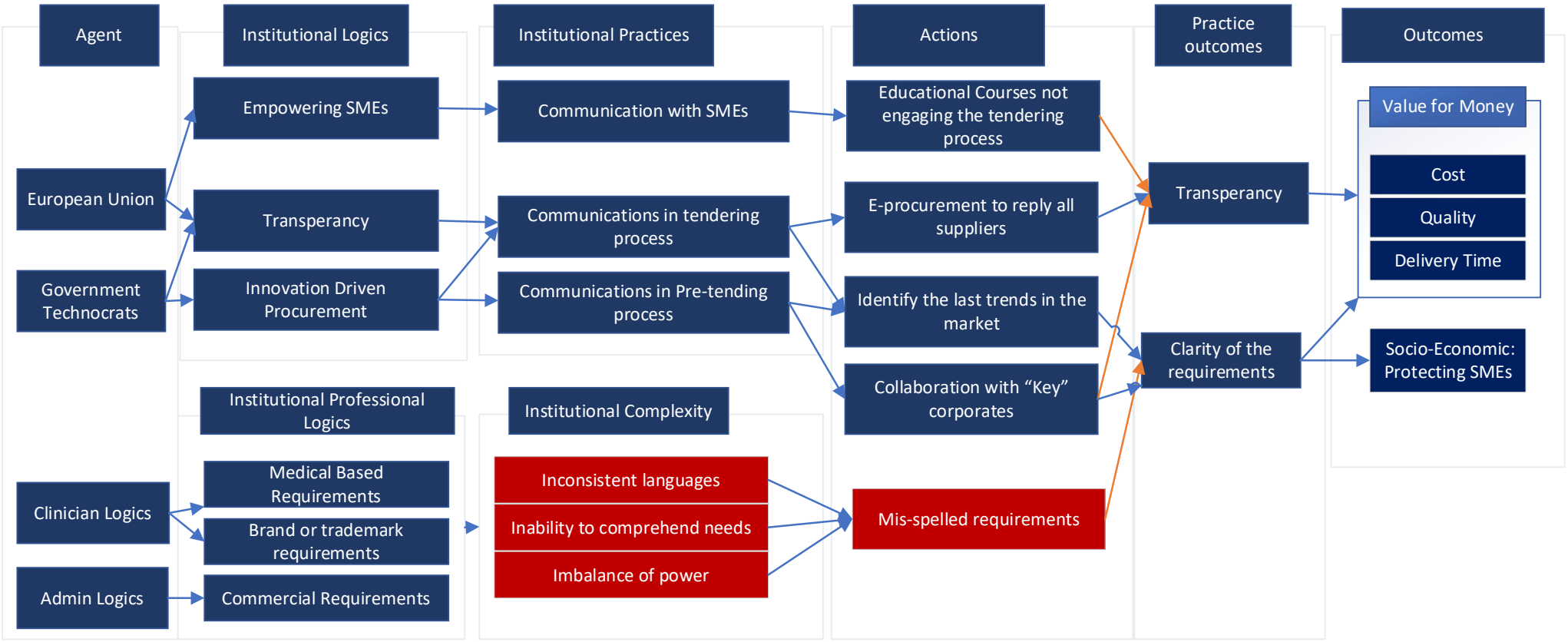

Figure 5-9:Public procurement communication model in Ireland

5.10 Theme 5: Supplier Selection

The fifth theme under investigation in this study is the supplier selection process and supplier-based awarding criteria which may support or hinder certain types of supplier in operating in the public procurement market. The emergent theme here is mainly the preferential selection to exclude SMEs.

5.10.1 Emergent Theme 5.3: Selection practices against SMEs

The European Union Commission (2008) stipulates certain measures for including SMEs. The measures are "Allow applicants to self-declare their financial capacity and seek evidence of same in the event of applicant being short-listed", "Allow applicants to self-declare their insurance cover and seek evidence of same in the event of applicant being short-listed", " Use standard documentation and tender templates easing eligibility criteria", and "Be flexible over the type of proof of financial capacity that applicants can provide". However, the interviewees believe that what takes place is different and opposite to these measures. SMEs feel challenged because of the documents required for bidding which, they say, tend to have hidden filters that do not retain SMEs.

> *"There are some documents required for procurements which are not accessible to us as SMEs " CAP3STender specialist*

> *"I suppose with going back to the HSE question it could be seen that change in that the structure of frameworks and open tenders would affect some of the smaller players I suppose, in the last there has been some tender somebody in the HSE and competitions and awards and since 2016 on some small companies struggles to be a part of the contract supply as well so, there is to business I suppose at the end of the day you need to offer options for medical devices"CAP9 National Sale Manager*

Besides these hidden filters against SMEs, SMEs may find the mandatory requirements costly and time-consuming if the value of the contract is below the EU threshold. This condition may vary from one contracting authority to another. This adds some complexity and difficulty for small contractors to surmount. Moreover, small suppliers t may find that they cannot afford the insurance, or claim the financial standing or a turnaround of €2 million, which may prevent them from accessing the competition of the procurement market.

> "*there is always a cost for tendering and, if that increases the cost in an audit of the small contracts, we are not going for it. If we have a tender assessment process where we have the opportunity, if the cost of providing a bid is going to be too high compared to the value of the contract generally, we don't go for it. A contract that would ask for detailed methodology, a very detailed team and very detailed pricing of a very detailed program for*

small value, we would not go for it. As always, it's in terms of the steps. It's probably difficult for small companies to do the steps, but for a large company, pretty easy. We do tenders day in and day out, so we are used to the process". CAP11S SMEs.

A similar observation was made by the director of a large multinational corporate: that the current system helps corporates and put the SMEs at a disadvantage due to the amount of paper-work and documents required.

"The competition for me favours, I think, mega companies, and is harder for smaller companies to compete in some of the requests, for sure, in my opinion. The main challenges for them are the documents supporting the amount of liability a company needs to have; also the time and resources that go into completing tender documents can be huge … even for (company name)"CAP1 Commercial Manager Company Director

Furthermore, the increased use of framework agreements undermines most of the EU efforts to promote SMEs, and counteracts the cost, awarding capital contracts to small companies, while the large companies in turn sub-divide the contract, with less legal pressure. The corporate companies win large contracts base on their economy of scale, but small companies have proposed a solution whereby policy makers could divide a contract into lots to help small companies to compete. However, this may clash with EU Directive 2014 because this states that an institution cannot divide a contract that is above the EU threshold (EU Commission 2018 b).

"The large companies are winning the contracts – recently we have seen most of the multi-million contracts advertised at a national level so, they should be distributed at regional level or lots to help small companies to compete"CAP11Sale manager SMEs

Since there are different expectations from this political agenda at the EU and national levels, the authorities at national level cannot divide any sum above the EU threshold even though there is a call to divide the procurement project into lots. Second, the quality, quantities and financial ability required, particularly with medical devices, seem to be beyond the reach of small suppliers, which require approval for their market entry. The clinicians also prefer to use a well-known high-end brand that they trust for their patients. The challenge seems to lie in the quantities, volume vs price, and in real-time market information.

5.11 Theme 6: Awarding Criteria MEAT

There are two main approaches to awarding public procurement contracts within the European Union: lowest price (LP), or most economically advantageous (MEAT) (Lundberg and

Bergman, 2013). The lowest price is typically used for contracts at thresholds below the EU level. Evaluation which is based on MEAT takes account of the price, the requirements, and quality aspects linked to the subject matter. Within the EU legal framework, the use of MEAT becomes necessary for bids of over €25,000. In 2014 the EU procurement commissions advised member states to use MEAT in any contract over the national threshold (EU Commission 2014). This was transferred to Irish national law and commenced operating in 2016 (Brennan, 2016a). MEAT is perceived to be preferred by policy makers and operations working for the government due to the complexity of medical devices in terms of technical capabilities and ability to fulfil needs.

> *"Given the nature of what we buy I suppose the complexity around medical and surgical devices and consumables equipment and laboratory diagnostics is more than just the cost of the product or the service that is important to us. So, we in the main operate by way of MEAT"* CAP6 National Director
>
> "*90% of the cases is MEAT because MEAT allows achieving value for money. However, the lowest price approach means you're going to lose out on the technical abilities that you know of a product or service that you require".* CAP8 Procurement and contract manager

5.11.1.1 Sub-theme 6.1: Evaluation Rationale

The enforced rationale due to the use of MEAT are the rationale of cost (numerical) and quality (subjective).

5.11.1.1.1 Costs – Numeric Logic

Costs are numbers that are easily measured and evaluated. All tenderers' cost scores are calculated pro-rata in relation to this score (the tender document). The concept of cost includes not only the cost of products, but also the lifecycle costing (including the guarantee and services).

> *The cost perspective depicts the purchasing performance based on the efforts of suppliers and purchasing people together, such as total cost of ownership, administrative cost and transaction costs".* CAP8B Procurement and contract manager

Although there are challenges in identifying quantities required. The cost is closely correlated with volume, which can be easily measure than quality,

> *" Price follow-velum logic, it's very unusual to see any quality are measured or valued measured in our experience. We will have to track quantities , depends on what product that we are supplying, sometimes they quantities is not accurate, particularly consumable, to offer lowest price".CAP13Supplier*

The MEAT approach is characterised as a minimum score approach for filtering proposals. Among the proposals that remain, the highest value (cost/quality) is awarded. In the award

criteria is a minimum score for each attribute to ensure that the winner can deliver the right quality product at the right price. Table 5-9) visualized the equation used to score cost which is a clear formula and a clear approach, which may make the cost logic dominant for its ease of use and practicality in assessment and comparison.

Say, 50 marks available for cost	$\frac{Lowest\ cost\ offer}{cost\ offer} \times located\ mark = Higest\ mark\ awarded$
Company A Bid: €1,500,000 Company B Bid: €2,000,000 Company C Bid: €2,500,000	**Lowest Valid cost is: €1,500,000** Company A: 150 / 150 x 50 = 50 marks awarded Company B: 150 / 200 x 50 = 37.5 marks awarded Company C: 150 / 250 x 50 = 30 marks awarded

Table 5-9: Cost Calculation formula (tender documents self-modified)

5.11.1.1.2 Quality – Subjective Logic

Quality and other criteria are subjective and difficult to assess and to benchmark. The procurer can link the MEAT criterion to the subject matter characteristics, and nature of the contract (EU Directive 2014). There is a perception that in evaluating contracts quality is a main component of MEAT.

> *"The common perception is that price has a high priority in award criteria, but the fact is that price is not the only critical factor. Factors such as reliability, technical aspects and efficiency are important and should be approved".* CAP4 C Managing Director

The criteria are mathematically scored according to the following factors, including Quality, Cost-effectiveness, Technical Superiority, Operational characteristics, Accessible design, Social issues, Environmental aspects, Innovation factor, Quality of service, and Quality of delivery. Most of these indicators are subjective and not measurable.

> *"It is really difficult to measure the value of quality delivery, so we always deliver to the end-user what was in the contract and no further performance measurement by both parties (CAP12B Hospital Procurement manager).*

Because it is difficult to measure, the preferred method is to use individual opinions from different stakeholders.

> *"the award criterion is rather based on individual opinion which differs from one contracting authority to another". CAP1 Commercial Manager Company Director*

This nature of quality and performance data may present the logic of these criteria as fragile to be discarded and not given the same weight as cost, the hard logic. It may lead the quality aspects to be treated as pass-fail criteria.

> *"When it comes to people's health there's a certain level of quality and there is a minimum level of quality that the hospital will expect and it's only after they hit that minimum … we would not consider anything below".* CAP8 Procurement and contract manager

5.11.1.2 Sub-theme 6.2: Outcomes

MEAT, then, seems to be better than the least cost method because it takes into consideration the quality and other technical and delivery terms in addition. From the interviews, also, it seems that the best combination of cost and quality will be selected. But this does not always ensue. Buyers are oriented more towards the lowest bid and not the highest quality and there is often no space for social and environmental criteria and other factors.

5.11.1.2.1 Emergent Theme 6.2.1: Cost dominance logic

Cost logic is hard because it is based on verifiable, easy to measure, and objective data while the logic of quality is fragile because it is allows only unverifiable, difficult to measure and compare and subjective evaluation. According to the neo-institutional theory, the stronger logic will dominate the decision-making process. Thus, the cost logic is expected to dominate the selection process.

> *"procurement needs to be from the lowest price bidder otherwise; you are not going to be the primary supplier"CAP13S Sales executive.*

> *"they shouldn't be all about price but usually, they push for a better price and they say quality but really it is all about price". CAP11S Sale manager SMEs*

> *" even scoring high in other criteria, it all about the price" CAP13 Sales executive.*

> *"tenderer wants just to look at the price with everything included so they don't put a value on next day delivery and long-term saving" CAP15 Tender Manager*

Since the quality aspects are more qualitative and subjective, the decision makers may sometimes opt for an average score for quality because no clear definition is given of the quality criteria, which are left vague. A second disadvantage is that the quality aspect may rated lower than the cost. In almost all the cases studied the cost is given most weight, thus directing the selection towards the lowest offer or the second lowest. Suppliers and data show that the most often accepted bids are the lowest or the second or third lowest in price. There is a clear orientation towards the lowest bid or the second lowest bid as consistent winners.

> *"The price is a very high score criterion and so, therefore, in terms of the added value that you bring the industry knowledge and expertise all of that, you know, even if you score very high in those criteria, in reality, it's all about the price at the end of the day …. For instance, if price makes up to 70% of the scoring criteria, then you are not going to win unless you bid the lowest price"CAP15 Tender Manager.*

> *"the highest score is at a lower price but then they will check everything else in terms of quality and quality of supply*" and under the framework, "if *I am not really cheaper, I'm not going to get business, so I'll bring my price down, you know me, because I want to be in that number one number two and number three. So, I set out to make sure I'm going to get the business sorted. it really comes down to looking at the price side so price is a huge factor"*(CAP9S National sales manager)

In most of the contracts the final decision is made on price, but the quality and requirements are mostly matters of pass or fail. Following the logic of product quality standards, technical safety and quality are ensured and certified at the time of market entry, which suggests that any product assessed at CE and American FDA is considered to have met the quality requirement.

> *"The award criterion is dominated by price and it wouldn't matter if you are significantly better than the rest. It's done and also the way the price is calculated so there might be … it's usually not by percentage but using points. Maybe if you are 20% more expensive than the lowest price you are awarded 80% of the points" CAP2S Contract and project manager.*

> "*The most standard one that we've come across, and most contract authorities. push for this, would be 40-60 split into 40 percent quality, 60 percent price, and the reason for that, I believe is that as the contracting authority they know what to be seen on, they want the price, obviously still a key in public procurement …there are more prices than you see in the documents, and they hide the cost" CAP13 Sales executive*

The final logic is very close to that of least price, where the selection ends by choosing the lowest price as long as the quality criteria are accepted.

> "*despite the fact, the price scores high in the award criteria but they evaluate things such as quality, supply chain and logistics and they should be accepted*" CAP11S Sales manager SMEs.

From the data it seems there is a tendency towards weighting cost more than any other attribute. The analysis of data on bid evaluation practices shows that the score for the cost is 40%, product quality standard is 35% and customer service is 25%. **Error! Reference source not found.**) summarises the scores and criteria for bid evaluation. Analysis from the historical records represented in (Figure 5-10) , it seems that the price is more than 50% in all the tenders reviews, except for three tenders only out of 14 tenders were quality weighted greater than 50% .

Description	Percentage	Minimum criteria
Product Quality Standard	35%	PASS or Fail
Cost	40%	-
Aftercare and customer support	25%	15

Table 5-10:MEAT scoring criteria (Tender Documents)

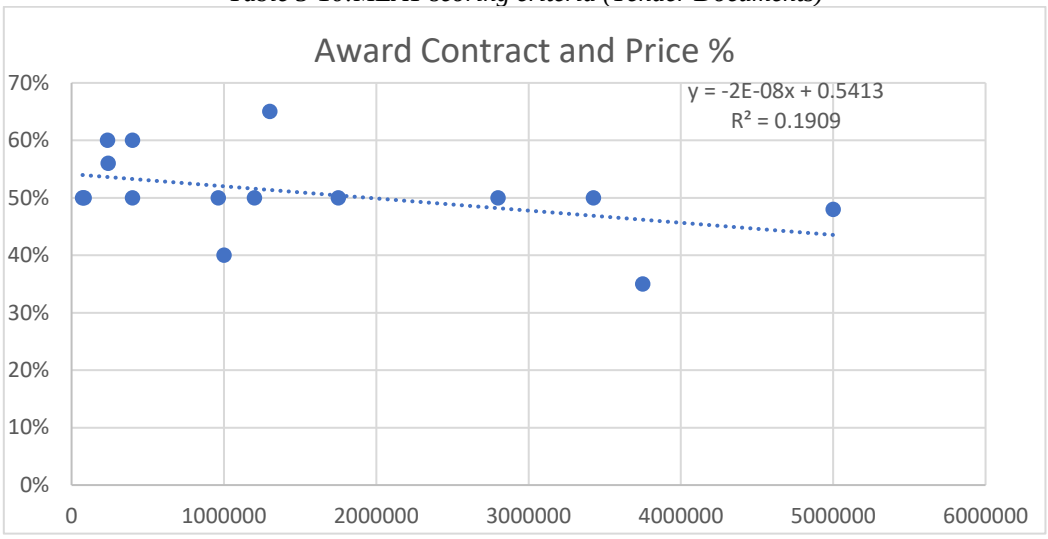

Figure 5-10:Award contract price proportions (Tender documents self-visualisation)

5.11.1.2.2 Emergent Theme 6.2.2: Diminishing logic of the Societal and Environmental factors

The second shortcoming is the omission of social and environmental factors in the weighting. If rare cases are admitted, they have weights of 3% which does not make much difference in the final outcomes.

> *"In the main criteria no score, do we intend to move towards this? Yes, but only where social environmental considerations are applicable". CAP6B National procurement director*

Governments use soft measures to ensure the inclusiveness of those aspects in the evaluation process, i.e., instead of setting clear scores in the evaluation process (hard measures), the government asks the supplier to indicate their efforts and achievements among the "social and environment" factors.

> *"it is a part of our presentation to say 'Well, we do give back to society', but It's not scored, it's kind of acknowledging that actually, yeah, that we really do give back"* CAP3 Tender specialist .

The effectiveness of using social measures in setting tendering criteria is questioned, since some suppliers believe that as long as there are no scores noted in the tenders on them, the judging panel will not consider them.

> *"the fact oft no consideration for the social and environmental contribution [means that] no value will be added by doing so, in the EU or the Middle East".* CAP7S Regulatory affairs and tender manager

5.12 Model 3: The role of the awarding criteria in public procurement

Three main rationale are scripted and enforced in the awarding criteria. They are the rationale of cost, quality and socioeconomics. Cost rationale are quantitative measures which are perceived as objective by governments and by suppliers. Quality and socio-economic rationale, in contrast, are qualitative in nature which makes them subjective and hard to justify. Thus, the cost logic is the preferred one for suppliers and buyers. In addition, the government focuses on efficiency rationale and saving, which may give the cost logic more power over the quality and socio-economic ones. Hence, the final outcome is that the cost takes the biggest share of the awarding criteria, quality takes a lower level while socio-economic features, if available, have a very low percentage. This reinforces the above conclusion that the "second/third lowest offer will win". Thus, the effect on the public procurement outcome is that the cost logic is enforced at the expense of the quality and socio-economic rationale. Model of the award criteria outcome in Ireland drawn on *Figure 5-11*.

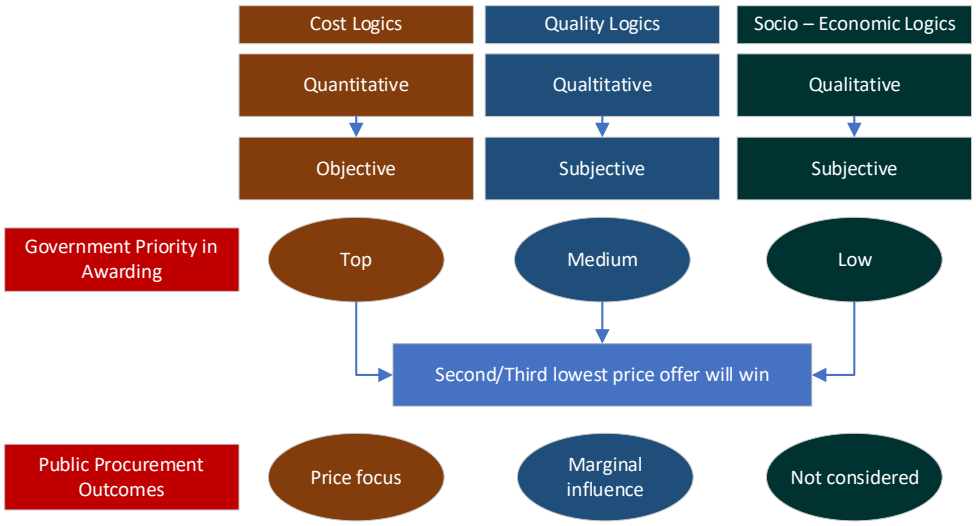

Figure 5-11:Award Criteria Model in Ireland Source (Author)

5.13 Theme 7: Public Procurement Outcomes

According to the HSE report in 2019, the whole HSE public procurement system, including policies, procedures, forms, standard templates, guidance, and applicable legislation, is set out to ensure value for money and achieving the socio-economic and environmental objectives (HSE 2019). To ensure all these outcomes are achieved is challenging because the needs of the private sector and the SMEs (socio-economic objectives) are different from the public interest (i.e., value for money) and the nature of the product as innovative and as concerning the health of the citizens.

"I am working as procurement manager for 14 years I have experienced a few reforms …. and what I can see in every regulatory change is that the regulation one reform … swings on the public authorities' side and the other into the private operators' benefits. There should be a balance between the public social policy and procurement policy which creates complexity in the operations" CAP8 Contract and procurement manager.

The following sections will cover value for money (i.e. efficiency, quality, and duration of delivery) and socio-economic and environmental outcomes. The definitions of these outcomes are summarised in Table 5-12.

Dimension	Definition
Socio-economic	Give accessibility to public procurements so that SMEs can contribute
Environmental	The bidding system allows for green products exist in the public procurement system and sustain it
Efficiency	The lowest possible price
Quality	The highest possible quality, fitting the needs best
Duration	The time from the purchase requisition release to the awarding of a contract

Table 5-11:Public procurement outcomes definitions

5.13.1 Sub-theme7.1: Outcomes in value for money

In Ireland, public procurement is one of the most fundamental elements of the public service reform agenda of the government (OGP, 2016). The OGP clearly stated that the ultimate objective of public procurement is "optimizing value for money" through consolidating the tendering technique (OGP,2016). It seems from the evidence that value for money is the dominating logic in the bidding and procurement process. The focus of Value for Money in this context is based on the narrow definition which underlines the value for money of the product purchased, not considering the societal or environmental perspective at most.

The value for money aspects is defined in the pre-tender stage to formulate the awarding criteria in the MEAT criterion, which enforces the political and legal rationale in the procurement process.

"the key VFM objectives for procurement are determined at the pre-tender stage, and need to be linked correctly to the award criteria at the evaluation stage". CAP5C procurement Consultant

The most common keywords in the analysis defining VFM are "cost, quality, and the duration of the procurement process".

"*The specification includes delivering the … based on the scope or the technical specifications and budget depicts the optimal balance of costs and benefits in a timely manner*." CAP14B Category Buyer

Some minor aspects of defining VFM are noted by suppliers but not by the government and assumed to be there and reflected, but they are not counted in the awarding criteria. These aspects will not constitute the public procurement rationale and will not be reflected in outcomes because they are not encrypted in the system gate (i.e. the awarding criteria). Examples of noted aspects are "knowledge transfer", "client satisfaction", and "hassle free after purchase", or long-term "patient outcomes" .

> *"Value for money it's anything you can do if you can maybe add something in terms maybe of **knowledge transfer**, and you see where you can make the client feel better and… more confident about their diagnosis result, we'd be value for money". CAP3 Tender Specialist*

> *"something that lasts long and is worth the money that was paid for it, would be hassle free as well". CAP7 Regulatory affair and Tender Manager*

The public performance outcomes in terms of value of money have been summarised in **Error! Reference source not found.**, and detailed in the next sections.

Procurement processes performance	
Strengths	**Weaknesses**
Cost	
• The tender award is dominated by the cost of the products and bidding with higher prices means a low score in the bid evaluation.	• Restrictions on non-European suppliers. • It may contradict with users' rationale (i.e. clinicians' rationale) which creates vague tendering documents and may push suppliers to ask a premium price to hedge the risk
Quality	
• The tender documents disclose general quality standards. • The service level agreements are used and failure to comply results in a penalty. • For high quality product, there is an incentive system to ensure the availability and performance of the MDEs.	• The quality is scored but there is no information in the tender documents to show how quality is evaluated. Each quality element has its own price. • Quality assessment is subjective in nature.
Duration of procurement	
• The time period ensures that the tendering processes are transparent and decisions are made within defined rules and regulations. • The duration of the procurement processes from the tender notice to the award takes an average of 259 days (see Figure 5.10)	• The procurement cycle spans from 14 to 22 months and is based on need and urgency. • It may take weeks for urgent products and months for normal tender. • Due to the dynamic market for medical devices, the processes of getting the best available product at the time of the award are too lengthy

Table 5-12:Evaluation of Public Procurement Performance in terms of VFM in Ireland

5.13.1.1 Emergent Theme 7.1.1: Cost

The first aspect, believed to be the dominant aspect in the procurement logic of the Irish HSE is cost (see Section 5.11.1.1 above). The summary of the pressures and their influences on the cost outcomes are tabulated in **Error! Reference source not found.**. It is even believed that

the main aspect considered in the whole process is the cost because this is only thing that can be easily tracked, traced and evaluated. So, the cost logic is heavily scripted in the procurement strategy of the Irish public procurement system.

From the political and legal perspective, the MEAT criterion is enforced by the European Union on contracts above a certain threshold. MEAT encrypts the cost logic in its criteria, as detailed in section (5.11). In addition, the European Union focuses on the standardisation of the process which outweighs the logic of efficiency and cost at the institutional level. The only aspect of the political and legal framework (i.e., the EU economy and single market) that combats the cost logic is when suppliers from outside the EU are involved (5.4.1), which may exert economic and forex pressures (5.4.1.1) as well as the pressures of accreditation and requirements (section 5.4.1.2). This may deny the Irish market access to the international suppliers who can afford to sell cheaper and higher quality products.

Although the cost logic is encrypted in the political and legal framework, ironically, the current process does not comply with this logic due to the presence of another logic, the beneficiary logic (service care provider- i.e. clinicians) (section 5.8.1.1.1). The beneficiary rationale focuses on quality, trademarks and brands which could cost premium. There is a clear conflict in the logic between service providers and procurement staff in hospitals which creates issues in developing the purchase requisitions and procurement documents. Without a regulative information system to unify definitions and concepts and enforce the cost logic on the beneficiary's side, the inconsistency between the administrative staff agents, who wield the public procurement cost logic, and the user's agents, who represent the logic of quality, may conflict, resulting in a hybrid and inconsistent purchase requisition (lacking ownership of the process design), as defined in section (5.8.1.1.3). This complexity affects the cost performance in terms of pushing suppliers to offer premium prices to hedge the cost, and delays in the procurement process plus mistakes in ordering the wrong items, as noted in section (5.8.1.1.4)

Indeed, these challenges come from issues in internal communication. The European framework rationale reduce the complexity by offering two practices. One is to enable limited communication for designing the documents to be made with suppliers in the pre-tendering phase (Section 5.8.1.2.1) and the other is to allow transparent communication with a supplier after publishing the tendering documents (Section 5.8.1.2.2). These two enablers re-empower

the cost logic by reducing the possibilities of mistake and by providing transparent communication with suppliers.

Pressures	Influences on the cost outcomes
Political and Legal Pressures	**With Cost:** Political pressure forces the HSE to use MEAT in contracts valued at more than €130000. MEAT is dominated by cost
	With Cost: Standardisation of the process enables the European companies to penetrate the market and offer efficient pricing
	Against Cost: The Europeanisation process discourages non-European companies from competing and offering keener prices.
Procurement process	**Against Cost:** In the internal communications, the absence of a regulative information system creates complexities in defining the requirements which may push the suppliers to hedge the risk by setting higher prices
	With Cost: In the external communications, open communication with suppliers may help to bring up new ideas which may improve innovations and reduce cost
Selection Criteria	**Against cost:** setting pre-defined criteria for selecting supplier may eliminate good, but not qualified, suppliers from the selection process (e.g. suppliers and international suppliers who are not approved by European and American associations)
Awarding criteria	**MEAT:** Cost dominates the evaluation process for two reasons: 1- the cost factor represents the biggest proportion 2- the other criteria may have a level of subjectivity in the evaluation process. **Against SMEs. Cannot compete in cost vs. quantity or in large contracts**

Table 5-13:The influences of the different pressures on the "cost" public procurement outcomes

5.13.1.2 Emergent Theme 7.1.2: Quality

The quality perspective emphasises purchasing performance in terms of suppliers' relationships and customer satisfaction by ensuring product safety and capacity for treating patients (tender documents). The summary of the pressures and their influences on the quality outcomes are summarised in Table 5-15.

Quality can be defined as a state in which the purchased products fit their purpose or as the grade of the desired qualities in the product. The first definition can be challenging when the internal communication between the users (i.e. the physician and nurses) and the administrative staff do not agree about who should formulate the final requirement list. Internal communication issues can be summarised into the users' inability to comprehend the needs (section 5.8.1.1.1) and differences between their rationale (section 5.8.1.1.2). This can lead to unexpected mistakes, although they were not noted in the interviews except for very few cases. These must not be disclosed in the present research, but such mistakes have room to recur.

"The cervical check [episode] …should teach us something; it was a big lesson. They were monitored for offering value for money; it is not only about money, but also other aspects that should be considered (CAP4C Managing director).

"For example, in the cervical check screen program in Ireland several women were affected by the clinician's choice …the design of tender ***was price dominant*** *and* ***clinicians*** *were* ***given little room*** *for making a decision based on the quality, which was in that case of cervical screening checking measures by the accuracy percentage per number of scans or per patient. The* ***procurement authorities*** *were to blame in that case because they selected the lower cost over percentage test accuracy" CAP4 CEO Managing Director /Consultant.*

There are mechanisms to reduce the problems over quality (i.e., whether products are fit for purpose), and very occasionally administrative staff may reply to a supplier's enquiry but this was rare. Regarding quality in the sense of the grade, there is a service level agreement to assess quality against pre-defined criteria.

"That [kind of]quality is managed though a service level agreement and suppliers are bound to provide a specific level of services. If the contractors fail to deliver on time, at the cost and quality required, a penalty will be imposed or reducing payment milestones to match +performance". CAP6 National Procurement Director

The main challenge facing quality is that some aspects are subjective and difficult to measure (5.11.1.1.2). These challenges put the focus on the cost instead of quality. Gloves provide an example of the fact that focusing on the lowest price may end with a poor outcome.

"I think, it was held on e-tenders and every supplier kept coming in with an offer and the price kept getting lower and lower till at the very end somebody came in and just wiped them all up and I got this big, massive national contract for gloves. Okay, but the gloves were terrible, useless. They were absolutely useless, but that's the only sort of situation where you might use lowest price again, and as I said for items that wouldn't be really medical or with ***low grade medical products you would probably look at quality first,*** *you know,* ***then give a bigger emphasis to price*** *or if it's a small markup, you know that there are four or five suppliers in the market"(CAP8B contract and procurement manager)*

A similar issue is noted with a certain medical device that is known not to fit all ages and the anatomy of all patients, but because the pressure is mainly on cost, this aspect is ignored, which may affect patient outcomes.

"Should the argument there be 'Then everyone's anatomy is different.' So, you may get a more expensive stent than me but you may die in a year's time and I may get a cheaper one but then I may be alive in five years. The one on the left did not make it because you're different; your body is different from mine, you know. So clinical outcomes and outcome based [criteria[are fine, as you said… in theory but it's difficult to actually quantify. That proved to justify yes, to just try."CAP9S National Sale Manager

Thus, lobbyists' efforts to force patients' outcomes to be the most important factor in public procurement are not very successful. As detailed by one of the national sales managers for a corporate that sells to the government, patient care lobbying such as IMSTA does, is useless, and it only works in the ideal world; it is all about money.

> *"They still have to stick with a clinical value it's still hard to give the best outcome and what I think for the likes of the lobby groups like **the IMSTA** group of companies as well to try to lobby HSE or for political people to say 'Oh, outcome-based politics are outcome based health **care and it's fine to talk about determined voters such as us but at the end of the day it's about money.** I think it's not realistic it's an ideal world, it sounds as if it's not realistic because it won't work with people, whether here or there in the Middle East who may be able to …. They still have their old ideologies but they won't get things done in the tradition of old games". CAP9S National sales manager*

Pressures	Influences on the cost outcomes
Political and Legal Pressures	**Neutral Quality:** Political pressures oblige the HSE to use MEAT in contracts which involve more than €25000. The MEAT is dominated by cost but quality is also weighted, unlike the least cost criterion, which does not give weight to quality. But it can be subjective because it includes a small proportion of pass/fall assessment
	With Quality Standardisation of the process makes European companies capable of penetrating this market and offering their quality products in the Irish market.
	Against Quality: the Europeanisation process discourages non-European companies from competing and offering higher quality products.
Procurement process	**Against Quality:** In internal communication, the absence of a regulative information system creates complexities in defining the requirements which can lead to mistakes or improper definitions of the requirements.
	With Quality: In external communication, open communication with suppliers may help to bring up new ideas which may improve innovations and quality
Selection Criteria	**Against Quality:** setting pre-defined criteria for selecting a supplier may eliminate good, but not qualified, suppliers from the selection process (e.g. suppliers and international suppliers who are not approved by European and American associations)
Awarding criteria	**MEAT:** Quality is weighted as a factor but is not the dominant one.

Table 5-14:The influences of the different pressures on the "Quality" public procurement outcomes

5.13.1.3 Emergent Theme 7.1.3: Duration of Procurement

Due to the legal pressures, the procurement process is simplified to ensure that communication with external stakeholders is open. This in turn gives Ireland the chance to make the purchasing processes shorter and more efficient than they are in Saudi Arabia. But there is a challenge from the risk of a long communication process due to challenges in internal communication over the identifying of needs (5.8.1.1). The time perspective impairs the efficiency of internal business processes when it comes to purchasing. The important indicators in this respect are the purchase order cycle and the time required for the processes and procurement cycle. The tender documents show that the procurement cycle takes an average of 14-22 months to

announce the successful supplier. The stakeholders mentioned that the length of time associated with the procurement cycle is based on the urgency of the product. CAP8Buyer stated,

> *"I do not know how long it takes. It depends between weeks for an urgent need and you're talking up to seven months if it's a normal tender".CAP8BContract and national director*

> *"it takes up to 8 months at the design base before publishing the notice, according to the nature of the contract and the size and availability of the information"CAP12B Hospital procurement manager*

> *"It depends on how many people and departments are involved in the process. A large project might take up to two years". CAP6 National procurement director*

Based on the data available on e-Tender the duration of the processes is on average 259 days, and as illustrated in the graph (5-12) observation suggests that large projects may take longer, judging from individual tenders.

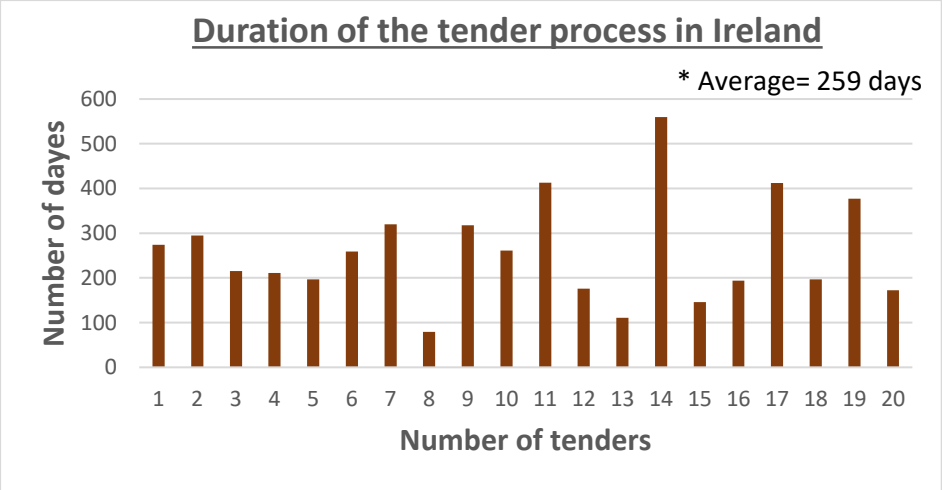

Figure 5-12:Duration of procurement processes as visualised by Author.

To summarise, it is evident that procurement processes may continue for 14 months or anywhere up to 24 months. The stakeholders commented that the procurement time period is influenced by urgency, size, requirements for MDEs and the number of people and departments involved in the processes. Urgent products may take weeks and normal tendering may take months. In this research it was shown from 20 tenders that the tendering processes alone take approximately an average of 259 days.

5.13.2 Sub-theme 7.2: Societal outcomes

Public procurement is different from private procurement because its procurement process does not have value for money as its sole objective. The social outcomes are mainly on the

embedding the SMEs in the public procurement system. The summary of the pressures influencing the achievements of the societal outcomes are summarised in Table 5-16.

The Irish government sets a clear vision to promote the role of SMEs in the public procurement process. Several initiatives have sought to involve SMEs in the public procurement process which can have a clear impact on the economy. According to MedTech (2020), Ireland has more than 500 companies directly employing around 40.000 people; this number per 10,000 inhabitants is considered the highest in the EU. Some initiatives noted in this research seem to be useful, such as the simplification of the procurement process which is initiated by the EU framework and making the tender documents with all the relevant data freely available to everyone on the internet (Section 5.8.1.1.2) However, still, there is room for improvement.

> *"because tenders are designed to be big lots rather than smaller lots. You know, 'the consultants' for a specific product know that smaller companies will not be able to afford these quantities making it a hard challenge. This creates a niche not accessible to many SMEs. The tenderers probably tend to look at the bigger companies". CAP3 Tender specialist*

The political framework of the EU fosters competition and the open market strategy helps to have the most efficient suppliers in the EU for the bidding. These European firms, due to the size of their operations, can have a competitive advantage due to the economies of scale which may make trouble for the SMEs who cannot offer similar qualifications and prices. Similarly, procurement has some aspects of complexity represented in the vagueness of the requirements, which may make it difficult for SMEs to afford because they have far less ability and power to afford the risk of unclear requirements than the corporates. Besides, there are discriminatory standards and criteria to ensure the "quality of the suppliers" that do not favour the SMEs. These selection criteria present significant barriers to the SMEs who want to penetrate and exist in this market, in the form of single EU procurement documents (Section 5.5.2).

> *" I think one of the issues we have is this challenge of clinical preference. So, one clinician may favour one type of product over another simply because they are more skilled and more familiar with that product and how it is to be used on the patient. The question is, Can **small companies meet their requirement**? And so that is a challenge for us and in many respects influences this: MEAT or lowest price?. If we were to go lowest price only, we will end up with a single product from a well-known company. There's no doubt about it so far, because really what you're doing by shifting to price and price only is you're saying to the market one supplier one product and universal use. You [and] your little [firm] face the **elimination of discrimination** of both those, also if we go with MEAT how can we align that with their needs, and involve all policy requirements? " CAB6 National Director*

Thus, due to the conflict between the embeddiness of the SMEs in the public procurement system and value for money institutionalised by the European Union regulations and rules, the tendering documents are perceived to be written for European corporates.

> *"As a SME supplier, the tenders are written for large corporates. Most of the tenders stipulate the previous successful completion **of big governmental deliveries** of supplies. Some of them clearly identify the [number of] years operating in the market, which is beyond our existence" CAP11Sale manager SMEs*

The summary of the pressures influencing the integration of the SMEs in the MDEs public procrurement in Ireland are summarised in table 5-16. They are political and legal pressures, procurement pressures, selection and awarding criteria.

Pressures	Influences on the cost outcomes
Political and Legal Pressures	**Against SMEs** Standardisation of the process (5.5.1.1) and the open market enable the European companies to penetrate this market and offer their quality products in the Irish market, which is often inaccessible to the SMEs. **With SMEs**, plans to ease the access of SMEs at the EU and national level, by standardising the processes
Procurement process	**Against SME:** Vague requirements increase the risk which SMEs cannot afford
Selection Criteria	**Against SME:** setting pre-defined criteria (such as FDA and CE) for selecting a supplier may eliminate the SMEs before awarding evaluation
Awarding criteria	**MEAT:** There is no clear evidence that the MEAT criterion may play a role in discouraging or empowering SMEs. There is no clear evidence that being an SME in Ireland can raise one's score. **Against green and social aspect:** these are not weighted within the MEAT criterion which indicates that environmental and social concerns are not institutionalised in practice (5.4.3.2.2)

Table 5-15:The influences of the different pressures on Societal public procurement outcomes

5.14 The Irish Case Study Framework

The analytical framework in Chapter 3 stipulated 7 main themes for this research. They are political, legal, dominant rationale, process, and practices (communication and awarding) and public procurement outcomes. The Irish case study framework is presented on (*Figure 5-13*) The emergent themes for political procurement are the Europeanisation of the economy and the legal framework of the Irish public procurement system. Government pressures in terms of focusing on the efficiency of the public procurement system may be added. These two coercive pressures created six main emergent themes, here conceptualised into the rationale dominating public procurement. They are the rationale of efficiency, transparency, discrimination against non-European firms, innovation, empowering SMEs, and institutional complexity on the benefits side. These rationale are not enforced on the same level nor in turn reflected similarly in the value for money measures.

The efficiency is endorsed by the Awarding Criterion (MEAT) which gives the highest score to the cost parameter and in turn is reflected in the highest priority of value for money over cost. Transparency is enforced through communication in the tendering process but sometimes threatened when the government invites major suppliers to design tendering documents. Although they are believed to promote the logic of innovation, they are perceived by some suppliers to breach transparency. The suppliers who participated in this design process are not allowed to compete in the bidding process, but the participants referred to the power of social relationships which may affect the transparency of the process. Similarly, the concern over "empowering SMEs" has been threatened here because the SMEs are not part of this process. SMEs are invited for "educational" programmes which are believed to be not very effective and do not compensate for their differential treatment. Thus, the empowering of SMEs is reflected in the outcomes as the lowest concern because the perception of such actions is not sufficient to protect SMEs, especially since MEAT does not protect SMEs by giving them a score as such.

The last dominating logic is the "institutional complexity of the rationale of beneficiaries". Clinicians and administrative staff have different rationale and different needs which creates conflict and complexity. The outcome of this complexity depends on the level of power of that each has. Indeed, this kind of complexity is believed to result of not having an ERP system to unify and unite communications. This issue is translated into the undermining of quality aspects because of the inadequate process for identifying requirements.

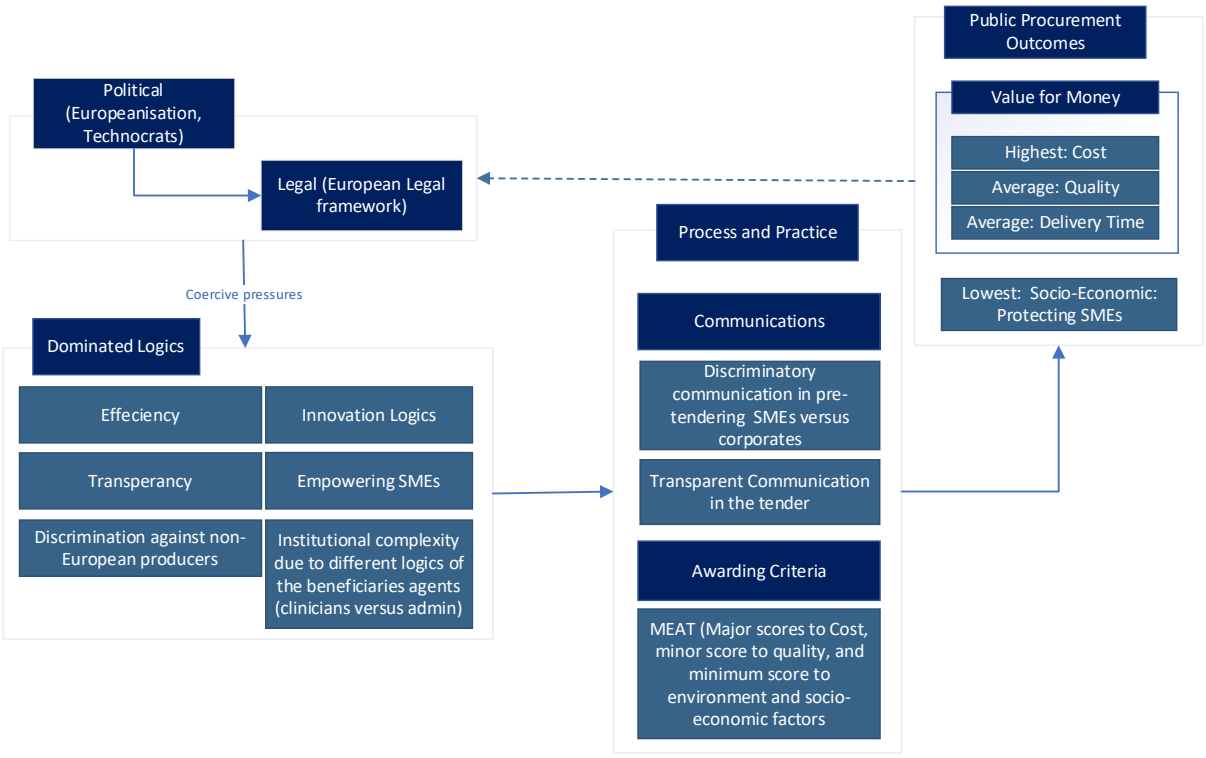

Figure 5-13:Irish case study framework

6 Chapter 6: Case Study Result of the Procurement of Medical devices and Equipment for the Health Care Sector in Saudi Arabia

6.1 Introduction

The aim of this chapter is to investigate the role of the political environment and the legal framework in Saudi Arabia in shaping the process, practices, and outcomes of procurement. The analytical framework defined in Chapter 3 (Section 3.5, Figure 3.1) contains seven main themes to guide this research. They are political, legal, process, selection, communication, awarding, and outcomes. Thus, section (6.4.) of the present chapter underlines the key aspects of the political environment that may play a role in shaping the legal framework and procurement process, practices and outcomes. Next, the legal framework is studied in section (6.5.) which presents the possible outcomes from this legal framework and explores its potential role in shaping the process and practices. The first model of the role of political and legal pressures on public procurement outcomes, based on the findings of the first two sections, is derived in section (6.6.) In the following section (6.7) the procurement process is detailed and defined to map the communication and awarding process in public procurement. The main practices that could shape the outcomes are the communications (section 6.8) selection (section 6.10) and awarding criteria (section 6.11.). There are two models are deduced from the communication (Model 2- Section 6.9.) and awarding criteria (Model 3- Section 6.12). The last section (6.13.) before the model summary discusses the public procurement outcomes which result from the previous forces, pressures, and interactions. On the bases of previous themes, a single model for Saudi Case study integrated on section (6.14.)

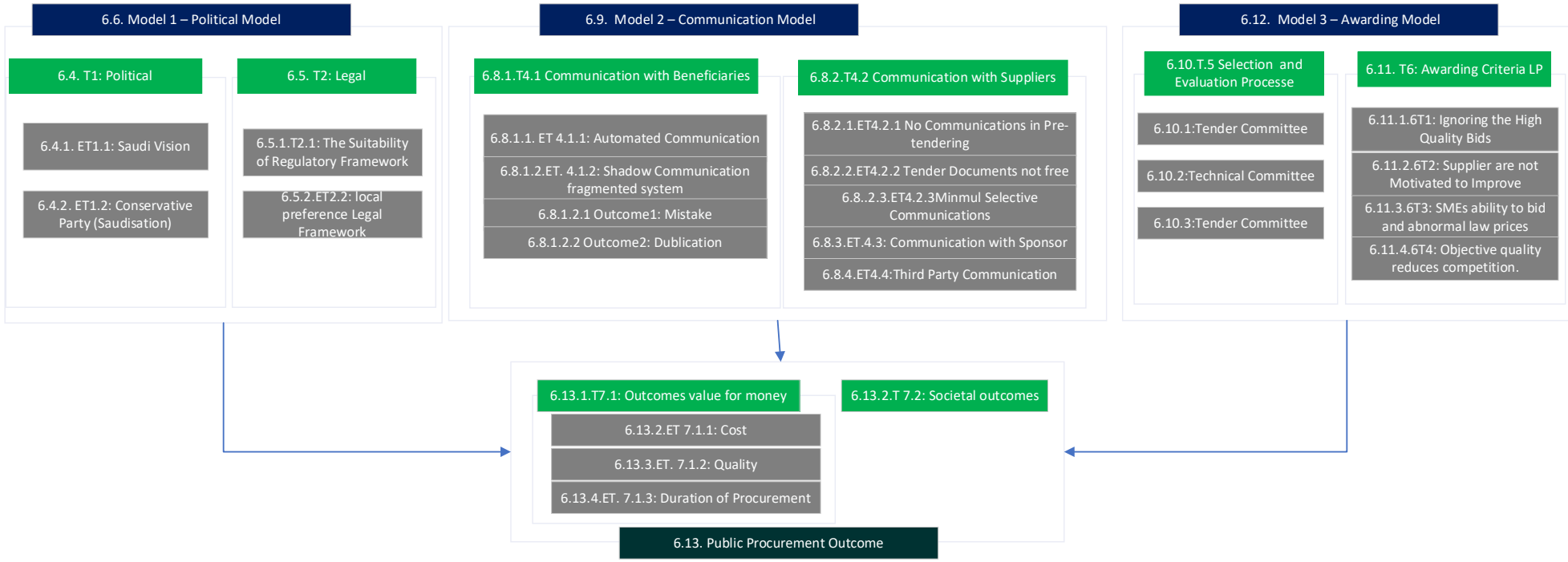

Figure 6-1: Overview of Saudi case study

6.2 Research Methods

This chapter presents three sources of data about Saudi Arabia's procurement in the case of supplies of medical devices (MDEs). The primary source of data is 19 semi-structured interviews. The interviews were conducted with clinicians, procurement practitioners and suppliers. Findings are also drawn from 20 tender documents which were collected from 'etemad.sa' as well as personal access to the Procurement Department of the Ministry of Health. Both primary and secondary data are included, and triangulation has been used to analyse the procurement practices and report the findings in this case.

6.3 Institutional Settings

6.3.1 Saudi Health Care Sector

The Saudi Arabian Ministry of Health (MoH) was formed in late 1960's. The Saudi public healthcare system is developed based on the model of British National Health Service (Mufti, 2000). The healthcare system in Saudi Arabia is a national health care system in which free health care services are provided by the government through different governmental agencies to all Saudi citizens and expatriates working in the public sector. The country has offered comprehensive, universal access for many decades (Walston et al., 2008).

There are three main health providers in Saudi Arabia which are instrumental in providing health services- Ministry of Health network of hospitals and primary healthcare centres as well as medical cities which has its dependents buddies and private sector (Figure 6-2). Ministry of health remains the biggest provider in the Kingdom with taking care of 62% inpatients. Other than the MOH other healthcare providers also provide over 37% of the inpatient facilities and form an important part of the system (MOH, 2005), and only 3% of the total patients are served by private health hospitals.

According to the Data monitor (2017), the Saudi Ministry of Health is the major government authority and financier of health care services with a total of 270 hospitals accommodating 40,300 beds, and 2,281 Primary Health Care Centres, running a number of hospitals that exclusively cater to Saudi nationals. In 2019 the health care holds the third largest government expenditure accounted for 15.6% of the total budget. This figure outlines approximately 8% increase to $46 billion as compared to $42.4 billion in 2018 (KPMG, 2019).

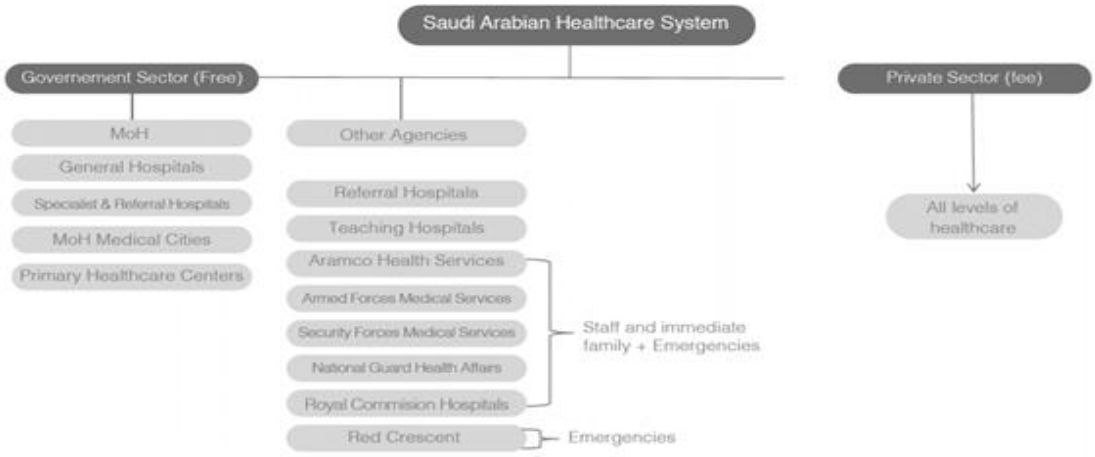

Figure 6-2:Saudi Healthcare system (MOH;2019)

6.3.2 MDEs Public procurement organisational structure

Figure 6.3 illustrates the current governance structure of procurement in the Saudi health care sector model. The Procurement Department is placed at the bottom of the hierarchy. Many departments are involved in public procurement decisions, which leads to a long and complex process.

The procurement process goes through eight main stages. Stage 1: the hospital defines its requirements and (for contracts worth more than 500,000 SAR) sends the purchase requisitions to the Department of Planning and Medical Supply. Stage 2: The MoH consolidates all the requisitions to prepare the tender documents, using consultants to correct any unclear language or give advice. Stage 3: The tender documents are published. Stage 4: The Procurement and Contract Department selects suppliers (i.e., by filtering and shortlisting the eligible suppliers). Stage 5: The contract is awarded on the principle of least cost for the qualifying offer. Stage 6: The best offers are submitted to the Minister of Finance to approve within the budget. Stage 7: whenever the authorised budget differs from the offer, the negotiation begins. Stage 8: Once the price and terms are agreed, the winning bid is declared and the final contract signed.

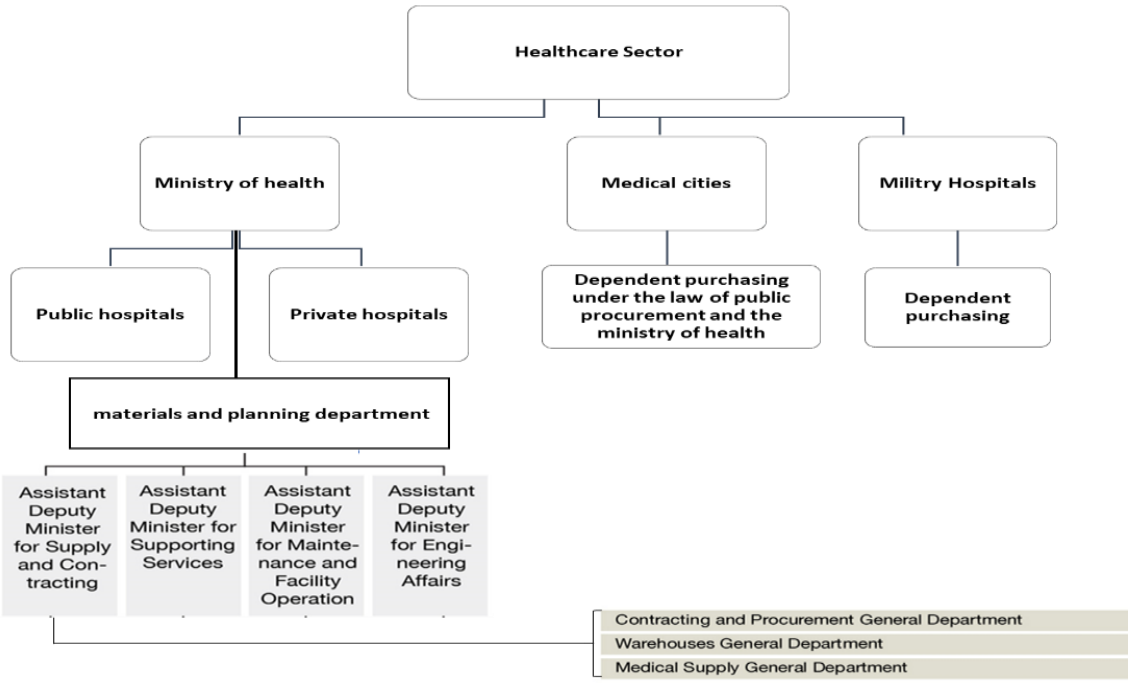

Figure 6-3:Saudi healthcare procurement duplicated of the current structure from(Moh.ie)

- **The Ministry of Health**: The Ministry of Health is the governing and management body responsible for the monitoring of tendering planning, authorisation and implementation.
- **Department of Planning and Medical Supply:** this is a section of the Procurement Department involved at the pre-tender stage. The planning team is responsible for the planning and design of tendering requirements, along with the
- **General Department of Engineering and Maintenance:** this is involved in cases of high value MDEs which require software knowledge or IT linkage to the hospital system. It also prepares locations by supplying the basic infrastructure.
- **Procurement and Contract Department:** this has charge of the selection and evaluation of suppliers through three committees which are managed under the Department of Materials and Planning.
- **Department of Finance of the MoH:** any contract worth less than the threshold amount must be approved by the Finance Department within the Ministry of Health or by a regional public health authority. This Department can approve a budget for direct procurement which is usually less than 500,000 SR. The amount exceeding the threshold is sent to the Ministry of Finance for approval.

- **The Ministry of Finance:** The Ministry of Finance manages and approves the budget for MDEs on an individual contract basis. The contract budget is located only after the award decision.

6.3.3 Overview of public procurement in Saudi Arbia

Saudi procurement regulatory framework is rooted in the EU public procurement law, as transferred from Egypt in 1957 (Hanson, 1987). The government developed and prepared many development plans (Davis,2014). However, the system is still too immature to implement them. The major reform of public procurement was in 2007, when the government change many articles in the law to comply with international law and principles such as transparency and equal treatment, because of its political ambition to join the World Trade Organization (WTO) of Government Procurement Agreement (GPA). while KSA is a full member of the WTO commercial agreement, it not joined yet the GPA agreement still an observer member in 2020, because unsatisfactory procurement reform (WOT, 2019).

Despite its financial shortcomings, which have led to the exit of many procurement firms from the market due to the expense of the government requirements, the procurement process in Saudi Arabia is currently not only regulated by the Purchasing Law, but also subject to other supplementary regulations. However, the principles of these policies cover only the contracts that were issued in line with legal procedures (Davis 2014). Goods and services may be purchased from no more than one supplier or contractor with no standard alternatives and are procured by direct purchase, depending on the authorisation of the competent minister (Mamavi, Nagati, Pache, & Wehrle 2015). The procurement law in Saudi Arabia gives priority to products made in Saudi Arabia over products from other countries. Therefore, foreign companies may find it hard to win a government contract. Likewise, a government contractor is normally required to use suppliers from Saudi Arabia when their prices do not exceed those of foreign commodities by more than 10 percent(GPA 2006).

6.3.4 Medical devices regulations

The Saudi Food and Drug Authority (SFDA) is responsible for regulation of medical devices in Saudi Arabia, this involves importing and distributing of medical products (Naouar, 2018). The SFDA registers and authorises the entry of a device to the market if it complies with

SFDA's Interim Regulations. The device must also comply with regulatory requirements in one or more of the countries which form the Global Harmonisation Task Force (GHTF). The GHTF includes Australia, Canada, Japan, U.S, and EU/EFTA (Ita, 2019).

6.4 Theme1: Political Pressures

There are two main political pressures driving the public procurement. The two emergent themes are the country vision and conservative party role.

6.4.1 Saudi Arabia Vision

The key task of the Saudi Vision 2030 is to foster the role of the SMEs and reduce public expenditure (Vision 20-30, 2017). As part of this vision, the government is actively seeking to expand the role of the Saudi private sector in the economy. Currently, the participation of the private sector is pegged at only 32% in the KSA Ministry of Health ("MOH",2015). This vision is expected to contribute to improving the ability of the SMEs to bid for public procurement. The Kingdom's public expenditure in infrastructure, health care, transport and other government-driven sectors is eminent in the MENA region (WOT, 2019). In the underdeveloped reform programme under its vision 2030, the Kingdom is aiming to construct an economic, social and legal benchmark for the coming generations. In this, public procurement should lead in such projects as attracting FDI, optimising public spending, increasing transparency, reducing corruption and diversifying the economy, in line with Vision 2030.

"The official logo of Saudi Vision 2030 is a strategic framework to reduce Saudi Arabia's dependence on oil, diversify its economy, and develop public service sectors such as health, education, infrastructure, recreation, and tourism". (Saudi's vision, 2017)

6.4.2 Monarchy Conservative System

KSA is ruled by a monarchy system where the king is the chairing the government and major authorise in the country. In Saudi Arabia, it is not allowed to take part in labour unions or pressure groups. The current regime has a clear political agenda which highly shaping the institutional rationale in procurement sector. The Saudi government is adopting the right approach of being conservative in its leadership. Hence, its orientation is mainly towards local suppliers, local materials and local employment. This orientation is encapsulated in article 5 of

the public procurement policy, which stipulates that *"Priority shall be given to national manufactured goods, products and services suppliers and to those treated as such"*.

Thus, the current regime at the time of the research focuses mainly on "buy local" policies such as Saudisation, which indicates an increase in the added value of the Saudi components in all transactions as far as possible. This preferential strategy underlies the percentage of the products that have to be Saudi, the percentage of the ownership of any corporate, and the percentage of employees working for the company. International suppliers are challenged and not made very welcome to provide services in the KSA. Indeed, one item in the public procurement law states that the international supplier price shall be 10% lower than the Saudi one.

"International companies that want to participate in the Saudi government's investment and procurement contract opportunities "will have to make a choice" and establish regional headquarters in the kingdom as of 2024 or they will not win government contracts "but "If a company refused to move their headquarters to Saudi Arabia it is absolutely their right and they will continue to have the freedom to work with the private sector in Saudi Arabia," Minister of Finance cited by Reuters, 2021) (Rashad, 2021)

6.5 Theme 2: Legal Framework

The legal framework for procurement in Saudi Arabia is applied to all government departments including the healthcare sector. The Ministry of Finance in Saudi Arabia (KSA) has published its 'Government procurement system' under MAR/1966, issued by Royal Decree No M/14. The law was adapted from the Egyptian bid regulations 1957, which came from a textual translation of the French procurement law of 1953 (Hanson, 1987). This was developed and modified in 1978 by royal decree No. M/2/1978 (Jr and Weissman, 1980). The law in many royal decrees, articles, terms and clauses therefore combined government tenders and procurement. These were replaced in 2007 by royal decree no M/58, dated 4/9/1427 (27/9/2006) and a regulation from the Ministry of Finance No 362 dated 20/2/1428 (11.03.2007). The final reforms have been beyond the scope of this study; based on public procurement law 2007. Figure 6-4 shows regulatory reforms since 1977.

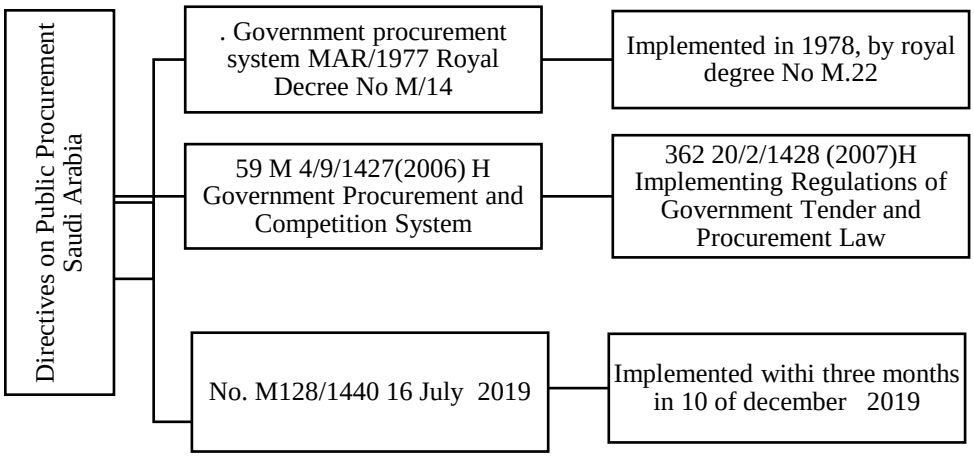

Figure 6-4:Regularity framework Saudi Arbia (adapted by author (MOF-2019)

The previous legal framework can be characterised by two main flaws: it was outdated and not designed mainly for the Saudi context, and it discriminated against international firms.

6.5.1 Emergent Theme 2.1: The suitability of the legal framework

The legal framework for procurement, as noted above, was initially adapted and translated from the French procurement law of 1953 and borrowed from Egypt in 1966. In 2007, the KSA government updated the regulations to ensure that the procurement systems complied with international standards.

> *"the numbers of standards initially have been translated from multiple procurement regulations which **cause extra complexity**. I personally believe that countries can never adapt any system into their own, taking into consideration the culture and knowledge of administration"* CBP15C (Ministry consultant Former director of Procurement Department)

It has been noted that the challenge is not mainly with the laws themselves; they require control, transparency and efficiency. The challenge in fact is how these laws are interpreted and reflected in the current practices.

> *"the public procurement law is fine, but challenges are associated with the **implementation of the law**. The recent legal reforms for public procurement remained overlapping and present ambiguities for stakeholders." CBP11B (Procurement officer)*

The key informant indicates that the procurement regulations need to be updated to fit the Saudi environment and character. It is not necessarily the case that procurement law and procedures

which work in other countries may help a better system to be adopted in the kingdom. This perception of unfitness or unsuitability from the buyers and consultants raises doubts about the applicability of this framework, leaving it hard to see how the government's procurement regime is translated into practice.

Theme	Sub themes
Suitability of the Legal framework: Outdated and does not fit with the current changes in the environment	Complexity in terms of red tape
	Entry barriers (cost of performing with this complexity) against the SMEs

Table 6-1:Theme 1: Suitability of the public procurement regulatory framework

6.5.1.1 Outcome 1: Fragmented Governance System

The legal framework was initially developed for a specific industry with a smaller number of stakeholders. Currently, the number of stakeholders engaged in the procurement process has to represent different departments and concerns as well. Thus, a more sophisticated governance framework is required to align these concerns into a single evaluation tool to reduce the time and effort needed for decision-making. This argument is abstracted from the interviewees' concerns over "no strategic planning", "repetitions", "working independently", "no collaboration", "inconsistent decisions" and "redundancy".

> *"The biggest challenge is that the ministry has no strategic planning for purchasing. Its activities became repetitive, and they don't know if the purchasing procedure is right or wrong; then they repeat their mistake"* CBP1S Regional Sales Manager

> *"lack of clear strategy at the beginning of tender design; there are abrupt changes in specifications, requirement and conditions during the tender process"*. CBP12S Government tender and sales director

The fragmented governance framework creates inconsistency and contradictory decisions which could disrupt the rhythm of the procurement process. For instance, it has been noted that the government changed its mind after awarding one contract, which left the contractors puzzled.

> *"The government reserves the right to change the demand and reduces the contract commitment to 50%. This is a result of not giving the contractor the right path to plan and suppliers struggle to meet the deadlines"*. CAB5B Tender coordinator officer

Even the updates to the regulations are minor and without a clear strategy, creating more conflicts (e.g. between the procurement regulations and the royal decrees that complement the regulatory framework) and misunderstandings. This is noted by a public procurement director in Saudi Arabia who after his retirement became a consultant.

> "*Despite the fact that government is developing the regulations to improve the procurement system, public administrators faced by many articles in the law have to have it explained by the legislative bodies. Every year multiple royal articles will be*

*added which may contradict each other, so should we follow the regulation or the royal order? To me the second one is more important" CBP15C (*Ministry consultant Former director of Procurement Department).

"The regulation is not reflected on the procurement documentations, I think it is more as sit of conditions mixed with regulations, but if compare it to some articles in the directive its not matching, we have tried to complain about it but, they(procurement) will come out with a royal order in their archive that is not available for general public and suppliers " CAB5Buyer Procurement specialist.

These issues and contradictions in the government decision-making process created a challenge in the procurement process in terms of approving payments and the length of lifecycle of the procurement process which is not correctly regulated to allow compliance.

*"For MDEs suppliers, the legal situation causes problems such as **late payment**, dealing with local suppliers and **making payments upfront.** Rather than waiting for a government department's **long procurement processes and budget approval, we need to know what the government wants.** [It should] signal its requirements clearly to be reflected in our proposal. CA&BP7 Regulatory affairs and tender manager*

These disruptions in the process and the delays that they cause could influence international suppliers' commitments because the contracts are perceived to be "uncertain" even after being awarded.

6.5.1.2 Outcome 2: Complex and inefficient Process

'Complexity' in this research consisted of being vague, ambiguous, hard to comply with and bureaucratic. The vagueness and ambiguity are reflected in the lack of official guidelines and possible misinterpretations of the law.

"*Although the government aims to reform and improve procurement processes, there is a **lack of clear systemise processes** and **procedures in place**". "You hear different than what you see"* CBP8B Senior buyer analyst.

"the regulations need to be clarified by policy makers, there are no official procurement guidelines for procurement practitioners to understand. We have the regulatory directive and many articles and degrees that should be considered at operational level" CBP2B Tender Officer

"no manual with simple explanations of the regulations, which are left to the interpretations and implementations of the procurement authorities" (CAP18 s Sales manager)

The second aspect of complexity is being bureaucratic and hard to comply with because of the fragmentation of the system and differences in the interpretations.

*"regulations are **bureaucratic** and **hard to comply with**".* CBP4Sales manager

> "*bureaucratic regulation influences everyday practice. This results in complex requirements from many departments, between designing and awarding the contract, receiving the procurer's equipment and finally the payment which most of the time is late"*. CBP12S tender and government relations director

Interestingly, this complexity has become a normal logic in this context and the larger Saudi suppliers expect and deal with it. It becomes a business logic for operating in this market and entails repetitive processes.

> *"We are working with the government for years and issues of complexity with the law have become **norms**"*. CBP9 S General manager

6.5.1.3 Outcome 3: Entry Barriers to the international suppliers and SMEs

The third emergent theme in understanding the role of this unsuitability of the legal framework is "entry barriers to international suppliers and SMEs". This level of complexity could influence the attractiveness of this market where the perceived behavioural control will be low. i.e., the new entrants, drawn from international suppliers and SMEs, may be overwhelmed by the level of vagueness and complexity which will discourage them from contributing to the competition in public procurement.

> *"The political complexities in procurement result in poor market competition and limited access to international MDEs, which have led to poor value for money."* CA/BP7S *Regulatory affairs and tender manager*

It needs suppliers with experience of the system to deal with this complexity.

> *"I think procurement in Saudi is more driven by experience and how good you are at dealing with it. You must have good experience to know how procurement works" CBP10 Small business owner*

> *"I would say new entrants, either large or small companies, cannot compete in public tendering. Giving more flexibility to international firms can help attract investment to the country, also it may help a small company to sub-contract with a large one, rather than having a few players controlling the market"*. CBP9 General manager

This indeed could leave the public procurement system in trouble due to lack of competitions when few can afford such complexity.

> "*due to the complication of processes and harsh requirement in both qualifications and technical specifications, a buyer may not find even a single supplier who can satisfy the desire product requirements"* (CBP18S Senior contract manager)

6.5.2 Emergent Theme 2.2: Discriminatory legal framework

The second emergent theme in the legal framework give a preference to local contractors. This nationalisation policy sets many formal and informal restrictions on international suppliers.

The result is that of the companies in the medical sector operating in Saudi Arabia 0.3% are international and 99.7% are local ones (Argaam, 2015).

> "the *political actors prefer local suppliers to international suppliers before tendering. It is considered to be public policy*." CBP9 S General manager

> *"In the kingdom we faced stiff requirements which are even difficult to comprehend., I've been dealing with tender submissions in both the EU and the Middle East… and the legal requirement for submitting tender to the MoH is always challenging…we found many requirements in the tender document that are not related to the product or how the device works".CAP7 S regulatory affairs and tender manager*

Theoretically, the motivation is intended to support SMEs. The Government Procurement Law (GPL) gives preference to the local and SME companies as part of its effort to increasing their participation in the economy. In fact, the country is not industrialised and most of the MDE companies operate as contractors of international companies.

> *The SMEs companies manufacture no MDEs in house; I'm not sure if it would be suitable for all industries.* CBP1S Regional sales manager

This political orientation, then, seems ineffective because about 95% of the MDEs in Saudi Arabia are imported from international suppliers (Market.Line, 2020). As the CEO of one of the largest MDEs contractors in the kingdom puts it:

> *"all suppliers import from global sources …. we have a master licence to distribute 21 leading medical device companies to the GCC. We are employing local staff but the overall number of employees in our companies is 450…we cannot contribute to society and the economy like if … you know, if these companies are manufacturing in house, can you imagine if Boston-scientific alone established their manufactures and their other business facilities how many jobs would be introduced and how much the Ministry of Health would save in terms of cost and lead time".* CBP1Regonal contract manager

That is to say, the demand for Saudi products exceeds the accessible supply that these companies can provide, which can lead to an imperfect market. Giving a preferential percentage to local enterprise over international does not suit the medical devices industry.

> *"So, I think the international vendor choice is a must rather than optional, really, because we are limited by the market and discouraged by the regulations. Is that for the benefit of the local suppliers and the economy?".* CBP17B first procurement officer

Thus, the first outcome of the Saudisation policy is to reduce the ability of international firms to operate in the Saudi market by themselves and obliging them to use Saudi agents (third parties). Based on data from the last 5 years of tender data available, almost no contracts were awarded to international organisations. All of them have entered the market using Saudi companies as an interface for the legal requirements. Further, this led to cost opportunities and added to the cost of economic transactions. These political pressures created three outcomes in this market.

These political pressures created three outcomes in this market, as seen in Figure 6-5. They reduce international competition, turned the market into an oligopoly, and paid more than the international market (inefficient market) for the same goods. The preferential percentages given by law to local suppliers may have added to the original cost of the MDEs and logistics, limited the number of alternative similar products and extended the lead time.

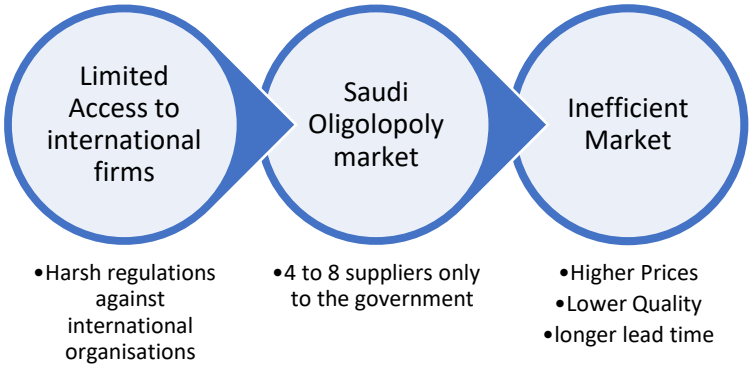

Figure 6-5: Outcomes of regularity framework source (Author)

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6.5.2.1 Outcome 1: Limited access to international MDEs

Due to the harsh regulations, the international companies selling MDEs cannot operate directly or independently in the KSA. To overcome the legal challenges and uncertainties of the processes, the international companies either hire a local consultancy agent to act on their behalf in the tender process or find suitable and reliable contractors to distribute the medical equipment and products. Indeed, not all international corporates accept this strategy as a way of penetrating the Saudi market, which may compel the Saudi market to rely on those international firms who are prepared to work through a third party.

> "*However, the preference for local suppliers restricts competitiveness and flexibility as well as increasing the cost of MDEs".* CBP1 chief 6 Planning officer

> "*Working with the government through third party contractors was the best choice; we tried to operate in the market back in 2009, the policy of having a partner with 50% was not an option for the company. We have worked with two distributors in Saudi Arabia. We find that local suppliers have a better sense of the market, regulations, and culture. I would say working with the private sector saved us tremendous effort and cost, more than if we had worked directly with the governement"CAP10* Director of Global Contracts and Pricing (Manufacturers)

6.5.2.2 Outcome 2: Oligopoly Market

The preference for local suppliers over international companies means that the country has no strong competitive market. Due to the complexity of the process and the inability of local firms to deal with the legal challenges, the current market is dominated by four main Saudi suppliers who won approximately 80% of the contracts between 2014 and 2018 (Tender documents). Indeed, there is no effective competition: all the suppliers involved in this procurement are contractors, second- or third tier suppliers, which may prevent buyers from enjoying best value. Some international MDE companies have more than one contractor, meaning that many offers are sometimes made for the same brand.

> *"In the KSA, there is a preference for specific companies and the authorities prefer to keep it national rather to go international. There are not many local companies and local suppliers cannot meet the demand they are not manufacturers". CA&BP7S Regulatory affairs and tender manager*

6.5.2.3 Outcome 3: Inefficient market

An inefficient market procures at a higher cost/lower quality than an efficient market does (i.e. a market with open competition). The MDE market in the Kingdom is dominated by suppliers who mainly supply goods from elsewhere. International firms cannot penetrate the market freely due to the preferential legal complexities which discriminate against them, The local firms charge more for identical products sold outside Saudi Arabia.

> "*… the preference for local companies limits the competition and local companies charge higher prices than in other neighbouring countries*." CBP15 C Ministry consultant Former director of Procurement Department)

It has been noted that a typical product is sold in Egypt, a next-door country at two thirds of the price in SA,

> *"the price from the same brand contractors in Egypt almost 60% lower than the manufacturer asked for*". CBP2B Tender officer

It has also been noted that the international producers' prices are lower by 30% than the prices offered by local suppliers in Saudi Arabia.

> "*Most of the companies selling medical products in the KSA are second- or third-tier contractors so the price will be at least 30% higher than the international price".* CBP18S *Senior contract manager*

Others noted also that typical products are sold internationally at prices 10% lower than those in Saudi Arabia.

*"the current regulation gives the right to the contractors in the kingdom to **charge 10%** profit over **the international suppliers' price**". CA&BP7S regulatory affairs and tender manager*

"*there is a preference for the local suppliers even though local suppliers especially in medical devices are thought to be only distributors and third-party suppliers increase cost by almost 20%. The government supports this policy, and some people can say it's easy money, but we wait months for a contract, also similarly we wait for payment which most often takes several months "*. CBP12S tender and government relations director

6.6 Model 1: The influence of political and regulatory pressures on public procurement outcomes

The research model to visualise the role of the political and regulatory pressures on public procurement outcomes is in Figure 6.6. This research examines procurement processes in the conventional legal framework adopted by Saudi Arabia in 2007. Various regulation challenges shaped the current public procurement process. The framework has been described as fragmented, complex and outdated; it does not fit with the current changes in the environment. In the years since 2007 many royal articles and orders have been issued outside the regulation framework and public procurement authorities must comply with both, although they can sometimes overlap or contradict one another. Furthermore, the legal framework is strongly influenced by the culture and the experience of suppliers in their dealings with each tender. The procurement regulation reforms are vague, lack clarity and have resulted in multiple interpretations; they are a challenge to implement. The many reasons why international MDE companies cannot operate directly in the KSA impact competitiveness and the outcomes of the procurement cycle. They include the legal complexities due to the public policy preference given to the local suppliers, which add up to 10% to the cost of project in the international market. Thus, there are not many qualified suppliers especially in the market for MDEs.

To an extent, the institutions saw the legal challenges of procurement as routine operational issues. The MDE companies cannot operate directly and therefore either hire a local consultancy firm to act as agent on their behalf in the tendering process or contract with a local supplier. The third-party approach reduces the competitiveness and affects the outcomes of the procurement cycle in terms of both quality and price.

In the legal context, the bureaucracy presents legislative and operational challenges such as a preference for local suppliers. Some clauses in the paperwork are not related to medical devices nor support the procurement of MDEs. The lack of coordination and communication is a problem and political actors support Saudisation in order to support the local companies.

However, when there is no suitable local supplier international suppliers are invited to bid. This hinders competitiveness and suppliers may charge up to 20% more than an international vendor would charge elsewhere. The conditions, regulations; and technical specifications are not clear because the Ministry of Health changes the requirements abruptly, resulting in poor market competition and no expectation that the buyer will get value for money.

These political and regulatory challenges creating the preference for local companies deprive the market of competition and transparency. The capacity and resources of the local suppliers cannot meet the demand efficiently. The ambiguous law and the protectionism result in information asymmetry which creates confusion over what is required, how much, and what specifications it should meet. The uncertainties of the demand significantly affect the suppliers, while the government reserves the right to change the demand and reduce the contract commitment to 50%. The lack of market knowledge and organisational culture has a significant effect on the procurement cycle.

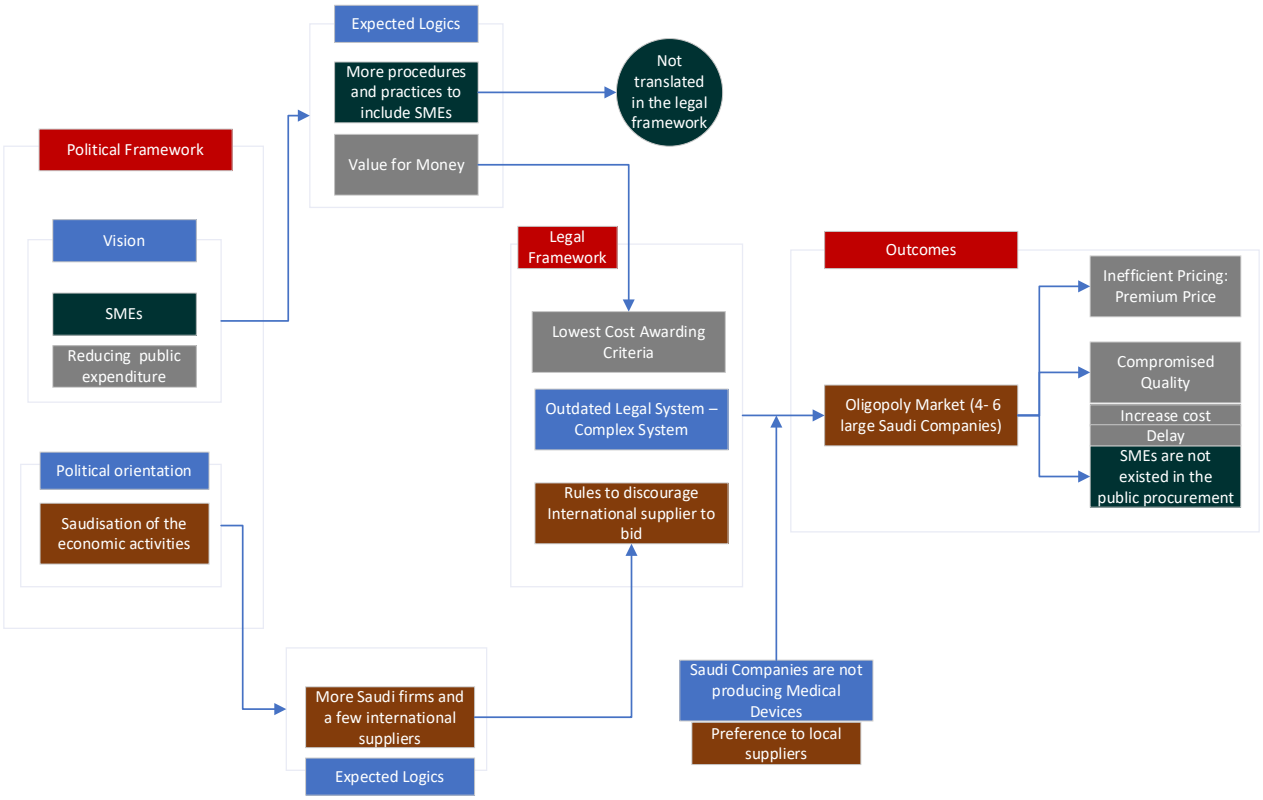

Figure 6-6:The role of the Political and Legal framework on the Saudi Public procurement outcomes

6.7 Theme 3: Public Procurement Process and Practices according to legal guidelines

Three types of procurement method are used in Saudi Arabia – public competition (general procurement), direct purchases, and specific purchases.

The procurement under direct purchasing is limited to contracts worth 500,000 ryals for country regional hospitals and one million, authorised by the Ministry of Health. Any contract exceeding this threshold must be processed under general procurement competitive conditions and advertised through the e-tender procurement platform (MoF, 2017). A public contract can be awarded under one of the three procedures illustrated in (Table 6-2), this details the stages theoretically enforced by the legal framework for each procedure according to the thresholds in Figure 6-7. Further exploration, illustrating details of the current processes in practice, activities and communication amongst stakeholders will be presented in section (6.8).

Direct purchasing	This type of procurement can be used for any amount below 500000 SR
Public Procurement Competitions	The most used procedures in the Kingdom. The authorities must use the PPC for any amount exceeding 500000 SR
Specific Purchases	Specific purchasing is rarely used, and was designed for emergency and military procurement. It normally results from a royal decree

Table 6-2: Different procurement methods in Saudi Arabia

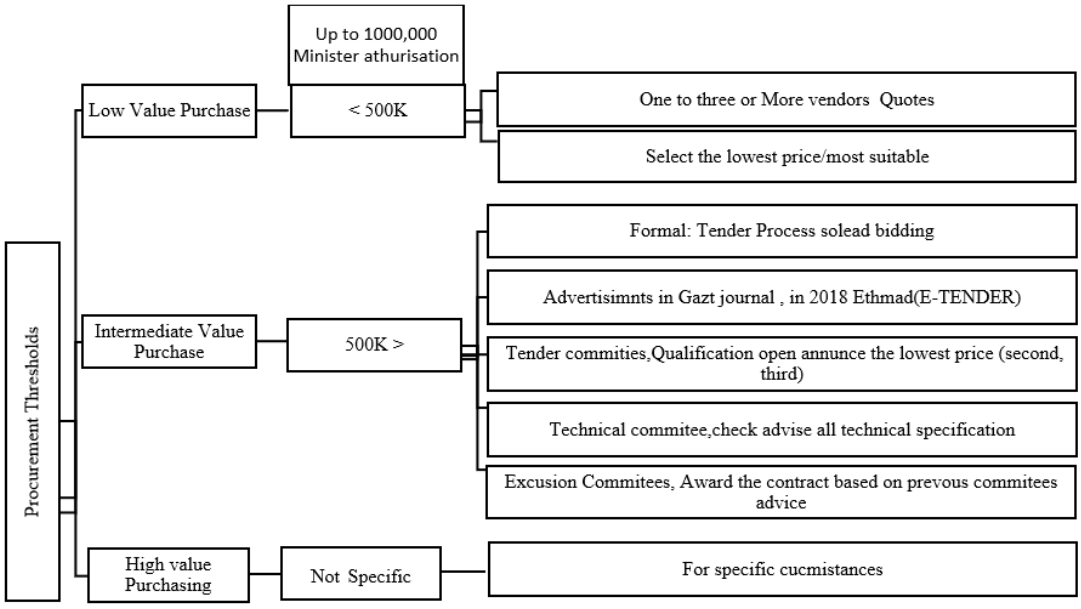

Figure 6-7: Hypothetical procurement thresholds and processes in Saudi Arabia

6.7.1.1 Public procurement and processes in practice

The procurement processes in Saudi Arabia traditionally go through three main phases following the international benchmark: pre-tender, where the procurement planning takes place; the tender processes, where the procurement plans are put into practice to select the best supplier for the project; and the final, post-tender, stage which contains the contract management, mentoring, and satisfying the initial demands. This study focuses on the pre-tender and tender processes. Before studying the steps of procurement communication in Saudi Arabia, the model of current practices is visualised in (Figure 6-8). The key point to notice at the pre-tender stage is that the process of planning is fragmented, involving many departments and actors . Key informants said they could hardly keep planning efficiently even with the use of technology (5.5.1.1); indeed, this only added more complexity by creating a shadow system. Furthermore, during the process and the award stage there are many departments and actors to get approval from. In the final stage the interaction moves to ministerial level, adding a further chance of delay and uncertainty between the Ministry of Health (MoH) and the Ministry of Finance (MoF). The diagram below shows the specific steps of the procurement communication activities. The key point to notice is that the processes is always more complex. At the planning stage various department and actors are engaged in communicating their needs and requirements than are needed in Ireland. Further, so many committees and players take part in the tender processes that the outcomes can only be poor. Thus, there are use of ERP system (see section 6.8 below) The processes still fragmented into extents that, procurement professionals cannot maintain the effectiveness and efficiency for the full length of processes between requirement to award, to achieve desired outcome .

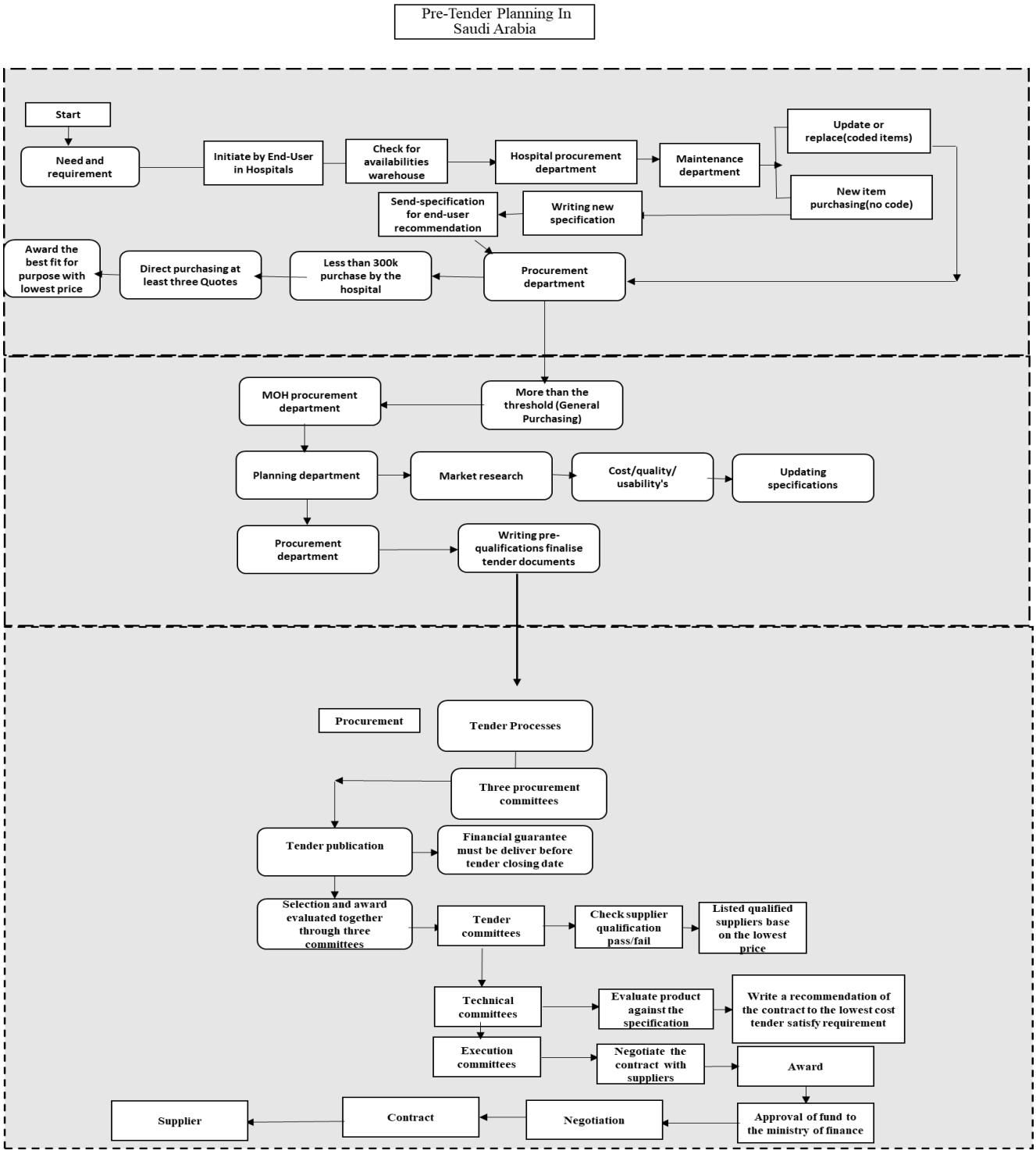

Figure 6-8:Detailed steps of the procurement processes in practice in Saudi Arabia

6.8 Theme 4: Procurement Communications

The fourth predefined theme is the procurement communications. They contain four emergent themes based on the stakeholder. As summarised in 6-9, the communication is with the beneficiaries (clinicians and administrative staff in the hospital), suppliers, sponsors, and third parties. Sponsors and third parties are added in this chapter because the funding approval in Saudi Arabia comes after the awarding decision. The third parties are included because suppliers in Saudi Arabia are not producers, and they import their supplies from a third party.

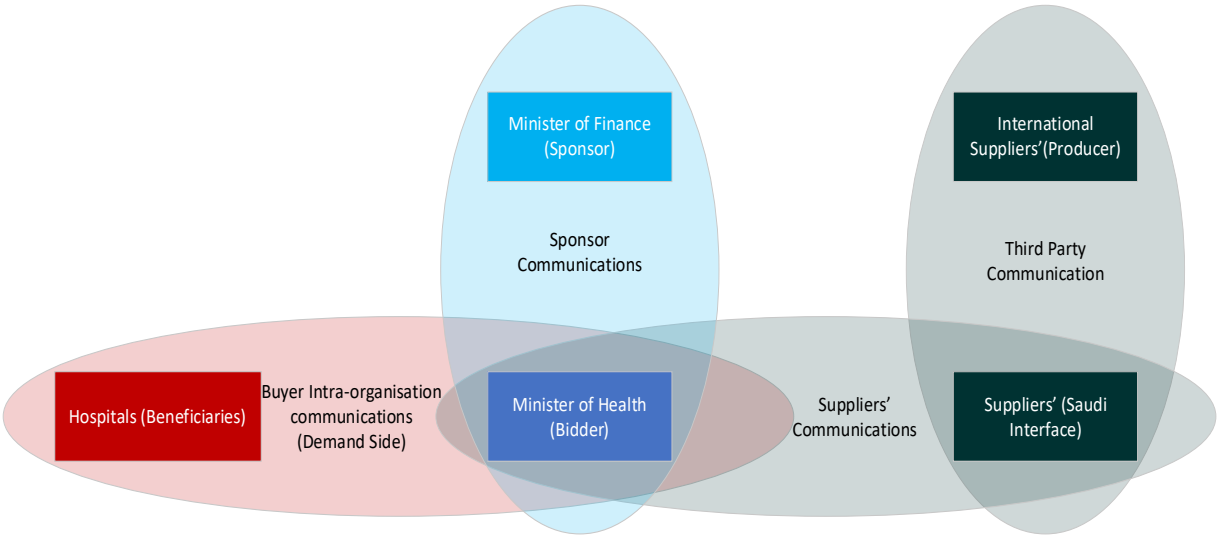

Figure 6-9:The role of the public procurement communication on the Saudi Public procurement outcomes

6.8.1 Emergent Theme 4.1: Beneficiary Communications

Beneficiary communications are defined as the communications within the health care service providers. This is mainly to define the health care sector's demand for supplies of medical devices. The demand process is triggered by the clinicians and administrative staff in the public health providers' units. As summarised in figure 6-10, they send a request document for the needed items to the Procurement Department of the health service provider. If the items do not exist, or constitute a new purchase costing more than 500,000 SR, the Procurement Department will issue an external request form to be approved by the confirming medical administration and signed before submission to the Minister of Health Procurement Department.

If the products exist on the Enterprise Resource Planning (ERP) databases, the communications will be clear and efficient. If not, shadow communications (i.e., the use of alternative methods) will be used. The processes are standardised consist of multiple steps

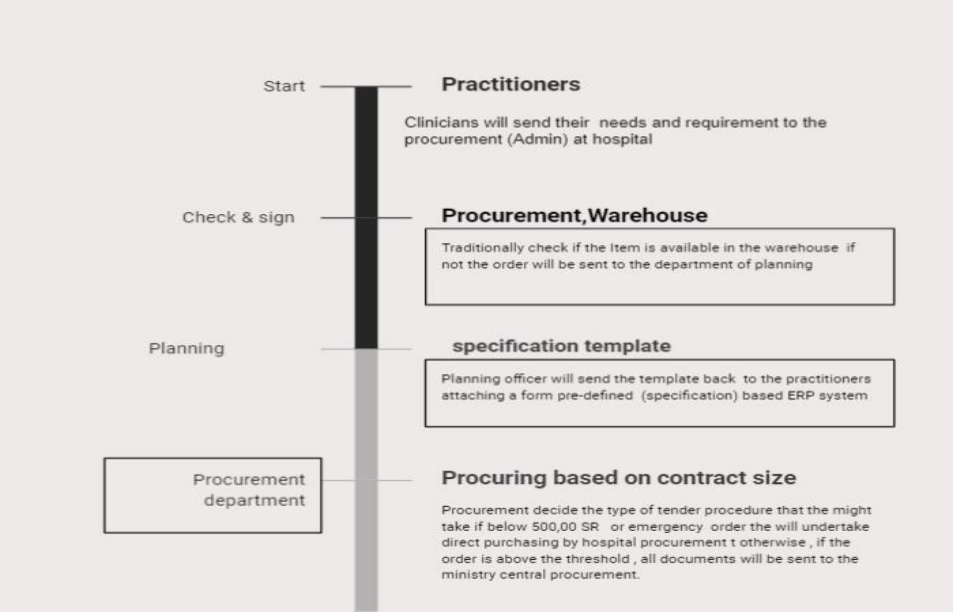

Figure 6-10: Demand analysis process MOH source (Author)

6.8.1.1 Automated Communications: The use of ERP systems

The communication between the clinicians and administrative staff in the hospitals and between the hospital and the Ministry of Health is automated with the use of the Enterprise Resource Planning (ERP) system. The internal requisition is an electronic form submitted by the clinicians to the Procurement Department to fulfil the order if the inventory item is available. If the price is below the government threshold, the Procurement Department at the hospital can buy it directly. If not, the Procurement Department can submit the external purchase requisition through this ERP system. This ERP is called "Mawared" which means "Resources" in Arabic .

> "*Enterprise Resource Planning (ERP)", called system "Mawared", is used for demand management and it links various departments, for example, clinicians, the Procurement Department at the hospital and the Ministry of Health"*. CBP6B Procurement planner

The requisitions process is regulated by an ERP system that automates and standardises it. This standardisation has pros and cons. In its favour is that it prevents mistakes in the products and their definitions (i.e., codes), ensures compliance and speeds up the processes. Its shortcomings

result mainly from the outdated databases in the ERP which cause the service providers and government to look for alternative communication channels.

Theme	Sub theme	Outcomes
ERP system (Automate Inter-organisation communication)	Positive: communications between the beneficiary (i.e. healthcare service provider) and the sponsor (i.e., the government) are mistake-free and efficient.	Efficient procurement (clear tendering, straightforward communications)
	Negative: the database has not been updated, and many aspects are outdated which causes the procurement specialist to use a ***shadow system*** of communications	Tendering with no suppliers can result in bids with outdated specifications (harsh requirements)
		Inefficient procurement (Mistakes and Duplications)

Table 6-3:The outcome of the use of ERP systems

6.8.1.1.1 Standardised Mistake Proof-System

The developer and analysts of the ERP system developed it to be mistake-proof. In other words, it does not allow the practitioners to change the items or their specifications. This point was developed on the basis of the legal framework to ensure compliance with regulations, standardise the process, and save time by not writing documents. Thus, since all the items are predefined and cannot be edited by the practitioners (clinicians or procurement specialists) manipulations or mistakes can be avoided.

> "*The planning and materials department manages over 30,000 categories and coded medical supply items or products. All of these items are documented, and pro formas are ready to process certain requests. This may work with standard products, but not with high value items that are critical for health. We need the latest technology to save lives and cost, and cannot depend on merely just compiling previous codes and categories"* CBP 13 Department lead radiologist.

This mistake-proof system does not allow for users to update or change the products or specifications, which gives them the challenge of accepting whatever products are listed or else using an alternative approach (i.e. a shadow system)

> "*there is a communication problem as clinicians and practitioners are looking for modern/new technology. These databases have no flexibility or no ability to change anything in them, so we would use traditional processing which needs a tremendous effort, or add conditions to ensure quality. The people's voice at the operational level*

rarely gets through to the top level of the Ministry of Health authorities". CBP5B Procurement specialist

"Only central procurement, namely the Planning Department, is authorised to modify and update the specification. What happens is that every four years the Ministry of Health assembles a committee of many stakeholders (e.g. end-users, procurement, maintenance team, biomedical engineering), to update the specifications but unfortunately, this committee is does not represent all clinicians' needs, and either they are overwhelmed by the number of items on the system or there is a shortage of skills. I say that because many coded items on the system do not reflect the real market and the changes in the technology of medical devices"CBP3B Procurement manager (Hospital)

6.8.1.1.2 Outdated Databases

Although this ERP system automated the process which should have made it perfect, it faces a vital challenge to perform as expected. The requisition forms are highly standardised and based on certain codes which have not been updated for the last 10 years. Indeed, this ERP has switched from a blessing to a curse because items that are not coded have to be requested outside the automation process and the manual system does not function well due to the reliance on the ERP.

"There is an existing specification, but the database managed in the planning department is out-dated and some codes were written by the Saudi-American collaborations in the 1980s. Procurement just fills requests in without a frequent update". CBP11B Procurement officer

"The procurement cycle is long and the MDEs we acquired are old technology because the specifications were written many years ago". "CBP19S government relation

"old categories and available specifications give the officials an excuse not to search for new alternatives. The procurement official, instead of gathering information about the market, fires into the sky forcing many terms, conditions and clauses to back up their weak analysis…and this the only way to explain why they sometime end with only one qualified supplier or none". CBP14 sales manager

Moreover, because of the use of outdated codes which can be irrelevant to the changes in the market, the bidding becomes irrelevant, and no supplier can offer products based on these out-dated specifications.

"if you look at the specifications given in the e-tender you can see that not much is known about the market, not many suppliers exist in the market for the product required, or even if this product exists". CBP10 S small business owner

6.8.1.2Shadow Communications: Fragmented System

The manual shadow system was developed to deal with the issue of old outdated databases. As illustrated in figure 6-11, The shadow system is defined as an alternative evolutionary management system that replaces the pre-defined electronic structured system because the electronic system does not fit the actual needs and practices. This system is characterised as self-developed and leads to a fragmented bureaucratic system stifled by red tape. The use of the shadow system has two notable outcomes: mistakes and duplications. The next sections will detail them in turn.

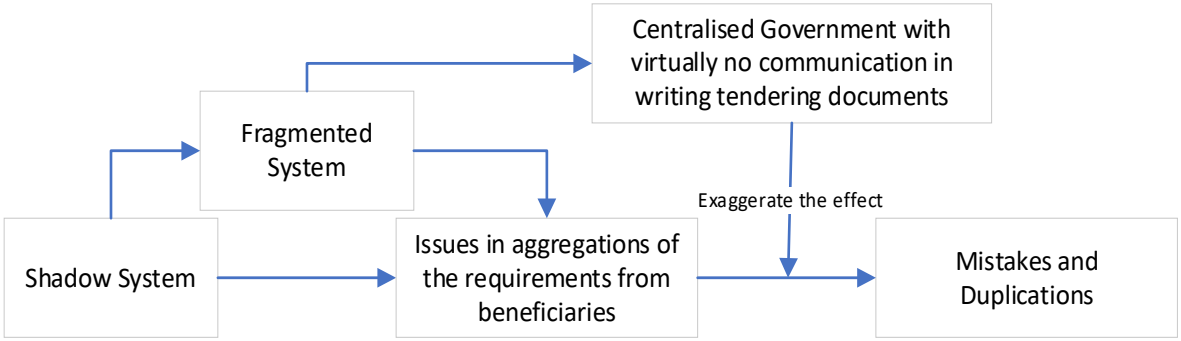

Figure 6-11: Shadow System communications with beneficiaries

6.8.1.2.1Outcome 1: Mistakes

This shadow system is prone to mistakes and issues because the procurement system is not designed to fit it.

> *"there is a gap in terms of the information available for the product and the expectations of the clinicians and procurement". CBP4Sales manager*

Besides, in Saudi Arabia, it seems that the centralised government conducts the least possible communication with beneficiaries. This creates a fragmented system which challenges users by encouraging mistakes in delivering the materials. The key participants reported that hospitals send demands to the GCC joint purchasing departments (for high value items) three time a year but, because of the fragmented governance framework, the orders overlap and mistakes or discrepancies are created. It has been noted that some hospitals receive too much while others receive too little of what has been asked for. For instance, CBP4Supplier cited the example of two regions, called A and B. He added that

"*region A had a population of 5 million and region B a population of 3 million. When the items arrive, region B has more items than region A or region B may get double the amount that it ordered, and region A gets less than it actually needed"* CBP4S Sales manager

"We cannot reject the items because the contract has been signed for specific products. The time period present technological constraint on the public sector health procurement because the product we received is already being used in the private hospitals and they are giving away the same devices for charity." CAP16Buyer

"An MRI machine was required by the radiology department of (Hospital name) which could not move patients into different positions to get the best image, while the same time the 'Alhabeb' private hospital had taken this machine out of service replacing it with a new machine that takes the best image without moving the patient". CBP13 P Department lead Radiographer

Another supplier underlined the shock felt when a contract for 4 million SR produced only content worth half this amount.

"*in 2018, we won 4 millions worth in SR contracts but at the end of the day, we were delivered only a half of the products listed in the contracts".* CBP1S Regional sales manager

A case from tender documents highlights that discrepancies can arise in terms of the quantities of a niche diagnostic device used for rare health conditions. The cases of the larger cities, Riyadh and Makkah, compared with smaller cities, such as Tiaf and Aljof, bring up significant miscalculations and variations. The actual deliveries reveal that the smaller cities received more items than the large cities did, as shown in (Table 6-4)below.

City	Quantity of Items
Makkah warehouse	1728
Riyadh warehouse	2096
Aljof hospital central storage	3456
Tiaf hospital central storage	288

Table 6-4:Source adapted from documentation obtained from (MOH)

6..8.1.2.2. Outcome 2: Duplications

The shadow system creates contradictions due to challenges in adding together the requirements from different beneficiaries, which creates duplication in the event, even when the current governance model is centralised purchasing; but it is worse when each unit tries to work independently. The hospital chooses to buy directly without waiting for the bidding completion or delivery from central departments.

"Each department have its own way of ***buying things,*** *I know a few hospitals waiting for items to be delivered from the Ministry of Health. When it takes too long they split the contract instead into three or four small pieces to bring the cost below the thresholds and buy them directly, and forget to cancel the order. Then they receive double the number they actually need"* CBP9 S General manager

This practice of making a direct purchase while the bidding process is going on is noted several times in the interviews and seems to be a serious issue because of requesting too many items at once. One of the lap managers indicate that.

> "*We order a critical MDE from GCC or MoH Procurement Department, there are delays by both parties so, if they are late and we need the item, we send a cancellation request and order the essential product through direct purchasing from the hospital. When the cost is over the threshold we split it into two orders or get regional permission to buy this product because it is urgently needed for our operation, the procurement staff duplicate the order somehow either by failing to cancel or finding it too late to cancel. If we got the order duplicated, we should either just send it back to the suppliers, but it is already paid for, so it ends up in the warehouse".* CBP13 Department lead Radiographer

6.8.2 Emergent Theme 4.2: Supplier Communication

The second stage after consolidating the requirements and needs from the hospitals, is that the MoH writes and communicates the tender publication. As summarised in Figure 6-12, the key regulative principle is transparency. This transparency is translated into forbidding communications with suppliers in writing the tender documents and minimal communication after publishing it.

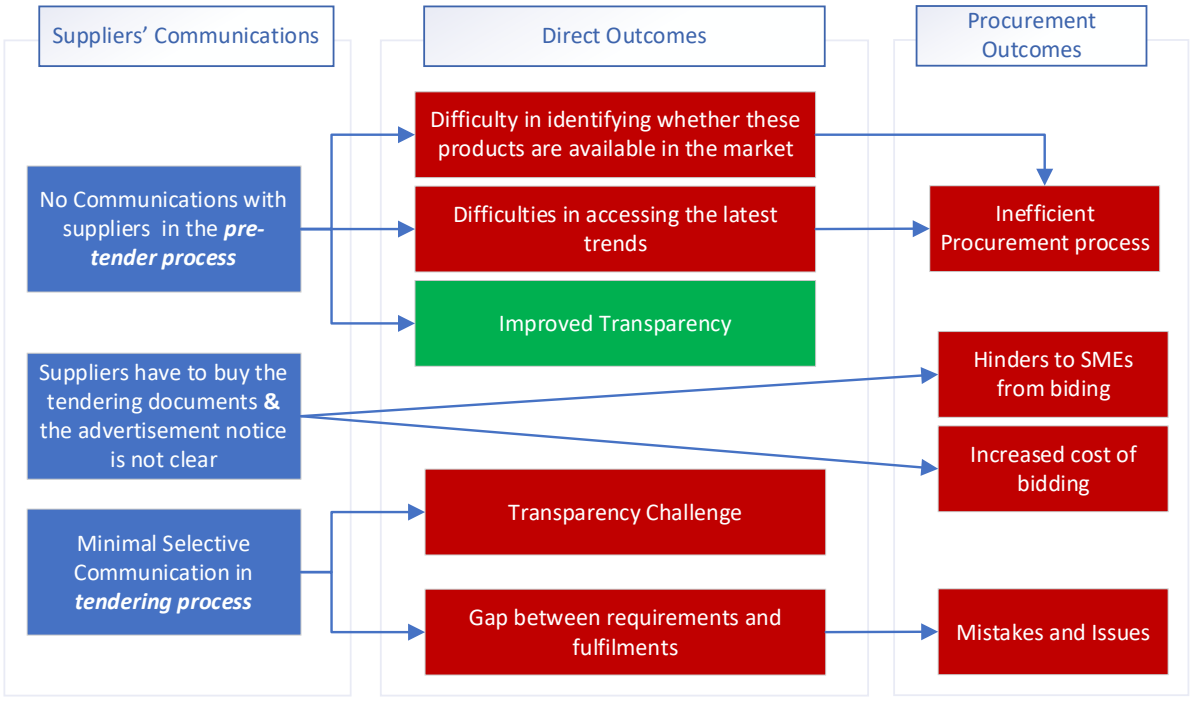

Figure 6-12:Supplier communication source (Author)

6.8.2.1 No communications in the pre-tender process

The first emergent theme noted in the communication between the supplier and the government is "no communication in the pre-tender process". In writing the pre-tender documents (for a

new product or to update the tender documents) the MoH relies on consultants and historical data but takes no advice or consultations from suppliers in the market because they perceive it as risking a conflict of interests or corrupt behaviour.

> *"The Ministry of Health does not involve the suppliers but rather hires consultants*." CBP2B Tender officer
> "*Medical devices procurement specifications and requirements are designed internally without involving suppliers and other stakeholders and our role is advisory. At the pre-tender stage the supplier's involvement is needed to help us to make the right decision at the evaluation stage, by reviewing their offers". CBP17B first procurement officer*

Although this procedure is taken to protect transparency and eliminate the chance that suppliers might intervene in the writing of documents, it is perceived to have two negative outcomes. They are the difficulty in accessing the latest advances and also the inability to identify the market's capacity to provide the requirements. Some buyers see this is a challenge.

> *"it becomes a difficult process and is based on uncertain information about the suppliers' capabilities in the market or even missing innovative latest advances in the market which might reduce cost and enhance quality in the long term". CBP*16B Planning officer

A similar observation from the supplier is hat the government, on some occasions, writes the tenders in a way that is perceived to reveal a "lack of knowledge about the market" and the capacity of the market to provide such products and also limits their capacity to learn about the latest innovations in the market.

> *"If you look at the specification given at the e-tender you can see that there is a lack of knowledge about the market, and the alternatives in the market to the products required*" CBP12S-tender and government relations director.
>
> *"They do not know how many suppliers are in the market in our line of business, and they just make their judgment at the evaluation stage, changing the requirements and negotiating price and quality". CBP18S Senior contract manager*

6.8.2.2 Tendering Documents are not free

The second theme emerged in this study is that "tendering documents are not free"; their cost can make it more difficult for SMEs to afford to access this market. The e-tender is used to publish all tender documents: it encloses item codes, product descriptions, quantities, and other commercial considerations. But access to them is not free. It costs the supplier sums ranging from 5,000 RAS to 20,000 RAS, which are not refundable. The information available in the advertisement (the contract notice) is not sufficient to let firms decide whether to take the risk and buy these documents.

> *"the information in the contract notice is not enough to give you an idea if it worth it to buy the tender document*". CBP14 sales manager

Potential suppliers have to buy them to get access to the details they need to make the right decisions for bidding.

"*the e-tender documents do not provide enough information on bids and to reach a decision, there is a need to buy technical document that cost money. Once requirements are on hand, then it is evident that "we can or cannot meet their requirement in one way or another".* CBP1S *(Regional Sales manager)*

"For instance, a recent tender has 20 items (they only publish the item codes with no further details) and we were in need of information to know whether to bid for tender. I sent inquiry via Etimad and four days later the answer was you have to buy the requirement document to get access to the item's details." CBP18 senior contract manager

Indeed, affording these expenses can be a big challenge for SMEs and it increases the risk of applying to the join the bidding.

"I came across a few tenders. The tender notice does not give me adequate information about what they actually need; Is it worth it to spend more time searching? Or buying the requirement documents? I do not know". CBP4Sales manager

Some SMEs buy these documents together and share the cost. This can be a good strategy but also puts a strain on the other SMEs who are not part of these groups.

"We sometimes buy the documents, but we may not get the benefits against the documents' cost. We incorporate and join other small companies, to buy the documents when a large contract is at stake and bid together as one company. If we win we will deliver the contract together, that's the only way to be part of the market" CBP10S small business owner

6.8.2.3Minimal Selective Communication approach in the tender process

The third emergent theme is the style of communication in the tendering process. In this case, the style is labelled "Minimal selective communication" in which the government does not want to communicate with the supplier and if communication exists, it is perceived to be not equal.

"*The biggest problem that I can see is if there is no communication with suppliers unless a problem starts up and then we can communicate to solve the problem" CBP16B* Planning chief officer.

According to four suppliers, in the tendering process, the communication is mostly 'push' with a subjective selection of who to reply to. There is evidence that the government does not reply to all emails on inquiries and the reply approach is one-to-one, not one-to-many, as in Ireland.

"In the past I have been sending emails but no response. In 2018 we contracted with (company name, based in Saudi) then the company representative could walk into the Procurement Department and ask for whatever information was needed, either cultural or about corruption" CBP7 Regulatory affairs and tender manager

" aspects such as specific item inquiries as well as the financial guarantee which needs to be sent in person". CBP2B Tender officer

"*communication by the Procurement Department lacks clarity because a supplier has to send a representative to 'The Ministry of Health' with an MDEs inquiry"* CBP4Sales manager

The two main outcomes here are the transparency issue and the gap between requirements and fulfilment. Indeed, first, as an unintended consequence, some suppliers perceive this challenge in communication harms transparency and is perceived as unfair treatment.

> *"the representative approach is opposed to equal treatment and transparency principles. The procurement officers … ". CBP12S* government tender and government relations director

The system should be transparent by law, but the government communicates with suppliers using the "representatives" approach. It is perceived by some suppliers and beneficiaries to carry the possibility of unfair treatment,

> *"there is always preference for specific companies, and they will prefer to keep it national rather than to go international. That hinders competitiveness. There is a lack of accountability and transparency because department have communication and organizational preferences, it is really difficult to travel, lets say, from Jeddah to Ryadh for a piece of information, leadership and administration have a rooted culture. The information should be shared if they are intending to develop".*
>
> *"Thus, the information and communication raise concerns for transparency". CBP6B procurement planner*

6.8.3 Emergent Theme 4.3: Sponsor Communication

The case is different from the Irish one, because there is a need to communicate with the Ministry of Finance after the contract is awarded. The Minister of Finance (the sponsor) may accept, reject or ask for an alteration to the contract.

> *"the budget is not located before the tender award and the total cost of ownership is calculated after the award of the contract. The late cost estimation means that they have to wait to get the approval of the Ministry of Finance which exposes suppliers to uncertainties. There are cases where the contract is cancelled after we have won the tender, we only trust what we see on the final contract*". CBP1S *Regional sales manager*

This practice creates two main outcomes: delays in the procurement process and partial contract issues.

6.8.3.1 Outcome 1: Delays in the procurement process

The first outcome is the delays from the government in giving final approval. The delay comes because the Minister of Finance has to approve it only after awarding the contract. The average time from sending the award documents to the decision of the Minister is six months according to participants' observations. This issue may invalidate the offers made by the suppliers.

> *"There is a huge problem locating a budget before the tender commences which directly impacts on the tender procurement processes and outcomes between four to six months later.*

I think they never show the estimated cost of a project, they review proposals and set up a request for a budget". CBP4 Sales director

This indeed could make suppliers change their offers or even cancel the bid

We give a fixed price for a maximum of six months. If they exceed that we cannot go ahead with the contract competition. One of the reasons is that suppliers are concerned about fluctuations in the price of the raw materials, or if the contracting manufacturer's company has failed. So if we want to extend the offer, we will make sure that our providers are still in business (CBP4,Sales director).
The price is set with the conditional quotation that if the project is delayed for more than four months this price is no longer available, and if supplier is still interested, they may renew their financial guarantee to be evaluated (CBP8 senior buyer analyst).

6.8.3.2Outcome 2: Partial Contracts

The sponsor may decide to go for partial contracts instead of accepting the full contract as in the tendering documents. This could extend the negotiation time because the scope of the work will be reduced. Since most of the bidders are third parties, the ability to negotiate the price is limited, especially when the value of the work unexpectedly goes down to a significant lower level. This leads to a major issue, a delay of contract or re-tender, when the level of communication between many parties begins to involve, for example, government departments (the Ministry of Health and the Ministry of Finance) and, on the suppliers' side, manufacturers or contractors, local or third-party contractors.

"The total cost of the project is calculated after the award which is then sent for budget approval by the Ministry of Finance. When the finance department could not agree on the price, they offered a reduction, cancellation or delay of the project or even negotiating the price with their suppliers" CBP14S sales manager.

The suppliers' price is based on the quantities, as published in the tender. However, when the order is reduced by up to 50%, it presents a different scenario for the supplier when one of the conditions of the contract changes, according to the documents reviewed.

"In case of cost issues, the price can be negotiated. If the price cannot be reduced, the supplier will be awarded withhold of the contract until we get a budget approved. If the amount approved by the Ministry of Finance is less than the amount awarded, we could pull out of some of our technical requirements, but if pulling out of some factors may impact on the functioning of the devices purchased, the whole contract might be cancelled". (CBP2B Tender officer).

6.8.4 Emergent Theme 4.4: Third party Communication

The international corporates will not have direct access to the MDEs markets and they will not have direct access to bidding information, as detailed in section (6.5.2). They have access through their agents and the signature power and commitment will lie with these agents. Indeed, as noted by the local suppliers, most of them are facing challenges to set robust

communication channels with their external agents to ensure the free flow of information. Thus, the local suppliers do not have timely information about the manufacturing price; in reaction to these uncertainties, the cost quoted to the buyer will be valid only for a certain period.

> *"The third party reduces the competitiveness and outcomes of the procurement cycle in terms of both quality and price. Our company deals with* ***a contractor in Saudi*** *which reduced risk, the procurement contract was unstable, the local contractor has taken all legal challenges, administration work, payment, etc.". CAP4Sales manager*

In normal cases which are stable, the times for communication between the supplier and the agent are limited mainly to before the bidding time and at the time of delivery. However, in this research, the awarding process is not described as straightforward, in line with the supposed processes, because the authorisation of the fund comes after the awarding of the contract. i.e., after winning the bidding, the contract has to be financially approved by the finance department, which can generally change it in terms of the timing of the delivery and payment terms. This could lead to negotiation between the government and the winners of the contract. These negotiations can take months because the international suppliers are not invited to the negotiation table and a third party communicates with them. Furthermore, the sponsor may pay long after the contract has been delivered, which indicated by some suppliers is shaking people's trust in the government system.

> " … *Distrust of government contracts as many changes may accrue at any phase of procurement or after the signing of the contract for example. After the contract is signed, the end user may receive the first batch of the contract items and cancel the rest, which puts the local suppliers into unwanted difficulties with their providers. The local suppliers pay the international suppliers and wait for government payments for at least six months; this can be very challenging for small suppliers"*
> CBP15 C ministry consultant and former director of Procurement Department

6.9 Model 2: The influence of Communication on the Public procurement outcomes

There are four channels of communication showed on model 2(Figure 6-13). They are communication with the beneficiaries (clinicians, admin, the central department at the MoH), with the sponsor (MOF), with suppliers (international) and with third parties. The communication with the beneficiaries is supposed to be fully structured and automated because of the use of the ERP, which reduces mistakes and make the process of understanding requirements easier and faster. However, the database of the products (i.e., codes) are too old to be used which obliges the clinicians either to choose among them or to use the shadow system. In the shadow system, the communication with the Ministry of Health is manual and

no database exists to pool the requirements which makes the process vulnerable to mistakes and duplicated orders.

The second channel of communication is with the Ministry of Finance (MoF). The MoH has to communicate with the MoF after awarding a contract and before approving it. This process can take 6 months which adds huge delays to the procurement process and may invalidate some of the quotations. The MoF must intervene here to approve the budget or to alter the contract to fit with its budget. Thus, suppliers may find themselves forced to accept partial contracts (i.e. 50% of the scope of the predefined work). This extra uncertainty may affect the supplier's ability to perform in this market or, as observed, may add to suppliers' distrust of government departments.

The third communication channel is with the supplier. First, no communication is allowed with suppliers before the tender, which could make the tendering requirements unaffordable in the market, or they might be outdated and not produced by anyone, or the users might miss new technologies available in the market that could serve them better. Second, the tendering process allows minimal preferential communication i.e., the MoH does not reply to all emails and prefers personal contacts, which is perceived to risk a breach of transparency. Besides, this minimal communication approach may leave normal suppliers unable to understand the requirements, which could affect the cost. Third, the tendering documents are expensive for SMEs, who cannot recoup the cost; this puts the SMEs at a disadvantage because they cannot afford to buy them.

The fourth communication channel is with the third party, which is critical because the Saudi market is a major importer. The Saudi supplier is reliant on this third party for delivering the procurement contracts. Because the MoF may change the contract, the negotiation time and cost could be significant and affect the efficiency of the process, trust in the government data provided and speedy delivery times.

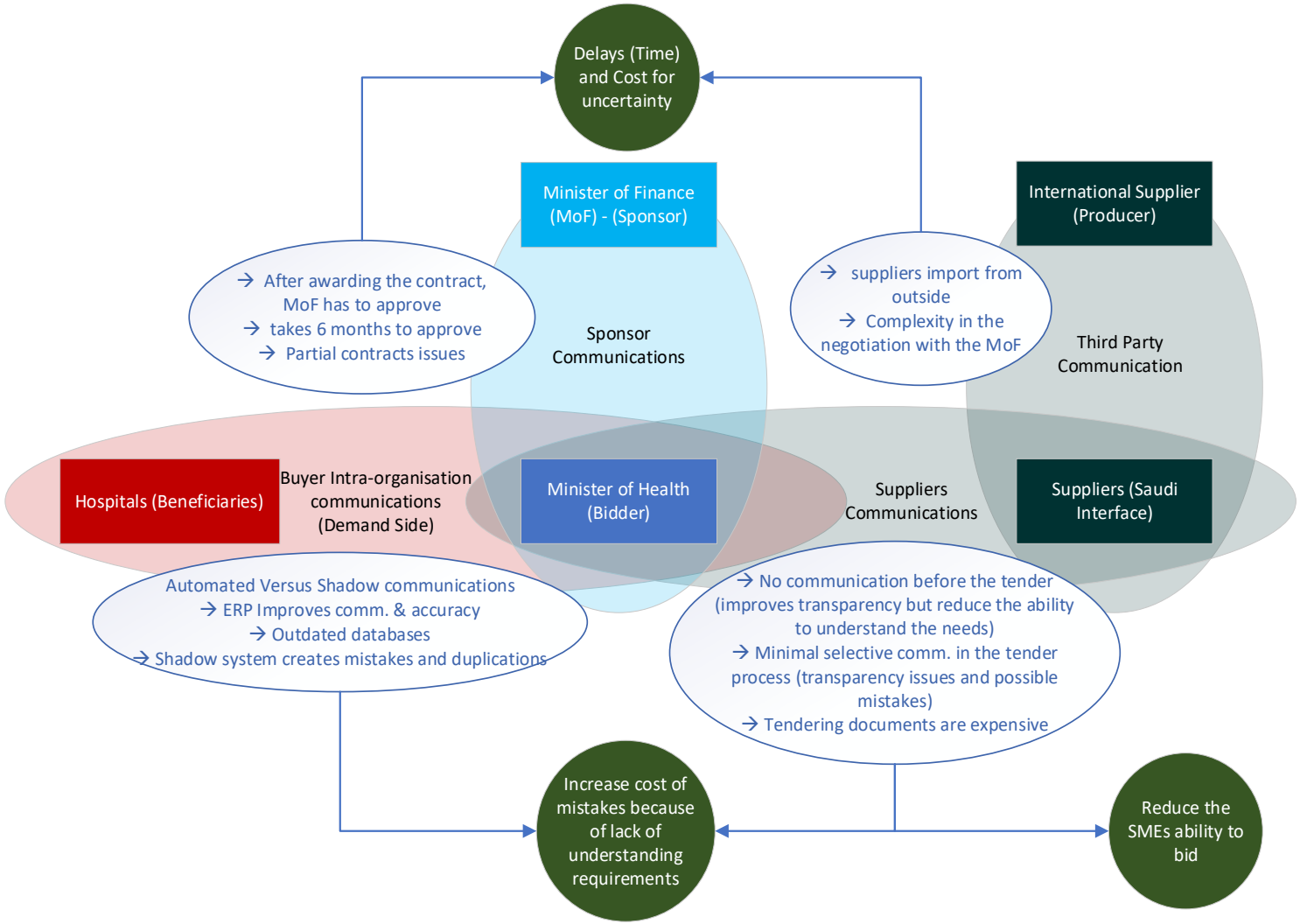

Figure 6-13:Model 2: The influence of Communication on the Public procurement outcomes

6.10 Theme 5: Selection and Evaluation Process

The fifth theme in this study is the selection process. Once the suppliers have submitted their bids, there are two main aspects to consider. They are selection of a supplier and the awarding criteria.

> "*in the KSA, the procurement is a two stage process and the first stage involves strict qualification criteria and lowest price."* CBP14 Sales Manager

The selection process takes two main stages/committees for selection and one for awarding (in this case, the work of committees).

> *"There are three committees that evaluate the bid, and they are called tender committee, technical committee and executive committee"* (CBP3B Contract manager).
>
> *"the bid evaluation is performed by three committees"* (CBP2B Tender officer)

The supplier selection and evaluation depend on three committees (Figure 6-14). The first committee evaluates the price and qualifications of suppliers; the second committee reviews the technical criteria to ensure that the supplier products meet the technical specifications and recommends the products that qualify and their supplier; and the third committee reviews the overall process, and awards the contract; however, the budget has to be secured by the Ministry of Finance before the negotiation and contract .

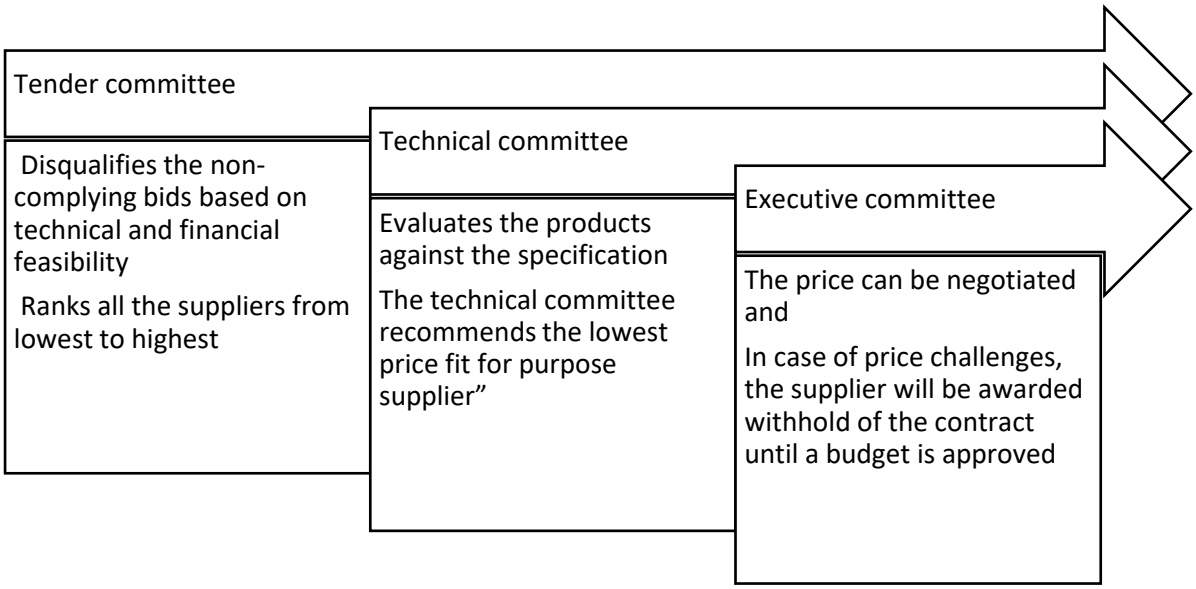

Figure 6-14:Evaluation and Award committees

The selection and award activities which involve three important stages of supplier selection are pre-qualification, technical performance, and price proposal. The pre-qualification ensures that the proposal meets the minimum standards and the bidder has the capacity to deliver the MDEs within a defined type and value. The technical performance ensures that the specifications which provide the basis for competition include usability, reliability aspects and quality. The price proposal is that the cost criterion includes the total cost, made up of the cost of supply, installation, maintenance and after sales service for up to five years. From the buyer's perspective, the supplier selection for MDEs is price driven but no price is considered if suppliers do not satisfy the pre-qualifications and factors such as delivery, suitability, availability and the after-sales warranty are important. The evaluation activities linked performed by each committee is represented on (Table 6-5) below.

Step	Committee	Activities
1	Tendering Committee	Qualification (Suppliers) Ranking proposals by price
2	Technical Committee	Evaluation and defining the lowest accepted 5 tenders
3	Executive Committee	Taking decision to award Forwarding the total cost to the Minister of Finance to authorise. Negotiating with the supplier after the limit of the funding is determined. Awarding the contract

Table 6-5:Selection and award activities

6.7.1. Tender Committee

In stage one the suppliers are filtered according to certain predefined criteria (pre-qualification) and the bids are ranked by total cost. The first step is to ensure that suppliers who have bid are aligned with the regulations and requirements such as FDA, the CE mark and SFDA requirements, the use of technology and scientific certificates, together with a due diligence report. Moreover, there is a requirement that 1-2% financial guarantee is required to be deposited with the bid (MOF, 2016). The pre-qualification ensures that the supplier/bidder complies with the general qualification criteria such as financial and regarding general technical capabilities and human resource capacity. The goal is to ensure that the bidder has the technical capability to deliver the MDEs of the type and value advertised in the tender. CAB 1Buyer stated that.

> *"The pre-qualification criteria are uploaded to the e-tender to ensure that the supplier is financially and technically capable of delivering the product and services, as well as*

having a Saudisation certificate and other commercial and technical certification, such as SFDA approval"CBP19.

"No contract is signed on the basis of price only and it is important that qualification criteria are met, as well as assessing terms and clauses against specifications.[Even when] we award to the lowest price the quality of delivery and other aspects are guaranteed; we cannot simply award to the lowest price without other factors". CBP5Buyer

The second task is to rank the suppliers by the total cost of their bids, announce it to the public and submit the ranking to the technical committee. The price proposal includes the cost criterion for the total cost, which includes the cost of supply, installation, maintenance and after sales service for up to five years.

"The committee will announce the lowest price bidders listed in order but that does not mean they all win the tender". CBP19 S government relation manager

"the suppliers are listed from lowest to highest, i.e., the lowest bid is first in the list to be evaluated by the technical committee". CBP5B Procurement specialist

"*the cost criterion includes the total cost which includes the cost of supply, installation, maintenance and after sales service for up to five years. There is a detailed list of requirements that break down the requirements such as staff training, device part cost and the maintenance cost after the years of the warranty have expired"*. CBP11B Procurement officer

" bids are ranked according to price, i.e., lowest price to highest price after pre-qualification. If bid is ranked lowest, second or third, then you are in position to be awarded but there is no certainty because three committees examine the tender specification, and we never know until we sign the contract". CBP4Sales director

There is also a requirement disclosed in the tender document to submit the costs on a sheet showing the breakdown of these costs.

"*The Procurement committee request suppliers to send a total price offer along with a sheet breaking down the cost for each aspect of the contract requirement".* CBP3B procurement director

6.7.2. Technical committee

The technical committee receives the list of qualified suppliers and inspects the technical offers with the lowest prices. Only those among them that meet the technical requirements proceed to the executive committee.

The technical committee recommends the lowest price fit for purpose supplier … The report is prepared by the technical committee and reviewed by the executive committee for the final decision" CBP17B first procurement officer.

If the products are complex and high in value the selection may require the equipment to be demonstrated/tested following installation on the procurer's premises. During the process, the panel looks at many aspects of the technical offers and chooses the most fit for purpose, with a recommendation to offer the contract to its supplier.

6.7.3. Executive committee

The executive committee deals with the information and assurance of the information from the candidate suppliers. The type of data collected and assured are summarised in Figure 6-15. The executive committee plays different roles according to the stage of the tender. Once the lowest two or three offers are accepted by the technical committee, the executive committee reviews and approves them and then sends a request for financial funding from the sponsor on Ministry of Finance, and negotiates on the basis of the available budget before drawing up the contract with the successful suppliers.

> "*The final committee reviews the overall selection process and recommends the tender award and budget approval from The Ministry of Finance* (CBP16B Planning chief officer).
>
> *"We sometimes take a few options to negotiate with the first and second suppliers on our list to reduce the price to match the located budget".* CBP5Buyer,

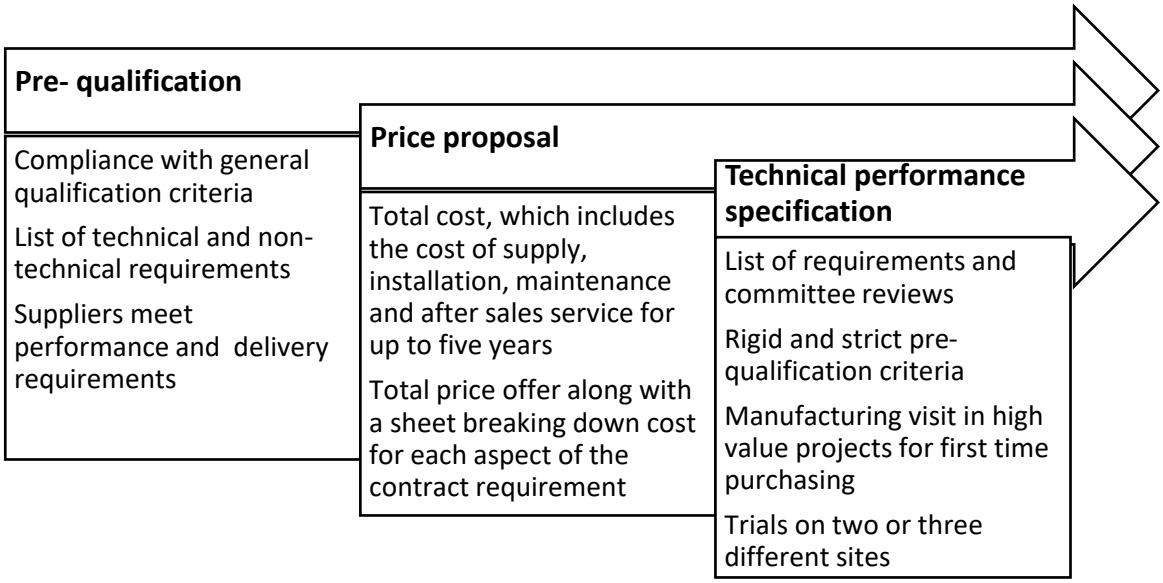

Figure 6-15:Executive committee

Technical committees may require to visit the manufacturers, mostly located outside Saudi Arabia. This is seen by key informants to cause delays, and may influence committees' decisions, expose them to corruption and add to the cost of the procurement processes.

> *"the practitioners visit manufacturers to check new entries to ensure quality. I even found that this covers somehow dubious behaviour. Some companies may offer complimentary trips, training and so on. I found it a waste of time and money as the SFDA must visit before a medical device is even permitted to enter the Saudi market. We are already certified for two years and this step does not add value to the contract. It is more like a vacation" CBP19 S government relations manager.*

6.11. Theme 6: Awarding Criteria

The Kingdom has no scoring methodology in awarding contracts but most of the procurement contracts are awarded on the decisions of three committees and based on lowest cost .To ensure a standard of quality, strict terms, clauses and conditions are enforced either through the standardised coded documents or through the shadow system which is added manually by the procurers. There is a clear recommendation written into the regulations and the law to award the work to the lowest bidder and the best in technical terms, and this suggests that the only criterion for awarding the contract is Lowest Price. Articles 21 and 37 state that if the bid committee accepts that the lowest price is achievable then they "must" recommend this offer, as long as the minimum quality requirements are passed (GTPL-MOF, 2007).

6.11.1. Emergent theme 1 - Outcome 1: Ignoring the high-quality bids.

The first emergent theme here is that the quality bids are ignored because the low-cost awarding criteria rules them out. This case is different from the Irish one in regard to the awarding criteria. While the Irish model adopts a scoring system and quantifies the quality and technical criteria, the Saudi one focuses merely on the price and initially evaluates only on matters of price. In the Saudi model, the technical committee evaluates the lowest prices that fit the pre-determined specifications and completely ignore the higher priced options. Figure 6-16 illustrate the selection and award procedures scenario from the bottom up . The procurement committee first selects the cheapest products, which least satisfy the requirements. The interviewees, however, see this as unfair: products of higher quality possibly offering better long-term value for money (e.g., quicker diagnostic devices, multi-task devices) are neglected:

> *" technical committees are not fair to not evaluate my offers, which are highest in quality and fit for purpose, at a price only a little higher, so at this stage they should evaluate all the higher quality products that are tendered. It might save money: more efficient technology may save the end users' time. One diagnostic device may be more accurate than the lowest cost one with lower specifications. There should be a value even on the size of a device. In the past you had to use many devices to measure blood pressure, temperature, respiration level but nowadays it is possible to use one device for all those functions with the same accuracy. Umm ... and of course the cost may be higher " CP13 Practitioners.*
>
> *"I have lost the bid on a number of occasions, despite the fact that I have a best quality product. Quality costs money, of course, but also, may save the cost of maintenance,, spare parts. They need to calculate benefits for the long run rather than short-time savings. We need just to open our minds and see more options and select the best, ". CBP4Supplier*
>
> *"I feel they should evaluate all suppliers and look for products that are more suitable for end-users and reduce the long-term cost, but also, when the committees, including the end-users, evaluate the best possible available product that does not mean we should get it.,*

*There is a budget to be located, and negotiated with the lowest price tender. If their price does not match the available funding we will negotiate with the second lowest price supplier " CBP15*C *Ministry consultant Former director of Procurement Department.*

The quality is considered as a binary system (Yes/No) which is based mainly on health and safety precautions or fitness for purpose. But these indicators are not evaluated in the scale.

"the focus of quality includes health and safety, and it is important that manufacturers should use high quality materials. For example, if we find the raw materials of medical gloves are of low quality then they cannot be used to treat patients, for health and safety reasons, which has happened before. So we added terms to our final document to ensure that the public authorities included quality in the processes, for example 'Products must not made of re-cycled materials', which you can see in this tender for gloves ". CBP17B first procurement officer

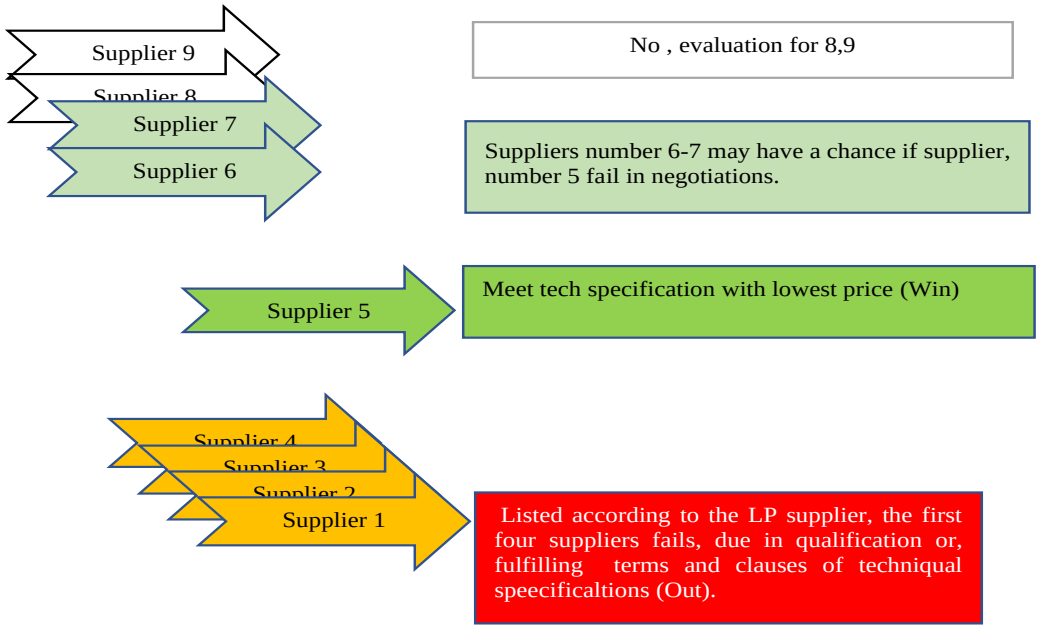

Figure 6-16: mechanisms which ignore higher quality products

It is obvious that any manufacturer who manufactures high quality devices or equipment will not be able to compete with lower quality manufacturers, because high quality materials and quality checks raise the price. Therefore, it is easy to see that the lowest price procurement puts quality on the second rung and is quite unilateral as an evaluation method.

6.11.2. Emergent theme 2 - Outcome 2: Suppliers are not motivated to improve.

This has major implications for the suppliers. They select the lowest quality to get the lowest price as long as the criteria are approved. The supplier has no motivation to strive for better quality or higher criteria. The only case for rejecting the proposal is quality so poor that it is not fit for purpose.

"there is no motivation to bring new technologies to this market. It is all about the price." CBP1S Regional sales manager..

"Challenges facing suppliers from Saudi FDA and procurement regulations causes confusion amongst suppliers. The tender awarding committee takes too long to evaluate, approve, negotiate and sign the contract. However, on the delivery day we cannot be certain that the delivered product uses the latest technology in the market ... these obstacles do not motivate us to act quickly and get the best quality available. Instead, as a consequence of these issues, we fight to reduce the cost of overheads". CBP4 Sales director

6.11.3. Emergent theme 3 - Outcome 3: SMEs ability to bid and abnormally low prices

Another problem associated with lowest price procurement is that abnormally low tenders are received. These should be limited to 25% below the estimated price, but according to the informants there are no real market estimated prices by which to judge which offers are abnormally low .An abnormally low tender carries a significant risk that the supplier or contractor may fail or may supply goods and services of poor quality. Bidders have to buy the tendering documents and they also have to put in a 1-2% deposit before the bidding process begins; what is more, the successful contractor is required to reserve 5% of the total contract amount as a bank guarantee (GTPL-MOF, 2007). In addition, other expenses may be incurred during the process, which discourages suppliers, especially SMEs, from taking risks and applying for contracts. This of course conflicts with the policy of preference for local SMEs and encouragement of their growth (6.4.2).

"your offer may be rejected, after you have paid out so much for bidding documents, registration, etc., because so many are offering an unreasonably low price and winning the bid. This is discouraging and frustrating". CAP14S Sales manager

"The company financially cannot afford it and few contractors can. I am paying upfront to the manufacturers, also paying the 5% financial guarantee which has to be reserved in the bank between the award and the delivery and fitting. And I must wait for many payments from the Ministry of Finance even months after delivery". CBP1S Regional sales manager.

"I bet that they have no accurate data on the market, as they rely on these old data on their systems. It would worth our while to ask suppliers to submit a quotation and select the best, taking the same steps that they take to award direct tender, or using private sector mechanisms. I think that may work better for both quality and price". CBP10S Owner small business.

It has been noted that there is no mechanism to protect bidders from those who give too low a price, as the law allows.

"there are many ways through which the contracting authorities can identify abnormally low tenders. This can be done through arithmetical methods. Usually in different countries a different method is adopted for identifying an abnormally low tender". CBP7S regulatory and tender manager.

6.11.4. Emergent theme-4 Outcome 4: Objective quality (clauses and conditions) reduces competition.

The award criteria in Saudi Arabia seem to encourage a more direct forward procedure in evaluating quality. All technical specifications, performance terms, conditions and clauses must be met before the contract is awarded to the lower price tender. However, due to the challenges defined in the political market strategy, procurement is overwhelmed by uncertainties which force quality requirements to be rigged. Without this, the committee may not even find a single supplier who can fit all the enforced requirement s. The tendering documents, if collected as previously described, miss much detailed information. It demonstrates very strict technical requirement, clauses and terms and conditions, which challenge technical committees, and result in non-qualified or single suppliers. If the list of suppliers goes down to below three, the procurement committee should reduce its requirements or call for a re-tender.

"*due to the complicated processes and stringent requirements in both qualifications and technical specifications, buyers may not find even a single supplier whose product can satisfy their desires (CBP18 Senior Contract Manager)*

"You might wonder why the processes take so long at the technical and executive committee stage, when the technical committees evaluate the technical aspects as described in the tendering documents. When they start inspecting the evaluation offers, the quality promised may not suit their pre-defined terms so they have only two options. The first is to pull up some of their terms nearer to what the suppliers can offer or ask them to re-tender. So the second is not a valid option because we only have a small number of suppliers. We end up 're-inventing the wheel' in terms of the executive committees. They are responsible for the huge amounts of time spent on budget approval and negotiations". CBP16B procurement officer.

6.12. Model 3: The role of the awarding criteria on public procurement

The third model, as illustrated in figure 6-17, here is to understand the role of the awarding criteria in public procurement. The lowest cost method ignores the quality of suppliers, which actually does not persuade suppliers to improve. Moreover, many suppliers may feel unable to cover the price aspect and so withdraw from the bidding process. These outcomes influence the public procurement outcomes which focus on short-term cost and do not consider other

aspects such as time or quality. Furthermore, competition is reduced because so many elements of regulation enforcement in the technical evaluation phase, such as terms, clauses incorporated from the standard coded documents, must be incorporated (Section 6.8.1.1).

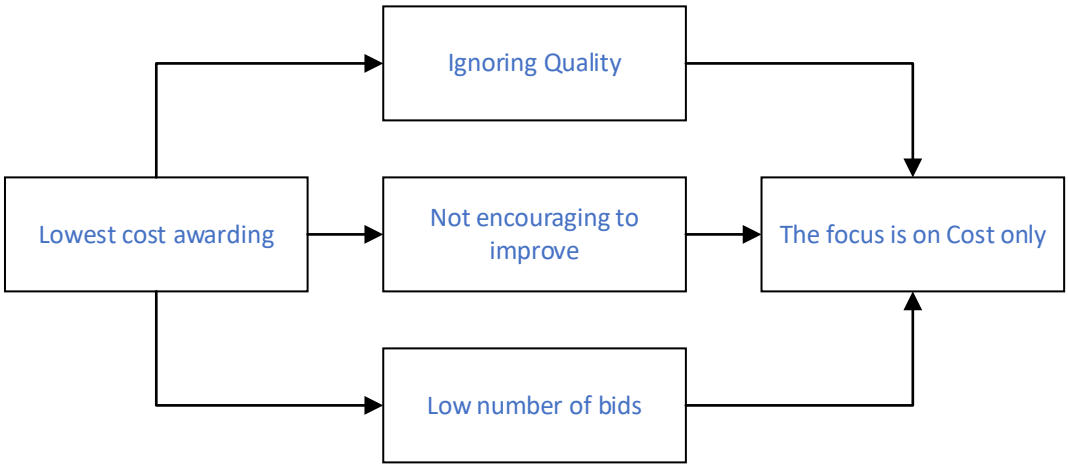

Figure 6-17: Award criteria models

6.13. Theme 7: Public Procurement Outcomes

Public procurement outcomes are defined in terms of value for money (cost, time and delivery) and socio-economic outcomes. In the Saudi context various stakeholders define value for money or the elements contributing to gaining best value for money differently. Some see VFM as associated with efficiency and effectiveness through achieving the optimal balance between the costs and the benefits.

> "*in the KSA, the procurement is two main criteria includes strict qualification quality criteria and lowest price, In the hospital context, the value for money is based on the final user satisfaction, which basically fit of price, quality delivering the healthcare in time for those who need it* ". CBP4 Sales director

The VFM also is observed to be driven by professional engagement and cooperation in its processes and is regarded as a single interrelated approach rather than a multi-phased one.

> "*Value is driven by people. By that I mean that those who are involved in the planning of tenders do not collaborate to integrate design, processes and implementation. Although it is not necessary that people involved in the design of a tender should be involved in implementation, they need at least to align the tender design with the award to be reflected in the contract. There is need of a proper mechanism to streamline the procurement cycle to gain a better view and active communication to achieve value for money".*. CAP15C Ministry consultant Former director of Procurement Department.
>
> *"Value for money is defined by many stakeholders as "the best quality at the best price" and also, "which better satisfies the end-user's needs to deliver the best results for patients"* CBP6 B Procurement planner.

6.13.1. Cost

The summary of pressures influencing and dominating the cost logic in the Saudi case study are summarised in table 6-6. This case seems to promote the rationale of efficiency over quality in its selection and awarding criteria. The efficiency logic is embedded in the awarding criteria which favours the "lowest cost method". Although there is a clear direction towards these, other costs that seem to be significant are not managed.

There are new cost categories in the procurement which are not documented in the legal papers. They come from mistakes, the cost of the process and the opportunity cost of getting the best prices from the best competitors. The complexity and unsuitability of the framework has pushed some international companies out of the market. New start-ups and international firms can also perceive the market as overwhelming, which pushes them away. This can lead to an oligopoly market with few competitors and high premiums and prices. In addition, due to fragmentation and inconsistencies in the decision-making process, orders are duplicated and mistakes are made in the ordering which creates a needless shortage or surplus of supplies.

Moreover, the legal framework as a whole is very inflexible and highly bureaucratic allowing organisations to miss significant opportunities by allowing accesses to international suppliers for both the requirement fulfilments, saving cost of preference, shortening the communications to reach decision and other socio-economic factors (e.g. multi-national employ more than local contractors and economic to keep the flow of cash local).The procurement of high-value products involves an average of 2-4 suppliers and of low-value products is 8-12 bidders. The preference for local suppliers restricts competitiveness and flexibility as well as increasing the cost of MDEs.

Pressures	Influences on Cost
Political and Legal Pressures	**With Cost:** Political pressures force the choice of lowest price, but does not account for other elements, such as long-term saving
	Against Cost: Standardisation of the requirement coding for long term saving, which does not give flexibility for practitioners' input,
	Against Cost: Discriminatory legal environment against competition from international companies and offers of more economical prices. Preference for local suppliers which allows them to increase costs, including transaction cost. **Against cost:** fragmented governance structure which loses control of the processes and communications

Procurement process and communication	**With cost:** digitised communication system in procurement-related departments. The bureaucracy also influences the processes and outcomes of procurement and to some extent stakeholders feel that there is too little harmony and coordination between many departments which results in delay in procurement projects. **Against Cost:** outdated specification documents, little knowledge of the market. **Against cost:** unclear documentation, which does not allow suppliers to prepare proposals based on the market price. **Against cost:** Shadow communications trigger the inefficiency of the processes; increased cost of administration; duplication of orders.
	Against cost: Closed dialogue with suppliers in the pre-tender and traditional procurement processes, demotivating the urge to innovate and increasing cost.
Selection Criteria	**Against cost**: Procurement tender documents are costly and unclear which prevents suppliers from preparing proposals based on the market price.
Awarding criteria	**With cost:** straightforward easy mechanisms **Against cost:** Bureaucratic enforced regulation in the pre-tender processes results in difficulty in evaluating bids, reducing competition, and causing delay, which increases the cost of products and administration. Many approval committees**,** **Against cost.** Cannot compete when cost is opposed to quantity in large contracts

Table 6-6: The influences of the different pressures on the "cost" public procurement outcomes

6.13.2 Quality

The quality perspective emphasises the supplier's performance in terms of customer satisfaction and the efficiency of the processes. Suppliers need to meet strict quality criteria based on pre-tender qualification. They include fixed specifications, characteristics and conditions, following the harsh regulatory guidelines in the tender documents. But these technical specifications do not take customer satisfaction into account (see section 6.11.4).

> *"In the hospital context, value for money should be based on the principle of patient satisfaction*". CBP4Supplier,

The current system does not foster quality aspects. In this case study, quality is not a significant factor because the ranking process starts from the lowest price. The first bid of acceptable quality from the lowest price rank will be the winner. Offers from other suppliers will not be technically evaluated or even reviewed. The selection of suppliers emphasizes quality only through pre-defined quality criteria. Specification, including delivering the products in a timely manner, on the desired scale or meeting the technical specification and budget criteria, reveals a poor balance of costs and benefits. From the supplier's perspective, the pre-qualification

criteria are vague, because the lack of planning and the out-dated specifications make it very difficult to supply the requirements.

Products coded many years ago when "Maward" was built in 2009 are based on old procurement categories. Due to many people's involvement in market research and the lack of knowledge on the part of the public administrators, they may submit for tender the old documents as they stand. However this results in cancellation or the failure of the tender ". CBP *CBP3B Procurement manager (Hospital)*

6.13.2. Duration of Procurement cycle (speed to the market)

All of these issues contribute to the delays and unnecessarily long processes. Analysis of the procurement document shows that the timeframe allocated by The Ministry of Health for the design of a tender, including preparation and planning, spans a 12-month period. However, the actual procurement cycle involves up to 30 months (see documents in Appendix 4) for normal MDEs.

> "*The actual procurement cycle involves up to 30 months for normal MDEs."* CBP18S Senior contract manager

In an emergency, the MDEs can be procured in 2 weeks at best, leading to 12 weeks, depending on the local availability of the product.

The data found on the tender documents (Figure 6-18) showed that the processes between the tender publication date and date of the announcement of the award based on the first committees takes approximately 387 days. However, the main delays, as previously mentioned, come particularly at the stage of the technical committees. However, the sponsor's approval of budget is not calculated in this delay. The time needed for the tender design proved difficult to determine, but it seems to take a long time due to the fragmented system, and current practices at the pre-tender stage in departments at many levels involved in the design seemed complex. Moreover, many levels of approval at the evaluation stage form a key issues in contract delays and consequently service delivery.

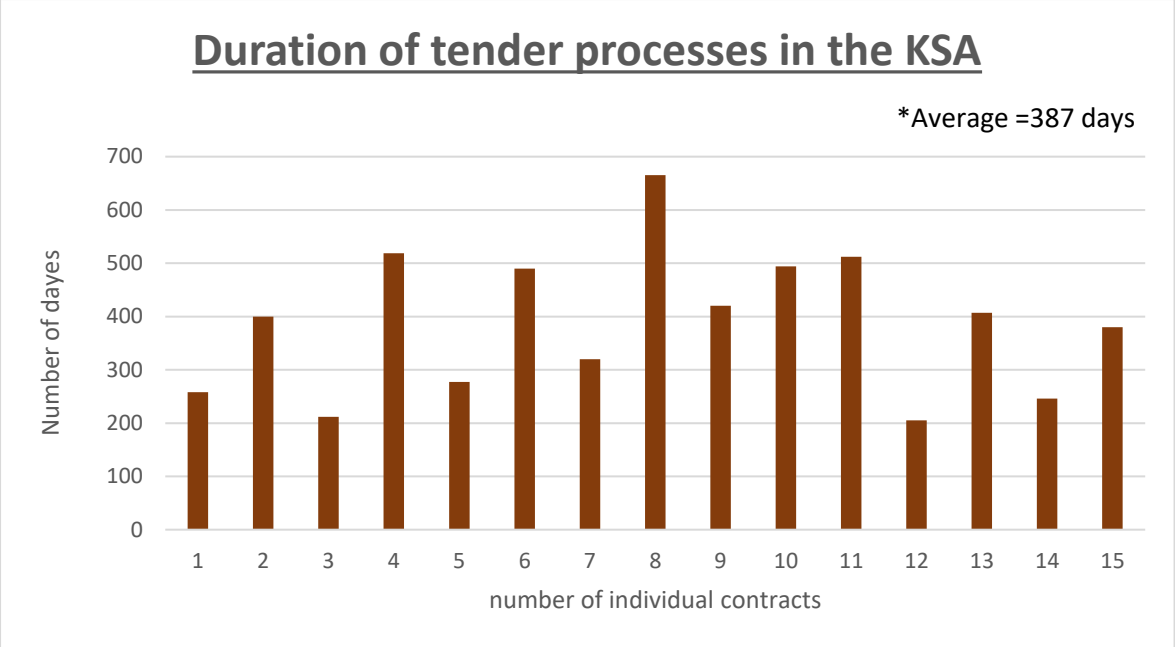

Figure 6-18 Duration of tender processes in KSA

To summarise, the procurement planning timeframe is 12 months while the actual procurement cycle for normal MDEs is based on 30 months, as shown in internal procurement documents and mentioned by key respondents. For emergency procurements, the timeframe is 4 to 12 weeks depending on the type of product and local availability. The aim of the tendering criteria is to reduce the procurement time and the right is reserved to penalize suppliers of delayed deliveries by deducting up to 10% from the contract amount (GPR, 2007). But this also puts pressure on suppliers to cope with such conditions.

6.13.4.Societal outcome

The summary of the pressures influencing achieving the societal outcomes are summarised in Table 6-7, the key social objective from Saudi Arabia's public procurement is to foster Saudisation and the SMEs. The political orientation of nationalism is translated into setting hindrances to international companies that will draw them away from the market. Ironically, this is done at a time when Saudi Arabia is not producing any medical devices. So long as they are needed, the government may waive the taxes and customs on these medical devices (which amount only to 5%). The result is that Saudi companies import these products from outside and use the Saudi name in the bidding. Far from being free, this costs the economy a significant amount. In addition, it makes the negotiation process more sophisticated because the government negotiates between an international supplier who is not operating in Saudi Arabia

under its own name but through agents, and the sponsor who approves the budget after the awarding process has ended. The market, with its complex and unsuitable legal framework become dominated by only four suppliers and in the last five years (2015- 2020) no SMEs have been represented. All of these challenges have contributed to frustrate the procurement specialists in the system.

> "*The procurement strategy is poorly structured and market analyses are managed through using historical data"*. CBP5B procurement specialist

With regard to the social and environmental factors, basic consideration was given to the social aspect; for example, bids need a 'Saudisation certificate' which ensures that the company meets with public policies such as hiring local workers and training Saudi nationals. Likewise, there are certain departmental concerns for elements of the environment, such as noise. For instance, the purchase of an MRI-CT scan took account of the noise and chromogenic wave, which could have affected the staff and public. Furthermore, care is taken to ensure that low value products are recyclable, and have not been recycled or made of recycled materials (tender documents)

> *"social and environmental activities are rarely seen in our purchasing but some of our friends here in the X-ray department are doing their best to fight for eco-friendly equipment, thinking more of the noise that the machines make and how to dispose of everyday used equipment". CBP13P Department lead Radiographer*

Pressures	Influences on the Societal outcomes
Political and Legal Pressures	**With SMEs and local suppliers:** clear preference is given to local suppliers, allowing 10% lower price awards to the local and SMEs. **Against international companies:** market competition is threatened by Saudisation; access is restricted by unambiguous procurement regulations
Procurement process	**Against SME:** the political orientation is not institutionalised because local suppliers do not produce some products, the quality requirement is higher than that of local standards, communication before and during processes is scanty, tender documents are costly and the processes take a long time. **Against a green environment:** a green environment is rarely considered. **Social and economic benefits:** the market is dominated by a few large contractors for multi-international companies. These do not employ as many people as if these multi-nationals were operating locally.
Selection Criteria	**Against SME:** for example, unclear requirements, deposit and financial guarantee put bidding out of reach for many small suppliers

Table 6-7: The influences of the different pressures on the "Societal" public procurement outcomes

6.14 Saudi Case Study Framework

The analytical framework in Chapter 3 found 7 main themes in this research, as visualised in this case study framework in Figure 6-19. They are political, legal, dominant rationale, process, and practices (communication and awarding) and public procurement outcomes. The emergent themes for political procurement are the Saudisation of the economy and the fragmented legal framework of the Saudi public procurement system. These two coercive pressures have created five main emergent themes, conceptualised here as the dominant rationale in public procurement. They are efficiency, transparency, preferences to Saudi firms, to empower SMEs, and complexity due to the fragmentation of the public procurement system. These rationale are not, however, enforced at the same level, which in turn is reflected in the dissimilar VFM measures.

These rationale, especially with the fragmented governance of the public procurement system, have created new types of communication, namely communication with sponsors and communication with third parties (the international suppliers who supply the Saudi firms which supply the government). Such complexity and redundancy in the process may prolong the procurement process to 30 months. Other communication practices as emergent themes are that communication with a supplier at the pre-tender stage is banned, which reduces the government's ability (that of the MoH) to estimate the market availability of the products and the latest updates but still improves the perception of transparency. The tendering communication is preferential and not all suppliers can reach the same level of information because communication is made in person and not through emails or the e-procurement system. This reduces the perception of transparency and undermines the SMEs' ability to compete in the market. Furthermore, the tendering documents are expensive to the SMEs which sets another challenge to their survival. The ultimate outcome has been that no SMEs have participated in any bidding in the last five years.

The focus on efficiency has made the government prioritise the least cost approach, concerned to select the lowest total cost as long as the quality criteria are passed. This indeed puts cost as the highest priority, but pushes quality to a secondary position, since the awarding process does not consider higher quality or more innovation. All suppliers are equal as long as the minimum quality aspects are accepted, and the difference lies only in the total cost.

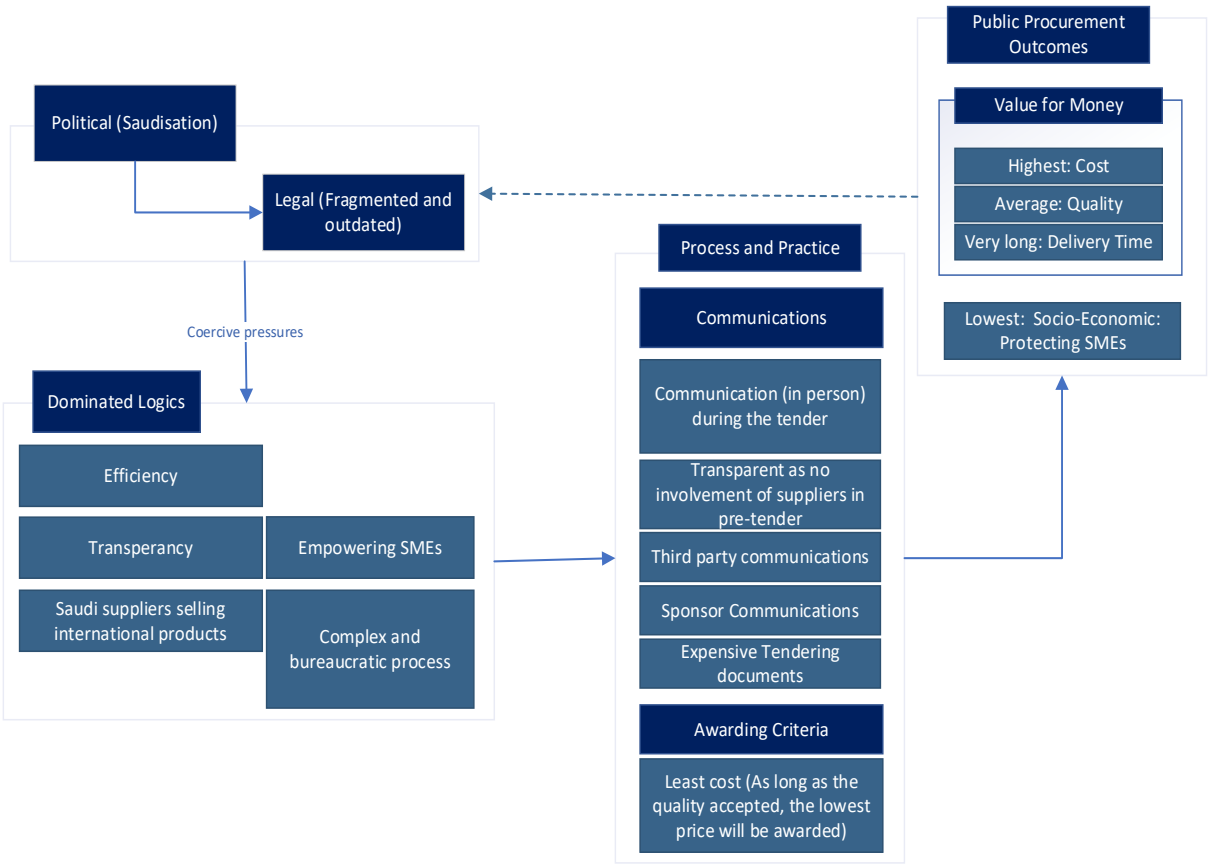

Figure 6-19: Saudi Case Study Framework

Even though people are anxious to use public procurement to optimise public expenditure, which means improving the VFM, the country has no clear practical guidelines or awarding mechanisms. Unlike the Irish system, this value for money is translated mainly in the bidding rationale by establishing MEAT as an awarding criterion, this emerges as pressure from the sponsor (i.e., the finance department) to negotiate the price after approving the best suppliers, outdated procurement requests and a need to update in order to meet the political and public requirements.

6.15. Research Framework

The final framework is presented in Figure 6-20. The two countries have fairly similar political agendas, although they are in different continents and have different political systems. Both are interested in value for money and want to foster SMEs. They are a little different in their legal orientation because Ireland is part of the European Union, which discriminates to protect European firms while Saudi Arabia is an independent monarchy seeking to protect Saudi firms and setting discriminatory practices against firms from abroad. But Ireland is a major producer of MDEs, whereas Saudi Arabia is a major importer of MDEs, and this makes the outcomes different for each.

In the case of Ireland, the Europeanisation process fosters and protects European firms (including Irish firms) which creates a small, limited suppliers' market (a European Oligopoly market). This favours the European market since currency, policies, rules, and processes are similar throughout. This finding aligned with Bovis, (2016) that EU institutions largely see procurement as a tool for enhanced market integration, member states have often tried to shield themselves from external competition, to allows individual national grew.

However, preferences against international firms is proposed in order to influence the opportunity for governments to secure the lowest prices and/or the highest quality worldwide.

The case of Saudi Arabia is completely different. Preferences against international firms does not protect Saudi firms because they are importers and not producers. Indeed, these discriminatory policies create more challenges in the market and create the need for a new communication channel for third-party communication. This gives the importers room to charge a premium in transactions at the taxpayer's expense. Added value may be gained by importing from outside, because the government does not allow international firms to bid in Saudi Arabia under their own names.

The Irish legal system puts extra pressure on simplifying the standardisation and efficiency in procurement and has automated both the process and communication through the e-procurement system for efficiency's sake. In Saudi Arabia, the legal framework is outdated and its structure and integration are poorly overseen. These challenges in Saudi Arabia create redundancies and mistakes in the supply process and at the same time creates a sphere of complexity that blocks the SMEs and international firms who want to penetrate this market. Complexity in the Saudi Arabia public procurement market has become a norm and only large Saudi organisations can deal with these levels of complexity. All these challenges ensure that

the public procurement cycle takes 30 months in Saudi Arabia compared to 12 to 24 months in Ireland.

Although both contexts claim that SMEs are a priority, they are not in fact top of the list as regards institutional practices. Ireland seems doing better because of the simplification of the process, engaging suppliers in educational workshops, and other extra efforts. But the awarding criteria do not include criteria to protect SMEs and also governments from time to time discuss new tenders with large corporates to learn the market trends and this is perceived to discriminate against SMEs. In Saudi Arabia, SMEs might as well not exist; the last five years have seen no SMEs in the tendering process. This is due to its complexity and to the fact that no criteria in the awarding method protect them. In addition, the quality requirements (all of them European) are too high for the local or SMEs established in Saudi Arabia to meet them.

Regarding the awarding criteria, although they seem to be based on two different principles (MEAT and lowest cost) the outcomes in some respects are similar. Both foster the cost logic and give it priority. In Saudi Arabia the lowest total cost wins while in Ireland the second lowest cost wins. However, MEAT fosters quality aspects and innovation, while lowest cost focuses on a pre-defined matrix above which any quality or innovation will be ignored.

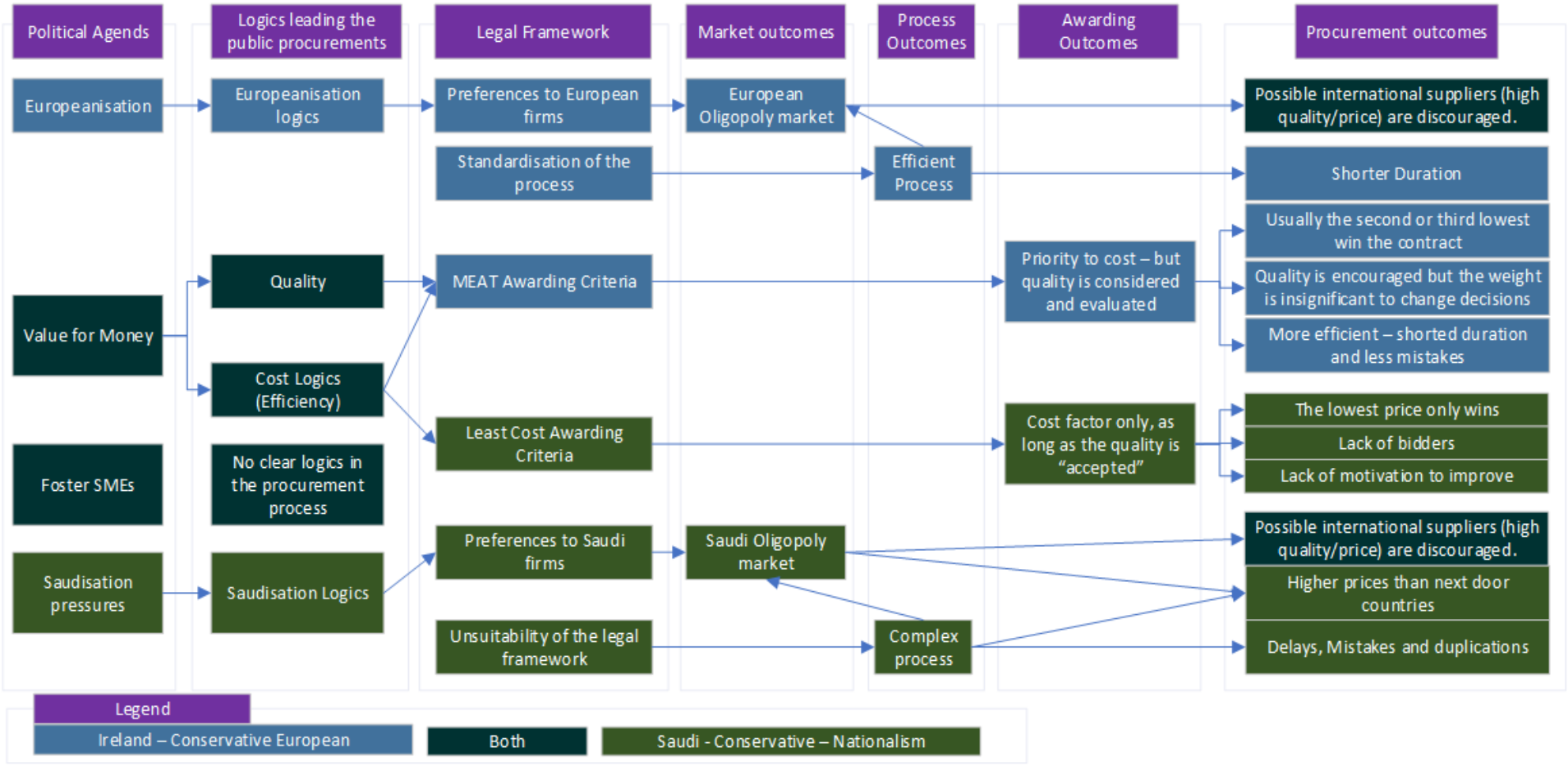

Figure 6-20: Research Framework

7. Chapter 7: Discussion

7.1. Introduction

This chapter discusses the research findings in the light of the literature and earlier theoretical framework to highlight academic and theoretical contributions and implications of the study. The study demonstrates a chain of logical transactions as procurement strategies on many levels, highlighting circumstances and actors' interactions and challenges under the two political and regulatory environments of Ireland and the Kingdom of Saudi Arabia. This chapter is structured as follows. First, the research question, aim and objectives are revisited (section 7.2). Then the contributions to academic knowledge are stated (section 7.3) and discussed in relation to the literature.

7.2. Research Question, Aim and Objectives

7.2.1. Research Question

*How do the adoption of different **political** and **regulatory environments** and the **awarding processes and criteria** shape the **public procurement outcomes** in the supply of healthcare and medical devices?*

The research developed a framework to answer this question in Section 6.15. The research covered two different contexts (i.e., Ireland and Saudi Arabia). The six different elements of the framework are the *political* environment which shapes the *legal* framework that affects the *process, communication* and *awarding criteria* of procurement which ultimately form the *procurement outcomes*.

Ireland is politically characterised as a European country oriented towards the European Union and subject to the Europeanisation of the economy (including its public procurement). Saudi Arabia is a conservative country, which is subject to the Saudisation of the economy (always buying local). As modern countries, both focus on public procurement to improve VFM as a priority, to strengthen SMEs and to empower the national industry to satisfy public needs.

This research found that the legal framework of Ireland's public procurement, compared to Saudi Arabia's, focuses on simplifying the process, transparent communication, multi-criteria awarding principles (i.e.MEAT). Saudi public procurement focuses on automating

communication by integrating more ERP in the process, but the legal framework is still perceived as not well-fitted with the Saudi ecosystem. It has hardly changed since the independence of its legal system from those of other countries.

Although each country has its own legal system, which differentiates its characteristics (i.e., automation, simplification of the procedures, the communication approach and the awarding criteria), they share fairly similar results regarding the accessibility of their international competitors. Both countries treat local suppliers preferentially. There is a clear perception that both markets look like oligopoly markets, with Saudi as an extreme example. The countries are different because Saudi Arabia does not have the capacity to produce all its own medical devices, whereas the European Union is one of the biggest producers in the world (Midtech, 2020). Ireland's market is relatively close to the European producers, which may ease the access to international suppliers. However, Saudi Arabia does not produce the medical supplies that it requires. This difference in the ecosystem creates extra challenges for Saudi Arabia, in that the oligopoly does not pertain to the local manufacturers, but rather to the local importers. This issue seems to set serious limitations on the power of the public procurement market to offer competitive bids; hence, the price premium on products seems to be significantly higher than in other countries.

In terms of the Europeanisation of public procurement in Ireland, it adopts the MEAT criteria in awarding contracts, thus giving superior weight to cost but taking account also of quality and environmental aspects. In Saudi Arabia, the legal system still follows the outdated regulatory system of other countries which adopt the least cost principle. This clearly ignores the rank of quality and environmental factors: i.e., as long as the quality is acceptable, nothing is deemed preferable. In both the awarding criteria, the SMEs are not scored or treated preferentially, which seems to contradict the nationalist approach that both claim of giving preference to their SMEs and local producers. This indicates that the policy of taking account of social, economic, and environmental factors is not compatible with the nature of medical devices and equipment, which conflicts with the use of medical devices to fulfil the purposes of the internal stakeholders.

To sum up it seems that, as regards medical devices and equipment, the political and regulatory framework is not institutionalised because of internal pressures to resist such possible implementation.

Research Objectives

7.2.1.1. To develop a model to investigate the political and legal environment influencing the procurement process in Ireland and Saudi Arabia

The Irish model was developed in Section 5.6 and the Saudi one was developed in Section 6.6. Political pressures in both contexts translated into the rationale dominating the regulatory frameworks as translated into practices and outcomes. But the institutional process in the two contexts differs.

Ireland, as a democratic government, is subject to and external pressures. While the external pressures are conceptualised in Europeanisation and institutionalising the European rationale in the procurement process (e.g., Open market, MEAT, transparency), the internal pressures focus mainly on the socio-economic pressures (i.e. SMEs) at national level. The regulatory system translated these pressures into standardisation of the public procurement process, the use of MEAT as an awarding criterion. The final outcomes are the purchasing the second lowest offer, as value for money, but the ability to integrate the SMEs in public procurement has never been part of the MEAT awarding criteria. This may indicate opposite pressure from the institution for more commercial constraints that give weight to other aspects, such as quality, cost within a limited budget and ways of communication and construct award criteria in a way that fits the internal organisation trade in value objectives (discussed in more detail in 7.2.1.2, below).

In Saudi Arabia, it has not been noted pressures on the government to be guided through public pressures. Thus, the internal and external pressures are not perceived to play a role in the procurement. The only factor than can direct the process is the monarchy's vision of the country; this is what emerges as its practice and shapes the development of its procurement system. This vision focuses on technological aspects which is translated into ERP systems (mistake approve) and on Saudi firms and SMEs in Saudi Arabia, but the vision does not give a clear agenda for improving the government's performance. Thus, the current public procurement system is perceived as complicated, bureaucratic, and outdated because it is copied from other countries and has not been improved or adapted to fit the Saudi context and or respond to changes in the environment. Its complexity has excluded the SMEs from this market and also made it difficult for international firms to operate in Saudi Arabia, which has created its present oligopoly market However, the vision is powerful and has been successful

in adopting technology and focus on Saudi firms (i.e. nationalisation) but there are some weaknesses in it. It uses technology, but some of its features impel the agents (i.e. clinicians and procurement specialists) to use the shadow system detailed below (Section 7.2.1.2.). Moreover, it is geared to buying from Saudi firms despite the failure of such firms to produce medical devices. This has created an oligopoly market protected by the legal system. It is not easy for international firms to operate autonomously in the Saudi context; hence, these firms need Saudi agents to bid on their behalf, which leads to a malfunctioning market with premium prices, delays in delivery and complexity in the supply chain. In addition, the aims of the technological adaptions and Saudisation are not fulfilled in practice; this may undermine the recent overall government objective of attracting foreign investment, increase the budgetary costs and still not help local firms and SMEs to bid successfully.

7.2.1.2. Modelling the influence of the communication practices on the procurement outcomes

Three aspects of the procurement process may play significant roles in shaping the procurement outcomes. They are communication, selection, and the awarding criteria. The Irish communication model is developed in Section 5.9 and the Saudi one is developed in Section 6.9 above, showing that technological and legal factors distinguish the methods of communication in the two contexts. Communication, in this research, is split into pre-tender and tender communication. In the former, the focus is mainly to define the requirements (in both cases) and define the awarding criteria (in the case of Ireland). Two communication channels exist for these purposes: communication with the users (i.e. hospital staff), and communication with external agents about quality or new purchases (e.g. consultants, as in Saudi Arabia or key suppliers, as in Ireland).

Thus e-communication with users are different across the two contexts. In Saudi Arabia, there is an ERP system which is believed to be used for : reducing errors improving the efficiency, compliance, and effectiveness of internal communications. Indeed, if the products are registered in the system, based on the market data, it may carries out these tasks. But the system is in fact outdated and the regulations do not allow any change in the databases. The specifications have been coded without updating for the last 10 years. This is what impels the clinicians and procurement administrative staff to use a shadow system (i.e. a parallel manual system to supplement the computerised system). Because the current public procurement

system has not developed to fit this shadow system, its weaknesses may lead to significant mistakes and duplicated efforts.

In Ireland, the case is different as there is not e- communication system, hospitals to connect with the government directly in making purchasing orders, collecting requirements and maintaining an inventory. According to HSE, the system is under development and is expected to be complete in 2023 (HSE, 2020). Thus, although the Irish government has standardised and simplified procurement to make it easier and faster, the social aspects of its current manual operation impair the efficiency and effectiveness of the process. In other words, due to the differences in the rationale (i.e., in definitions, terms, descriptions, needs) between clinicians and procurement specialists, the balance of power between them may play a significant role in predicting the efficiency and effectiveness of the process. For instance, as described in the analysis, if the clinician has more power than the procurement specialist, the articulation of needs will be more medical in emphasis and this may not help the government to write an efficient tendering document. Similarly, if the procurement specialist at the hospital has more power in the process, the requirement will focus on legal aspects but may not fully cover the medical needs. In the past this has translated into misleading statements of requirements and potential mistakes, as noted above, which have exposed practitioners to legal challenges.

Another aspect of the pre-tender communication is that the government sometimes wants to know about updates to what is available in the market or to improve tendering documents which are vague or embody complex requirements. In Saudi Arabia, the government asks external consultants to advice, which is claimed to show transparency – but at the same time consultants may not be fully aware of what is available or of the technological improvements among suppliers. In Ireland, in contrast the government may engage key suppliers who can update the government on the latest trends in the market. Although the Irish government stipulates that for transparency reasons the suppliers engaged in the pre-tendering process are not allowed to bid, it has been observed by some respondents that this process is not waterproof and may lead to malpractice. In other words, some key suppliers may use their social networks to influence the government, and this may give them room to design a tender that favours them. Similarly, it has been noted as a discriminatory measure against the SMEs who do not have similar access to the process and lack similar social capital to help them be heard or influence the process, as the leading suppliers or sets foot in the market .

In the tendering process, communication is mainly to suppliers, informing them about the buyer's requirements, and for clarification inquiries. It differs in the two chosen contexts. In

Ireland, the focus in e-tendering is on transparency, using emails with a "reply all" approach. It is flexible enough to accommodate innovations. By contrast, the government in Saudi Arabia prefers to communicate through representatives (i.e., people representing suppliers, who ask questions and receive answers). Some suppliers perceive this as not transparent; it allows the government to give preferential information to some suppliers, which may help individual firms to win contracts.

7.2.1.3. To develop a model for investigating the impact of the awarding practices on the procurement outcomes.

The Irish awarding model is developed in Section 5.12 and the Saudi one is developed in Section 6.12 above. While Saudi Arabia takes the lowest cost approach, Ireland takes the MEAT approach enforced by the EU. In the lowest cost approach, which came from other regulatory systems at a time when Saudi Arabia was reliant on their legal frameworks, only the total cost is counted, but the quality and other aspects make any given product eligible or not eligible (under rigid terms and clauses). This binary system does not give due weight to quality, social factors (e.g. the SMEs) or environmental factors. This binary system may be seen as inimical to the SMEs, who cannot afford to charge less; in addition, it does not leave room for innovation or improved quality in the products. In Ireland, MEAT, which comes from the European Union, considers other aspects such as quality, customer service, and social factors. However, the weight given to these qualitative measures is very low compared to the price aspects and the subjectivity of the qualitative measures may put their transparency at risk. MEAT has not been noted as a mechanism that empowers SMEs or respects social and environmental aspects as claimed by officials. It has been found that under MEAT price still the dominating factor even though quality may play some role in the process. Thus, the winner is usually the supplier with the second or third lowest price. On the theoretical level, it seems that political and regulatory institutional pressures play a significant role in the public procurement practices and outcomes, but the effect of these pressures is undermined in practice, due to the daily conditions of procurement. It is found to be hard to link the requirement to the wight MEAT aspects on early stage. To award it objectively without a modification in the score which, subjectively evaluated to make awarding decision.

7.3. Contributions to knowledge

This research developed a novel framework to understand the role of political, legal, and practices on public procurement in two countries with different political systems (the European Democratic system versus the Saudi Monarchy System). This framework is unique in the literature (Thai 2001-2017; weele, 2014;Erridge 2002; Patrucco et al,. 2017; Grandia and Meehan, 2017) because it involves the political, legal and practices in one single concept. The present research findings are similar to those of Hecimovic (2018) in Croatia: that Europeanisation institutionalises the European rationale in public procurement. However, the present research contributes to knowledge by showing that political factors have institutionalised the rationale of efficiency, effectiveness, and innovation through their awarding criteria (such as MEAT). Interestingly, similar to research findings by other writers (Keulemans and Van, 2017: Ancarani et al,. 2019) this research found that efforts across EU contexts to protect the social, economic and environmental (e.g.,. SMEs, according to the political agenda) failed because they had not been appropriately and effectively institutionalised in the legal and awarding frameworks.

This research made four new contributions to the academic debate summarised on (

What is known	What is unknown	Contribution
Institutional pressures (Coercive, mimetic, normative) influence public procurement outcomes	Which rationale are dominant;/. How do these rationale influence the procurement outcomes and why?	This research underlines the debate between efficiency and two chosen contexts the dominating logic is efficiency. The efficiency rationale are encrypted in the communication economic rationale are not well embedded in the communicati
Stakeholders have different needs and requirements. The public procurement outcomes depend on the relative powers of the stakeholders and their needs	Which stakeholders are operating in each context?Which rationale dominate in them? How does each of them exert pressure to dominate their rationale?	Ireland is a democratic country operating in the EU framewo the European Union which imposes all its rationale and enfo framework and processes. The public have rights translated i not perceived to be successfully implemented because they a and process. Normal suppliers do not have enough power to in although communication in the tendering process may have an Saudi Arabia is the pressure of the regulators of public pro who can influence the procurement process is the institutional
Governments who adopt favouritism are supposed to produce favourable outcomes to the locals while laissez faire governments tend more to support capitalists against the public	Does a favouritism strategy improve the conditions of the SMEs?	This research argues against favouritism, having found th imperfections which affect citizens' welfare in the end. Thi protect SMEs are not effective and the inefficiencies created b the citizens.
A government communicates with suppliers before the bidding process to improve its tender documents and to be updated in the latest trends (Grandia; 2015).	Is this an effective approach? How is it perceived by suppliers? What other options are there? How do the practitioners communicate to deliver value?	Although practice is uncommon, the Irish government adr suppliers at the pre-tendering stage. The noted positiv understanding of requirements, and improved understand However, some suppliers perceived it to counter transparency The other option is consultation. However, consultants may market and may misinform government.
Digitalising the public procurement process is important for improving efficiency and the collaboration required for innovation (Albano et al, 2015; Keränen 2017)	How can it be made useful? What if the digitalisation does not fit the current system?	In Ireland, the e-procurement system effectively secured fair d with the transparency principle. Saudi Arabia does not have perception of transparency in its communication with supplier In Saudi Arabia, the ERP system is effective in conveying th between clinicians and procurement specialists. In Ireland, t leads to poor communication between clinicians and specialist In Saudi Arabia, however, the ERP system has outdated coc clinicians and specialists to use a shadow system. This leads to duplication in ordering.
MEAT outperforms lowest cost because it considers quality and other aspects (Stake, 2017)	Is it a true statement? How does this translate in practical terms?	This research found that this is partially true. While Lowest c but MEAT sets criteria for quality. However, quality is sub quality scores are also minimal and not major elements in ch common option to take is the item with the second lov discriminate against the SMEs because the criteria may b suppliers and set barriers against others.

Table 7-1) and discussed in the four sections below . They use the neo-institutional theory and stakeholder theory to model the public procurement from a novel perspective, a new perspective from which to grasp the differences in the political pressures (laissez-faire strategy versus favouritism); communication strategies (pre-tender communication versus in-tender, digitalising versus standardising); and awarding criteria (MEAT versus lowest cost).

What is known	What is unknown	Contribution
Institutional pressures (Coercive, mimetic, normative) influence public procurement outcomes	Which rationale are dominant;/. How do these rationale influence the procurement outcomes and why?	This research underlines the debate between efficiency and socio-economic rationale. In the two chosen contexts the dominating logic is efficiency. The reasons are that in both of them efficiency rationale are encrypted in the communication and awarding processes. Socio-economic rationale are not well embedded in the communication and awarding practices.
Stakeholders have different needs and requirements. The public procurement outcomes depend on the relative powers of the stakeholders and their needs	Which stakeholders are operating in each context?Which rationale dominate in them? How does each of them exert pressure to dominate their rationale?	Ireland is a democratic country operating in the EU framework. Thus, the main stakeholder is the European Union which imposes all its rationale and enforces them through the regulatory framework and processes. The public have rights translated into the political agenda, which is not perceived to be successfully implemented because they are not translated into regulations and process. Normal suppliers do not have enough power to influence the procurement process, although communication in the tendering process may have an influence in the process. Saudi Arabia is the pressure of the regulators of public procurement. They only stakeholder who can influence the procurement process is the institutional pressures from the governments.
Governments who adopt favouritism are supposed to produce favourable outcomes to the locals while laissez faire governments tend more to support capitalists against the public	Does a favouritism strategy improve the conditions of the SMEs?	This research argues against favouritism, having found that favouritism leads to market imperfections which affect citizens' welfare in the end. This research argues that efforts to protect SMEs are not effective and the inefficiencies created by these measures are paid for by the citizens.
A government communicates with suppliers before the bidding process to improve its tender documents and to be updated in the latest trends (Grandia; 2015).	Is this an effective approach? How is it perceived by suppliers? What other options are there? How do the practitioners communicate to deliver value?	Although practice is uncommon, the Irish government admit to communicating with key suppliers at the pre-tendering stage. The noted positive aspects are the innovation, understanding of requirements, and improved understanding of the procurement market. However, some suppliers perceived it to counter transparency and also to discourage SMEs. The other option is consultation. However, consultants may not have direct knowledge of the market and may misinform government.
Digitalising the public procurement process is important for improving efficiency and the collaboration required for innovation (Albano et al, 2015; Keränen 2017)	How can it be made useful? What if the digitalisation does not fit the current system?	In Ireland, the e-procurement system effectively secured fair distribution of information aligned with the transparency principle. Saudi Arabia does not have such a system, which affects the perception of transparency in its communication with suppliers. In Saudi Arabia, the ERP system is effective in conveying the requirements and other details between clinicians and procurement specialists. In Ireland, the lack of such a system which leads to poor communication between clinicians and specialists. In Saudi Arabia, however, the ERP system has outdated codes and names which obliges the clinicians and specialists to use a shadow system. This leads to mistakes and to redundancy and duplication in ordering.
MEAT outperforms lowest cost because it considers quality and other aspects (Stake, 2017)	Is it a true statement? How does this translate in practical terms?	This research found that this is partially true. While Lowest cost does not quality in its ranking but MEAT sets criteria for quality. However, quality is subjective and difficult to measure. quality scores are also minimal and not major elements in changing decisions. Thus, the most common option to take is the item with the second lowest price. Indeed, MEAT may discriminate against the SMEs because the criteria may be highly specified to fit certain suppliers and set barriers against others.

Table 7-1: Contribution Table

7.3.1. Contribution 1: The study contributes to the models of public procurement by examining procurement through neo-institutional theory and stakeholder's theory.

As a theoretical basis for the analysis, the new version of institutional theory (neo-institutional theory) was adopted, as advised by DiMaggio and Powell (1983). According to neo-institutional theory, institutional rationale are the key to explaining and interpreting the outcomes of the ecosystem. The theorisation of the ecosystem as a constellation of rationale helped the research to investigate the mechanisms and formulate the divergent procurement outcomes as reflections of the differences in the political systems of the two chosen countries.

Unlike traditional institutional theory, which assumes that coercive, normative, and mimetic pressures may explain an institution's behaviours and form the isomorphism (Scott, 2002), this research underlined the rationale of the political agenda and found that not all political agenda in public procurement are translated into coercive or normative pressures. In fact, the key determinants of public procurement are the awarding criteria and the procurement communication which are the main gates through which the political agenda is translated into outcomes.

Public procurement, according to this theory, consists of a constellation of rationale set in motion by a key trigger, the political agenda. This research found support for this view by noting two main rationale, possibly contradictory: the efficiency logic versus the socio-economic. The dominant logic in the two contexts is mainly the efficiency logic; both systems are striving to achieve efficiency over meeting socio-economic needs (e.g. for SMEs, quality and innovation). It must be admitted that Ireland is doing better than Saudi Arabia in theory, because of the use of MEAT and the policies of the former has adopted to standardise and simplify the process. However, the participants in Ireland still believe the dominating logic is that of cost and MEAT even prefers corporates. This final result complements other studies which argue that MEAT, as it is currently practised, is not in favour SMEs (Stake, 2017).

This framing of the public procurement ecosystem is different from the framing under other theories such as socio-technical theory (Williams and Hardy, 2005). In the field of public procurement, McCue (2012) used an institutional perspective to make sense of e-procurement between politics and the institutional behaviours in adapting ICT using data from the U.S. and Canada. The result suggested that digitalized procurement has not led to transformative change. While socio-technical theory focuses mainly on the interaction between technology (e.g. e-procurement and ERP) and the public procurement system (Grabot et al,. 2008), the institutionalisation perspective of this research made it possible to understand in depth the

underpinning rationale which drive the final outcomes. Moreover, the perspective of this neo-institutional theory enabled the research to find emergent themes regarding the use of ERP, which were assumed to improve the process. Its unfitness with the requirements drove users to use the shadow system, which undermined the value of the . The shadow system in the IT literature is not new (Jones et al.2004; Chua et al,.2014) but may offer a novel perspective in the public procurement field when the IT system and management system are incompatible with each other.

7.3.2. Contribution 2: Political Pressures (Laissez-faire strategy versus favouritism strategy.)

The literature yields strong evidence that public procurement is used to serve political ends, which may be socio-economic objectives or VFM objectives (Grandia and Meehan, 2017), such as protecting SMEs (Walker and Brammer, 2009; Georghiou, Edler, Uyarra and Yeow 2014). Going back to the main theories about the role of politics in public procurement, the other school of thought is "laissez faire", which advocates an open and competitive market in which the government role should focus on efficiency and VFM (Albano, 2019; Folliot Lalliot and Yukins, 2020).

Although Keulemans and Walle (2017) found that EU citizens want public authorities to award contacts on more than price alone, and to include elements of domestic favouritism, this research finds a strong case for the second school, which prefers the government not to serve socio-economic objectives but to focus only on making the market efficient, on transparency, and on internationalisation and globalisation. Four main justifications may be deduced in this regard.

First, public procurement logic is built on efficiency rationale; indeed the bidding market focuses on price and open competition as main indicators of a well-performing market (Myerson 1981). Possible changes in these mechanisms will lead to market imperfection because of the favouritism strategies adopted, for instance when Ireland gives priority to the European Union and Saudi Arabia gives preference to Saudi producers. The final outcomes in the two contexts are that prices are higher than in the international market and an oligopoly market appears in the Saudi market. This implication supports findings by other economists who have found that more conservative the market is, the higher its selling prices are than those in the international market. Unavoidably, this premium price due to the imperfections of the market is paid by the taxpayer.

The second challenge in this debate is whether or not a strategy is effective in delivering its promises. Neither of the contexts served the SMEs, at least from the participants' points of view. The government in Ireland is investing effort and time in satisfying and engaging the country's SMEs, but it seems that economically speaking these efforts are not cost-effective. Similarly, in Saudi Arabia, many initiatives have sought, as regulators claim, to empower the SMEs, but no SME has won any contract in the last five years.

Third, MEAT has been adopted as a powerful enabler for non-economic factors such as innovation and quality to be considered; however, it is perceived by some participants to be less than fair and sometimes may be developed specifically to fit certain suppliers. This result is aligned with Ancarani et al.(2019), who found that SMEs arguing against MEAT because they suspect that it is hostile to them. Fourth, when the government focuses on efficiency and standardisation, as it did in Ireland, suppliers feel encouraged and SMEs are felt to be empowered. But this is not the experience in Saudi Arabia, even though the policy is giving price preference to local and small suppliers, however the, SMEs perceive the system to be too complicated for them to exploit. The main purpose of public procurement is to save taxpayers' money (Erridge, 2007), not to advantage a certain group (i.e. SMEs).

Thus, this research contributes to the debate between laissez-faire and favouritism as strategies by showing the evidence supporting the laissez-faire approach. This approach is exemplified by Folliot Lalliot and Yukins, (2020), who found that the crisis around the medical supplies to tackle Covid 19 in Europe had resulted from the policy of favouritism against foreigners suppliers.Cabras (2011) too, found that creating a public procurement system costs the taxpayer. Similarly, Krasnokutskaya and Seim, (2011) concluded that the efforts to foster SMEs are ineffective and waste a country's resources.

7.3.3. Contribution 3: Communication and Procurement outcomes

There are two academic debates on the communication associated with public procurement. One is whether to allow communication before the bidding process and the other concerns the importance of digitalising the public procurement internal and external process to make it more efficient, affective and ensure compliance.

Regarding the first debate, the regulations in the two contexts discourage communication with suppliers before the bidding process; however, Ireland allows space for engaging key suppliers before tendering, while Saudi Arabia may advise independent consultants. Academics defend communication and collaboration before the bidding process (Schepel, 2006; McKevitt and

Davis, 2015) partly to set specifications (Lynch and Angel 2013), which suggests that it might improve the procurement outcomes allowing collaboration before procurement processes (Patrucco et al., 2020) and might enhance innovation in the market (Uyarra *et al.*, 2014). The qualitative evidence, however, opposes communication collaboration with individual contractors before tender, for several reasons.

First, it has been noted that communication may compromise the perception of transparency and fairness. This finding supports Gil and Marion (2009), who observed that communication may affect the tendering specifications, which might leave some suppliers at a disadvantage. Second, SMEs are not usually key suppliers, which is disadvantageous for them. These arguments support the finding by (Albano *et al.*, 2015) and Keränen (2017) that in public procurement contracts involving suppliers in the pre-tendering process gives them more opportunity to influence buyers bias.

Third, independent consultants may be able to view the local and international markets with an independent eye, while local suppliers may focus only on affordability in the local market. Fourth, although key suppliers will help to improve the clarity of the tendering documents and make the process more comprehensible to suppliers, it is still possible to favour some suppliers, even if the participating supplier cannot bid. The social network will put the SMEs at a disadvantage.

The second debate, on the importance of digitalising the public procurement process, shows that, as the literature asserts, information and communication technology may play a significant role in the pre-tender and tender process, including the ERP and e-procurement system (Fernandes and Vieira, 2015; Moe et al., 2017). This present study illustrates two cases, one with e-procurement with no ERP (Ireland) and the other with ERP but weak e-procurement (Saudi Arabia). In the pre-tender stage, the ERP was found to play a significant role in improving the communication between clinicians and administrative staff in the hospitals and between hospitals and the ministry of health because the product specifications and terms are well defined, and misunderstandings are unlikely.

The use of ERP systems improves the internal communication in an organisation. This research found that the language between doctors and administrative staff is unified and clear compared to the language between them in Ireland where no ERP exists. As an emergent theme in this research, ERP also helped to keep a balance of power between clinicians and doctors in Saudi Arabia which was not found in Ireland. Ireland admits the possibility of imbalance

between clinicians and administrative staff which may be inferred from the confusion and unclarity of the procurement specifications.

This research adopts a new perspective from which to understand the role of technology, not only in improving communication but also in balancing power between stakeholders so as to write appropriate specifications. The second emergent theme in the communication is noted in the ERP database in Saudi Arabia which is outdated, and excludes many requirements from its system. The system is a mistake approve built on hard regulatory framework, As Moe et al. (2017) maintain, an institution's logic is bound by regulatory bodies which limit the degree of interaction. A shadow system can exist when the built-in processes of the ERP cannot fulfil the required tasks, as this research found. A similar challenge can be seen in Saudi Arabia, because the regulations prohibit the databases from being updated and lack any pre-defined process to follow when the required products are not on the database. Thus, Saudi Arabian clinicians and administrative staff are confused, unlike their Irish counterparts, who have clear steps laid down for submitting the requisite forms. In this case, the possibility of mistakes and error is high; see the many examples noted in section (6.8.1) above. Indeed, the government has no clear methodology for receiving and dealing with manual requests, which may lead to orders being duplicated, under-ordering or over-ordering. This finding supports the verdict of MacKey and Cuomo 2020: that technology is useful only when it is "establishing regulatory harmonization with standard settings" and is flexible enough to empower the use of it.

Regarding the use of the e-procurement system, (Arrowsmith ,2010), e-procurement improves the perception of transparency and equality of treatment because all bidders have the same access to information, as agreed by previous writers. The evidence is crystal clear in Ireland which, unlike the Saudi system, uses face-to-face communication that might lead suppliers to perceive unfairness and lack of transparency. This research found the emergent theme in the data of improved innovation. In Ireland, the continuous communications through the e-procurement system have made the government aware of new ideas from the suppliers which have been found efficient and better than the ones requested. Thus, on the basis of this evidence, this research argues that communication is more useful and transparent if it is structured by the e-procurement system, and takes place in the tendering process and not before (except when an innovative equal interaction and involvement is implemented at the pre-tender stage).

In addition to recognizing the limitations of structurally unsupported technology, a significant amount of research has been done in the literature on policy implementation which finds that in order to avoid problems during implementation, political, institutional and behavioral issues

must be fully assessed before adopting new initiatives. These findings are consistent with the present findings.

7.3.4. Contribution 4: Awarding Criteria (Lowest Cost versus MEAT)

As noted above, the two chief awarding sets of criteria are lowest cost versus MEAT. There is a scientific debate over which is more fit for purpose. But the notion of purpose itself merits revisiting. Is the purpose to satisfy socio-economic objectives or to secure the most efficient option (Grandia and Meehan, 2017;Sumpikova *et al.*, 2016)? There are claims that MEAT will satisfy the socio-economic objectives (Lewis, 2012; Kiiver and Kodym, 2014; Lahdenpera, 2013; Kidalov and Snider, 2011;Maréchal and Morand, 2012) and will consider quality (Marcarelli and Nappi, 2019; Grandia et al.2017) and innovation (Davidov and Langille, 2013) in the procurement process, while least cost is held to secure the most efficient option (Patrucco et al., 2016; Meehan, Menzies and Michaelides, 2017).

This research argues that the least price is the best option, for several reasons. First, from the practical standpoint, MEAT does not fully embed quality and innovation. This research partly agrees with others that MEAT considers scores and weights for innovation, quality and other social and environmental factors (Sanchez-Graells, 2021), to which this research would add active communication and flexibility during procurement. But this research found that the dominant scoring goes to cost, which makes the lowest price, or the second lowest price offer, the winning one, as documented also by Ancarani et al. (2019).

Second, MEAT is perceived as not very transparent if the key suppliers are involved in the process of designing it; this is a finding supported by other researchers who have documented that SMEs prefer the least price system because MEAT depends on aspects that are difficult for SMEs to satisfy (Ancarani et al.2019; Stake, 2017). This finding disagrees with those of Alberdi and Begiristain-Zubillaga (2021) that MEAT helps SMEs; rather, it appears to make it difficult for SMEs to satisfy all the requirements. Third, this research found that some of the multi-dimensional criteria in MEAT are subjective and leave room for different interpretations. This finding is backed by Tench, Jones and Sun, (2018) and Lundber & Gergman (2017), who proposed similarly that the criteria may be criticized and may force the government to focus more on cost as a quantitative measure. Indeed, this research is not the first to criticise MEAT in the medical device sector. Weszl et al. (2019) also reported that MEAT is not concerned over reported outcomes for patients and is produced mainly by administrative staff whose rationale are dominated more by aspects of cost than by patient outcomes.

This research argues `at MEAT is more fit for purpose if the socio-economic aspects are given more weight than cost is. However, when this occurs, MEAT leads to market imperfection and possibly involves taxpayers in much higher prices than it should for imperfections that have resulted from government interventions. This research found that lowest price is easier to administer, as endorsed by Lewis (2012). Nevertheless, it does not consider qualitative measures (Osborne and Brown, 2013; Sjåfjell and Wiesbrock, 2015) or innovation measures (Moe, Newman and Sein, 2017). It also augments this argument by finding that suppliers perceive it to discourage investment in innovation; it does not prompt suppliers to innovate or to improve quality.

Still, although the previous research argues that lowest price does not consider patient safety in the process (Heitmueller, et al., 2016; Meehan, Menzies and Michaelides, 2017; Maniadakis et al., 2018), this findings of the present research do not support their claims because lowest price, at least in this context, is supported by rigorous clauses and requirements to ensure patient safety. In any case, the market may "push" to improve by innovation through setting tougher rules for selection and filtering to ensure that only the suppliers offering the highest quality and most innovative solutions will bid. The Saudi case, however, shows that this may be challenging, for sometimes no suppliers are available to bid. Thus, it is important to conduct market research before setting out the tendering documents.

This research is the first to compare lowest price with the theoretically optimum approach, namely, MEAT, and find that each has its pros and cons. The outcomes will not be improved mainly by choosing MEAT or lowest price, but instead by altering the government position from a market player to that of guardian of transparency and efficiency.

Methodological contribution

From the methodological perspective, the analytical framework was successfully adopted to examine different perspectives (i.e. those of such agents as governments, users, suppliers and independent consultants). Because previous public procurement research focused mainly on quantitative evidence, qualitative research is mainly recommended for investigating actual practices (Flynn 2015).Very few researchers have applied the case study format with a qualitative approach, which is admitted to be the most difficult one for considering the topic of procurement (Flynn and Davis, 2017; Bals et al., 2018; Patrucco, Walker, et al., 2019). Thus,

a comprehensive qualitative analysis is still awaited (Patrucco, Agasisti and Glas, 2020). Gordon Murray (2009) also found that since procurement is multifaceted it needs in-depth case studies from the perspectives of many stakeholders, since most of the material is collected from the experience of either suppliers or buyers and shows only one side of transactions. However, the field of public procurement requires more than a quantitative approach to probe deeply enough into the details of practices. Consequently, the present research used an in-depth qualitative case-based method, which may turn out to be the starting point of methodological innovation in this regard.

8. Chapter 8: Conclusion

8.1.Introduction

The previous chapter discussed the research findings in the light of the research question and objectives to outline the academic and theoretical contribution of this study. However, this chapter aims to conclude the thesis by looking at the empirical contribution in section (8.2) and in the following sections considers the practical implications and professional applications derived from the research findings and discussion in the previous chapters. These implications are preceded by the research limitations (8.4), which in turn form the basis for suggestions for future research (8.5).

8.2. Empirical Implications

8.2.1. A comparative case study between two countries – Ireland and Saudi Arabia – operating under different public procurement legislative regimes

This thesis features a comparative case study between two countries – Ireland and Saudi Arabia – operating under different public procurement political and legislative / regulatory regimes. The study provides an insight into the procurement methods of the healthcare sector as they are adapted in country-specific contexts which shape procurement and the provision of care outcomes. In Chapters 5 and 6 the study further investigates internal influential factors in depth and examines the formulation of procurement strategies and their implementation practice in each country. Finally, Chapter 7 compares the findings, drawing lessons to be learned from both countries.

The study contributes to existing knowledge by opening a dialogue about the contextual factors that influence the stakeholders' strategies. The micro level of both study contexts is not aligned with current practices. On the one hand, the political pressure from the EU directives prevents practitioners in Ireland from getting their desired outcomes while, on the other, the regulatory overlap on the KSA creates confusion amongst stakeholders, because it focuses more on efficiency than on other objectives.

8.2.2. The experiences of practitioners under the regulatory and political pressure of the procurement process

There is pressure on procurement in Ireland to comply with the EU regulations rather than commercial orientation and outcomes (5.2.2); moreover, government policy and objectives are not evenly balance against the procurement regulations. in Saudi Arabia the procurement procedures are bureaucratic; multiple departments are involved in procurement design and processes, and the procurement processes themselves entail many levels of approval, which delays the delivery of supplies, and creates the risk of misalignment and possible inability to contract suppliers successfully.

8.2.3. The outcomes/impacts of procurement award criteria set under national legislation – i.e. MEAT vs. Lowest Price.

The procurement award criteria, according to the definition of this study, form the bottleneck in any public contract awarded. A failure to communicate award formulation may be traced to the outcome at the award stage (sections 5.4.3.1 and 6.5). The research finding suggests that it is a mixture of factors, rather than the award criteria alone, which lead to a different outcome and play a significant role in the awarding of the contract. The result shows different uses of the selection and award criteria in the two chosen countries. However, regardless of the method adopted, both countries use lowest price as their principle of evaluation.

8.2.4. New data in the study on the procurement of medical devices.

The market in medical devices is rapidly changing; in neither of the chosen contexts are the current procurement regulations and processes aligned with the market dynamics of public procurement. The findings in sections 5.1.3.2 and 6.1.3.2 suggest that the market supply research is currently done in a traditional way, using historical data and focusing not only on what the market offers at the time of the research but also estimating what the market will be able to offer by the time the contract is awarded. Efforts have been made in Ireland by ensuring flexible technical requirements to allow more choices when the award is made. However, the Saudi system, due to the rigid implementation of its terms and clauses, does not allow flexibilities, for fear of raising issues, such as missing better quality goods in the market, reducing competition, pulling out some new requirement in the procurement process, cancelling or re-tendering due to insufficient competition. The entry of medical devices in the market is complicated and strictly regulated. The public procurement legal / regulatory

environment adds a further level of complexity to the delivery of medical devices and equipment (5.2.1, 6.2.1&7.2.1). (5.2.3 &6.2.3). The general law of public procurement may not be compatible with the nature of technology purchasing, which needs a more flexible regulatory framework to ensure that it can be updated to keep pace with a quickly changing market. Innovation is considered more as an outcome conferring long-term value (e.g. to the life cycle, to quick error-free diagnosis and to rapid treatment). It helps to reduce the pressure on healthcare, preventing disease and patient re-admissions.

Stakeholders are also confused about the ownership of procurement; the internal stakeholders do not know where their role starts and what authority they may wield. For example, in Ireland, clinicians and procurement officials perpetually interact, pushing and pulling one another over questions of quality and, price between. Procurement is restricted by budgets and procurement regulations to be general and fair, while clinicians' needs are driven by specific requirements, loyalty to a brand or patient outcomes. In Saudi Arabia, many departments are involved in the design of procurement strategies, each department adding terms and clauses, which results in limiting competition and making implementation a challenge.

8.3. Practical Implications

This research found that the political, regulatory, communication and awarding aspects create intended and unintended outcomes for Saudi Arabia and Ireland. Indeed, the differences between the countries may help them to learn from each other. The following sections will cover recommendations for each of the above aspects based on the research findings.

8.3.1. Political aspects

It is a notable finding that political pressures in terms of Europeanisation for Ireland and Nationalisation / Saudisation for Saudi Arabia played a significant role in creating barriers to protect European firms in Ireland and to protect Saudi firms in Saudi Arabia. This policy, however, seems to have been pursued at the expense of the citizen, who pays to have European or Saudi firms protected. The case is worse in Saudi Arabia because the market is limited in its players and its ability to produce its own medical devices is low, which restricts the role of Saudi firms merely to buying from outside in order to sell to the government (i.e. the added value is nil while the cost is great). This research recommends a full open market policy to allow for all the eligible international firms to enter the market and compete, regardless of

where the goods were produced or the nationality of the firm. International competition will help to secure the highest VFM for the tax-payers. Local firms and SMEs may be protected by subsidies or maybe by empowering them with low interest loans or educational programmes. Saudi Arabia can learn from Ireland's initiatives here, but the Irish political initiatives are still perceived to be insufficient and in need of more out-of-the-box ideas. More importantly, the actors involved in tender design and award require solid integrated efforts to align the external and internal institutional outlines with the level of professionalism in the communication.

8.3.2. Regulatory aspects

Regulation means the translation of political pressures into practices and outcomes. Ireland is doing far better than Saudi Arabia because the regulations there have simplified the process of procurement and made it easier for both new entrants and for SMEs which will probably reduce the transaction costs. Saudi Arabia would benefit from reforming the regulation framework to fit the current environmental needs. For instance, having an ERP system and being ruled by regulations developed in the 1970s and 1990s may make the system malfunction and is leading to many deficiencies. Thus, the regulatory system in Saudi Arabia is perceived as out of date and difficult for SMEs and international organisations to compete in, which has created a monopolistic market. SMEs cannot afford to deal with the level of complexity and contradictions in the system. Regulations that fit the new communication technologies are required, to simplify the process, and make it easy to follow; these will help to empower SMEs and open a wider marker to international companies. Indeed, during the writing of this thesis, the Saudi government has already started to reform the public procurement regulations to make them more flexible and better adapted to purchasing technology.

8.3.3. Communication aspects

The lifeblood of the public procurement system is the communication between departments and institutions. Any issues in communication will make the whole system malfunction and will not lead to the expected outcomes. Saudi and Ireland face different challenges because the communication approach used in each country is different.

In the pre-tender stage, the Saudi government does not communicate or collaborate with suppliers but the Irish government may if the procurement is complex. Listening to suppliers in the procurement stage has pros and cons. It can help by informing the procurement officials about the latest updates in the market and the latest technology, but it can also be perceived as

preferential treatment for the key suppliers as well as discriminatory against the SMEs and the organisations that have no access to those suppliers. The Saudi government to avoid this challenge uses consultants, an action which is perceived to be transparent but at the same time can limit the government's ability to discover the latest trends. Thus, the recommendation here, involving the suppliers and users in the pre-tendering process, is crucial for preparing the most appropriate tendering documents. But this process has to be led by a committee and have open access to any suppliers who wish to take part in the process with voting rights to protect the rights of the SMEs. If big corporates are helping to write the tendering documents, without doubt they will be oriented to the interests of corporates; and if the SMEs only were involved, they would be designed to fit the needs of the SMEs. Indeed, SMEs and corporates must both be involved, with equal rights, while the user and the government (maybe led by external consultants) must be allowed to write the final document.

The second aspect in the pre-tender communication is the use of technology, which may improve the flow of information between users (hospital and government) and also between doctors and administrative staff in the hospital. Saudi Arabia has been successful here, for the ERP has improved the communication between doctors and administrative staff and reduced the possibility of mistakes in setting out the requirements. This is something to be learnt from the Saudi case study, as Ireland has now realised. As its government announced, the ERP system will be implemented there within a few years. Although Saudi Arabia has the advantage of having an ERP system, the outdated regulations, which limit the users' ability to amend the details, prevent the system from performing as it was expected to do. Indeed, if the ERP has no completely new products to mention, the system does not allow amendments to items, which may oblige the users to employ a shadow system. This latter system has not been designed on purpose by policy makers or regulators; it has evolved over time and has serious flaws which lead to many significant mistakes. Thus, the recommendation for Saudi Arabia is to allow the databases to be updated yearly and with each tender initiation to ensure that the latest terms, specifications and products are correctly entered and capable of being communicated to everybody, to ensure a uniform language and prevent mistakes in documenting requirements.

In the tendering process, the Saudi government was not at the time of this research using email or an e-procurement system enquiries text, whereas the Irish government was allowing communication through the e-procurement system to ensure that the messages were transparent and available to everyone. The Irish experience provides a lesson for Saudi Arabia. The Saudi communication approach, using personal representatives and face to face communication with

selected suppliers, is perceived as unfair and susceptible to doubts about its transparency. Flexible interaction between suppliers and buyers, not only at the pre-tender stage (Uyarra et al., *2014*) but also while tendering, might be an innovation that leads to better VFM, as we can see from the Irish case.

Thus, Ireland seems to have a better communication system in the tendering process, but still has room for improvement. Open and continuous communication involving the users is what is needed. Communication is vital to ensure VFM and feel satisfied that suppliers have the best knowledge of users' requirements in order to design and innovate better. Since the SMEs cannot compete without access to the information, an open and continuous flow of information may support them without any recourse to taxpayers' money.

8.3.3.1 A new digital communication system

The public procurement regulations introduced over the last few decades are not aligned with the internal processes and current conditions. It is not clear that the politicians who introduced these policies and regulations could measure the outcome of their inputs by any proper mechanism. For the last decade, government procurement has adapted e-tenders but only in order to integrate the process of tendering. What is needed is a fully automated system that links the activities of procurement and the actors' feeds to the reforms that the policy makers will oversee, coupled with lessons learned by the practitioners. The procurement processes should be dealt with as a single interactive interchangeable rather, than a series of stages that different actors and departments have charge of. This research suggests a novel model of communication (Figure 8.1) for the procurement system. Introducing a central data base and e-procurement rather than procurement by e-tender might benefit all the parties involved. It would send a signal to the market in adequate time before tender. In response, the suppliers, who could be anonymous, could contribute to the design by introducing at the pre-tender stage all the necessary information to the data base without the need for direct interaction with buyers. The system should also facilitate free interaction between the procurers and the end users to unify their rationale and create synergy between them.

The second is to integrate more efficiently with the current tender to guarantee that the information shared during the process is adequate and that the suppliers have communicated their demands clearly. The open communication should be clear to all suppliers, notifying all the competitors about the terms that are being changed; this would help to ensure the suppliers' flexibility and willingness to accept changes in the requirements during the tender processes.

In their evaluations suppliers often complain about the changes that were due to insufficient planning, which may even be illegal. In the last two stages, therefore, practitioners should send feedback to the database and policy makers to draw attention to the areas that need improvement. Furthermore, feedback should be sent to the suppliers, who have no other way of improving future tenders. Although this study is limited to the pre-tender and tendering processes, it should be mentioned that project managers or end users should also report the delivery, quality, service delivery to the procurement officials and should notify them of any cost overrun, and other issues accrue post-tender. Adopting this or some similar idea could improve communications, compliance, the exchange of information with suppliers, the timely sharing of feedback with policy makers without any need for traditional communication. Furthermore, it may offer individual procurement officials lessons to learn from one another's mistakes and facilitate changes of policy in response to new data. Finally, feedback can be shared with central bodies and all the internal stakeholders involved in procurement to improve its performance outcomes.

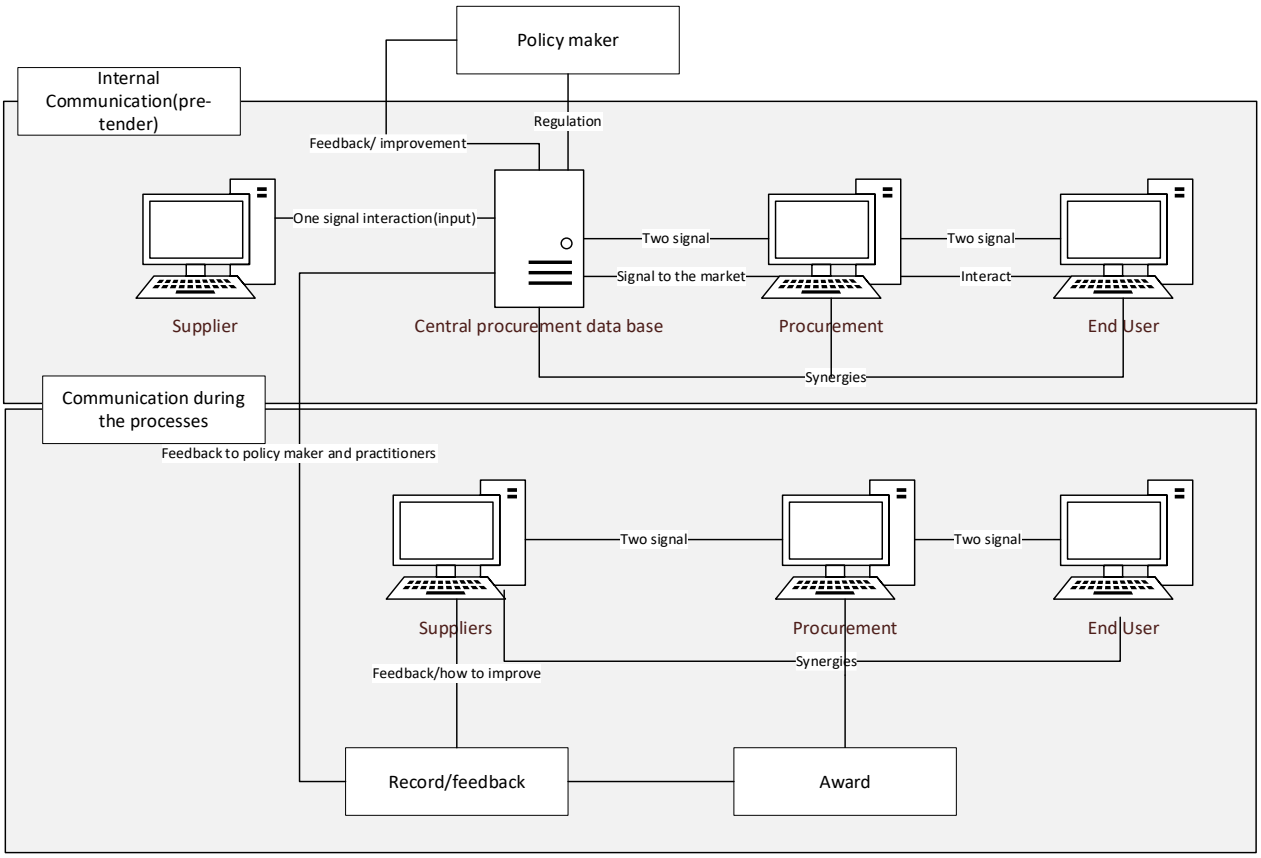

Figure 8-1: Suggested a new communication system

8.3.4. Awarding Aspects

Saudi and Ireland use two different awarding systems, namely, lowest price and MEAT. Both methods ignore the criteria that are supposed to protect SMEs. Even MEAT that could give space to protect SMEs, it has been used to give greater weight to cost and price than anything else. Lowest cost entails some serious weaknesses; as long as the supplier and the product are eligible, it considers nothing but price as long as the supplier is qualified, and the product is qualified. This indeed limits the capacity of the market to innovate and encourages neither development nor improvement. In Ireland, theoretically, MEAT should encourage them, but the current practices in that country still show that the highest priority is price, with quality coming second. The recommendation here is to use MEAT but in a way that accommodates the political agenda. MEAT can direct the economy very powerfully because of the significant part that public procurement plays in it. Thus, MEAT should be designed to include more than cost considerations and cost should not carry more than 50% of the weight so that other factors, environmental and socio-economic, can co-exist with it. This does not necessarily mean that the taxpayer must subsidise inefficiency; rather, the design of the MEAT criteria and weighting should recognise the need to maximize VFM in the taxpayers' interests. Moreover, when the procurement processes take so long it is hard to maintain the award criteria objectively and without further amendments to the score and specifications at the evaluation stage .

8.6.2. Application to Professional Practice

As a procurement specialist operating in an international environment, there are certain recommendations shall be embedded in the competence framework. Procurement outcomes are not wholly rational and not always based on pre-defined objectives, as the public procurement documents claim. This research found that procurement officials must understand not only the routine procurement processes and awarding criteria, but also the communication system in the procurement process and the political and regulatory framework governing the public procurement system in a given context. Traditional bodies of knowledge about public procurement take either the political aspects (e.g. public value) or the practical aspects (e.g. the legal documents and paper work). This research would recommend a comprehensive competence framework in which public procurement managers could integrate the political and regulatory practices in a given context (e.g. Europe or Saudi Arabia) with the characteristics of the awarding system and communication system. In addition, although the dominant procurement certificates are international, this research argues that subsidiary certificates

should also be issued to fit different contexts and industries. The context and industry play a significant role in the factors shaping the outcomes of procurement.

Furthermore, this research has shown that professionalism in public procurement achieved only with practice. Junior officials should incorporate practice in their own context as part of their training programme. Surprisingly, it was interesting to observe in both the chosen countries that most of the sales managers in the private sector had earlier careers as clinicians or procurement officials. This can teach the public a lesson: to use the same strategy.

On the basis of the research findings, recommendations for professional practice at the political and practical level are proposed next.

At the policy makers' level

Political elements should be added to the framework at the policy makers' level. This would encourage flexible practical outcomes, because this study has shown that political factors (e.g. social, economic and environmental factors, quality, and innovation) should count, as well as transparency, efficiency and accountability. This is contradicted by the institutional stakeholders involved in the procurement processes. While, the administrative staff are constrained by so many conflicting political and regulatory objectives , such as budget, the fear of legal challenges and job security, the end user is more concerned about the quality, familiarity, and ease of use of the product than about procurement policy and regulation concerns. However, the orientation towards incorporating SMEs, local preferences and similar objectives has become less important and is not translated into practice. At least, the findings of this study about the procurement of medical devices in Ireland and Saudi Arabia suggest that enforcing this orientation might increase the cost and impact on the outcomes of procurement.

The first suggested solution for policy makers is to re-examined public procurement-based practice, this seem to be impossible without prioritising the procurement practitioners' feedback and learning. This practice could be improved by facilitating communication at all levels, listening to those who face the challenges of procurement every day at the tactical level, and using their judgements to build a comprehensive procurement system (Figure 8.1). This should offer practical solutions, incorporating policies based on different institutional rationale and taking account of stakeholders' views.

The second suggestion is to consider the laissez-faire approach, with a market open to all, particularly in healthcare technology, that maximises competition and improves transparency, efficiency and VFM. In Ireland the system is more open the contextual environment is more mature but it still shows a preference for local and European companies. Social and economic policy is a huge question, particularly in Saudi Arabia since in practice the cost preference to local firms and SMEs is added to the transaction cost to benefit three or four main shark players in the market. This means that the government pays more than the international price and creates a new type of communication which delays the arrival of information in the market and extends the time required for communication and negotiation. Instead, the Saudi policy makers should open up the public procurement market and remove all the obstacles described on this research to comply with the Saudi vision of attracting FDI. Ireland's experience of direct investment can teach other countries that more than 500 companies are currently benefiting from a general investment-friendly environment, employing more than 40.000 in 2020. unlike Saudi Arabia's stringent regulations, which have the opposite effect.

The third suggested recommendation is to adopt the notion of a continuum from fragmentation at one end to ownership and multi-stakeholder engagement at the other. The ownership of the procurement processes (design-tender processes) should be clarified, so as to resolve the internal conflict between the language of the administrative staff and that of the end user.

The fourth suggestion is to motivate and reward procurement officials for innovative solutions and budget saving. The Irish case study shows evidence that this goes on, although innovation would benefit from more effective communication during the processes. But procurement officials are not motivated to save money or innovate as two outcomes expected by their superiors. To the latter, procurement officials are very sensitive; they try to innovate even though it might expose them to legal challenges and compromise their integrity. With regard to saving money, they believe that any saving in costs may be reflected in cuts to future budgets imposed by the central budgeting bodies. The regulations are implemented in general without taking account of the nature of the industry, product characteristics or implications.

At the practical day-to-day level

For procurement and supply practitioners, the processes are fragmented and include at least three phases: pre-tender, tendering and post-tendering. The research has shown that procurement is fragmented and involves various steps of design input at the pre-tender and output stages and the outcome. However, procurement professionals do not use effective

communication and the integration of offers to align the first two phases, which represents a major challenge when it comes to evaluation. Such challenges can be summarised as follows.

1- Not enough accurate data about the quantities demanded, when procurement relies on historical data in Ireland and outdated codes in Saudi Arabia. Many key participants have stated that the volume promised at first is not awarded. Volume is a basic part of the economic logic that should accurately forecast the healthcare demands as closely as possible and this aspect needs to be professionalised.

   While procurement officials in both countries claimed that one of the sources for designing tenders is previous data on similar contracts, there is no central data base to show what problems occur during the process, reports, or feedback (mainly between the tender design and award). Reporting each step and sharing experiences may prevent a recurrence of the same thing. For example, the company awarded a contract to deliver MRI purchased in Ireland had to diminish the wall of an EX-R laboratory because the door was too small, which increased the cost and the delay of the operation. Similarly in Saudi Arabia the Ministry of Health purchased a whole set of MDEs equipment for its new southern hospital. The suppliers found the hospital to be still under construction and had to keep the MDEs in storage for a further eight months. Individual procurement departments do make a personal effort but they do not share these data with the procurement departments of other hospitals or with central departments, which could all learn from both positive and negative experiences. They are anxious that their accountability can be questioned and would like to have no need to acknowledge mistakes, for legal reasons. The solution may be found in digitised software at the point of care which would allow accurate forecasting by tracking and recording every patient's consumption of medical supplies anonymously on a central data base. This could reduce cost, enhance quality and maximise the trust of suppliers that in selling more they could offer better costing.

2- The medical technology market is dynamic and requires better market sounding, but this research found that communication in the pre-tendering and tender stages is in some respects limited. The reason for demanding maximum communication is its benefits for transparency, accountability and procurement. Comprehensive digital communication is proposed in section 8.4, which would allow procurement officials to obtain the most recent data on the market without interacting directly with suppliers in the pre-tender phase. When interaction is required the lesson can be learned from Ireland that equal

information shared with all those involved in tendering improved innovation, the environment and the saved energy cost.

3- Procurement communication is not only in speech; the tender notice and solicitation documents should clearly communicate the needs and details of the requirements to the providers. Clear documentation helps suppliers to compete and write offers in reply based on what they have understood. Clear tender documents also show the suppliers quickly whether or not they are qualified to bid, which saves effort on their part and the time spent on evaluation by public servants.

4- The standard life cycle of medical devices is between 18 and 24 months; manufacturers ether improve a product or replace it within two years (Wizemann, 2010). However, other industries show evidence that the procurement cycle takes twice as long as the product life cycle, leaving a gap between the procurement strategy when the market is sounded and the award of a contract. The delivery of the product is outside of the scope of this study, which concentrates on procurement planning and implementation, but it is certainly something that could be investigated in future research to complete the picture of the time span of procurement.

5- Finally, the award criteria must be designed to aid objective judgement. For example in Ireland the award criteria and sub-criteria have to be weighted at the tender design stage for the sake of consistency and objective scoring when it comes to evaluation. Saudi, however, inserts many terms and clauses to guarantee that the product's quality will meet the specifications. Linking the award of a contract to requirements is so difficult that procurement at the evaluation stage ends up by adjusting the award criteria to fit the best offer. Hence a more flexible approach is needed; for practitioners to communicate with suppliers, trust in the authorities and accountability are needed.

6- Procurement consists of many stages, but they should be dealt with as a single interrelated interactive process; therefore, the people designing the tender should be involved in the evaluation. To ensure a smooth process, the procurement manager at least must be aware of all aspects of the design.

8.4. Research Limitations

The study sought to provide a comprehensive knowledge of current procurement practices in Ireland and Saudi Arabia. Despite the uniqueness of using a qualitative comparative approach

in this research, it has several limitations. The first is that the nature of comparative analysis is to explore the many challenging procurement factors in order to draw comprehensive conclusions. The richness of data and the complex nature of public procurement made it immensely challenging to reduce the amount of repetition in the analysis. When respondents talk about something, for example, in the pre-tender stage they may link it to the award stage with which it is closely interrelated. Moreover, to improve the flow of the research and obey the university guidelines on the permitted number of words many results to do with quantities, market research, and feedback were omitted from the case studies.

To limit the number of words, the study focused on the healthcare sector, particularly the medical devices, for its two cases. Its second limitation was that it focused on one industry in the health sectors of two countries, so as to maximise the accuracy and validity of findings. This may have limited the possibilities of generalising to other sectors or industries, testing quantitative findings on a larger scale and focusing on either their orientation or implementation. The fourth limitation was that the poor quality of the e-tender documents made quantitatively significant measurement impossible. Instead to overcome this challenge, such data are visualised see chapter 4 (section 4.7.1) and were used to develop the interview questions and triangulated with the participants' answers.

The fifth limitation was that the opinions of suppliers and buyers differ over various features of procurement, particularly transparency, cost and quality. However, in this research both perspectives were reported with a technique that traced their actual practices. For instance, CAP1S denotes that the supplier's involvement at an early stage of the procurement may impact on his ability to win a tendering contract. The research follows this with CAP6B, which confirms that this is correctly aligned with the overall principles of procurement such as transparency and equal treatment. Another example suppliers offer a significant saving of one of the Hospital, however when I traced the finding the procurement official reason was their saving might reflected on future budget to be cut or reduced.

The sixth limitation was that the qualitative data analysis was one of the greatest challenges presented by the research. International comparisons carry the risk of losing the argument, particularly in the complex domain of public procurement. It was challenging to control and analyse a large amount of data derived from approximately 40 hours of interviewing. It emerged that NVivo qualitative analysis software does not effectively compare factors and actors' interactions in two different settings. The complexity of the procurement functions and the similarities and differences of the processes underlay the decision to analyse the data

manually. The goal of this research was to engage with data from two different countries and move beyond a descriptive case study by matching within-case patterns and cross-case syntheses. The analysis comes from comparing the perspectives of the various stakeholders in a way that related to the research question.

The seventh limitation touched on external validity. A qualitative research approach was chosen because a quantitative approach would not have yielded enough data to explain the reasons behind the current problems and opportunities. Despite efforts to ensure a balance in the variation sampling strategy, the sample of clinicians was limited. Still, most of the suppliers encountered in both countries had worked as clinicians before changing their careers. However, the external validity may have been compromised because data were mainly collected from stakeholders on the micro- and meso-level. It was not possible to interview EU Commission officials or members of the Saudi Crown Council. The variation between the attitudes of the participants in Ireland and those in Saudi Arabia was evidence that the interpretation of qualitative matters is a subjective process. Finally, the findings were not compared in great detail. However, key findings were compared, which may support the validity of the findings and proposed lessons that could be learned from the similar and different problems of the two chosen countries.

8.4.1 Theoretical limitations and final thought

Public management sciences, particularly public procurement, constitute a relatively young field of study that draws heavily on the pre-existing social and human sciences, including organisational behaviour / psychology, economics, and sociology. Public procurement context is complex multi-discipline field Spencer (2004, p.1) involving , political, legal, market, finance, and the theoretical. Consequently, the range of theoretical perspectives to be found in public management research is at least as wide as in any of those antecedent disciplines and are still developing. In this context, theory becomes all the more (not less) important because it provides a basis for all-important understanding contexts, which colour the relationships between and within various disciplinary branches of inquiry. Thus, when it comes to choosing a theoretical underpinning in a management study such as this, any expectations of being able

to definitive conclusions of a causal or absolute nature need to be adjusted upward (Macro) downwards (Micro) - the best of I was

hoped to do is to add to knowledge in the field by identifying tensions incrementally, dilemmas and unresolved questions conflicting logic between the political orientation of adaption of social economic and environments and efficiency restricted by regulatory requirement of transparency, accountability and multi-stakeholders rationale within the organisations.

Although public procurement is a multidisciplinary field context, this study examined how the political sequence is institutionalised through regulations and practices in two different contexts (Saudi Arabia and Ireland). Governments worldwide use public buying power as a tool of achieving economic, and societal wider objectives, at the same token specifically securing the best value for money for its citizen demands. However, the use of the theory is limited to understand a persistent problem implementing the social, economic and environmental objectives, This research combined the concepts of coercive institutional pressures (e.g., to achieve social economic and environmental objectives) with the notion of neo-institutional rationale, such as professionalism, managerialism, and market rationale, in order to gain a better understanding at a practical level, according to Townley's (1997) position that institutional logic is an important factor influencing responses to isomorphic pressures. To understand those pressures this research integrated stakeholders (eg., experts stakeholders' power, capacity to interpret, communicate, design and award or resist isomorphic pressures and reflect back to institutional rationale.

This can only be understood by invest gating institutional pressures, mapping processes in specific context based on each regulatory framework. Thus, to understand the communication, award criteria practices and outcomes tested in this research in two different contexts. However, to follow logic of understanding public procurement practices (the regulatory procurement guidelines are investigated in sections (5.8. and 6.7.) chapter 5 and 6 for each

system, and tested by asking individual stakeholders what their stake, rule, and how to perform in day to day practices. Based on the stakeholder's explanation figures (5.7 and 6.8) chapter 5 and 6 drown for each case. This was not enough to understand the practical elements and what is the outcomes of public procurement, however, communications between various stakeholders were also mapped in each context within the institution (clinicians and procurements), and amongst other parties involved on public procurement contract such as suppliers' consultants' individual stakeholders. Although the study examines various factors and actors to understand public procurement outcomes, it provides a comprehensive view of the complex nature of public procurement integrating macro and micro views of institutional and stakeholders' theories.

8.5. Future Research

This research opens a new research avenue in public procurement. The avenue can be divided into political, regulatory, communication and awarding practices.

8.6.1 Political environment

This research found that political research can shape the regulatory and procedural rationale dominating public procurement in the medical device sector. However, some areas of research need more exploration. They are the political agenda and socio-economic factors such as SMEs and environmental factors, and changes in political systems with a well-established regulatory regime.

The first avenue that needs investigation involves the socio-economic factors that seem to take priority on all political agendas (at least in Saudi Arabia and Ireland). However, the practice suggests otherwise. That is to say, this research found that MEAT and lowest cost, the two main sets of criteria, are believed not to promote the SMEs and not to promote environmental factors, although in the vision of Europe and the Saudi kingdom SMEs are at the top of all concerns. So the question that arises is why no clear institutional pressures influence the

awarding criteria. This research assumed that institutional pressures would shape the awarding criteria, but there is no evidence to that they do. Does the institutional theory then fail to explain the role of political pressures in shaping the market and economic rationale? Do the politicians seek to change their system to fit with their political agendas? Structuration theory may explain the role of agents and systems and the duality and equilibrium of the system. On the basis of structuration theory, it is probably other agents (e.g. corporates) who dominate the markets and shape the rationale to fit in with their agendas.

This raises another research question for future research: the political environment is currently stable in the two chosen contexts, which may enable the evolution of the political and regulatory systems to converge and build a certain pattern from the outcome. But what would happen if the political system in either country changed? Suppose Saudi Arabia, as a member of the GCC, unified its procurement system as it is seeking to do now? How would the regulatory system change? Saudi Arabia, according to the interviewees, is rejecting its present regulatory system because it wants change to be faster and smoother; but what if Ireland left the EU? These scenarios seem hypothetical, but theoretically the dis-institutionalisation of the public procurement framework may be investigated. This could easily be the subject of future research, taking a case such as UK to depict the political divorce process and its implications for the public procurement system.

8.6.3. The regulatory environment and public procurement

Regulatory frameworks were developed for the purpose of maximizing taxpayers' welfare. The two case studies above provided two frameworks which to some extent fulfilled this purpose. However, research is required to investigate the possible integration of different rationale in the regulatory framework. For instance, technology, simplification, and transparency are three intertwined concepts that are based on different rationale. In Ireland the regulatory framework seems to do better than the Saudi ones in regulating technology, processes and regulations. Socio-technical theory is proposed to depict and visualise the current public procurement system in the Saudi Arabian and Irish contexts. This research did not use socio-technical theory, although it seems to be able to bring a fruitful understanding of the interactions between different elements in the system and may improve the system's efficiency and effectiveness through setting a regulatory framework that not only regulates the contracts and processes, but also regulates the technology (architecture, its use and deployment) to enforce certain regulatory values (e.g. transparency, fairness, and equality of treatments)

8.6.4. Communication practice

The third avenue for research built on the present research findings is the use of communication theory. The use of communication theory is hardly ever noted in the literature to explain the harmonisation and transparency of the public procurement process. This research depicted communication in the pre-tender and tendering process. However, it did not cover the post-tender process or the pre-pre-tendering process, when some suppliers have been noted to access users on purpose to stimulate demand and influence their view of their needs. This finding has not been documented in this research because it is beyond the scope of the current research objectives. But if preferential communication in the pre-tender process of writing tendering documents by the government may play a role in the outcomes, it is more to be expected that communication between suppliers and users before the needs are identified may play a role, and one which may not be accessible to SMEs. Thus, a future researcher could use communication theory and models to investigate possible communication between suppliers and users before the tendering process and could show how this communication might use the tendering documents in an unfair process.

8.6.5. Awarding Practices

Although the structure of the lowest cost and MEAT awarding criteria are different, in both the cost is the dominating factor, which may be linked to the quest of VFM. This research sought to describe the possible effect of having two different sets of awarding criteria on suppliers' actions (i.e. innovation, cheapness, continuous development. However, theorisation about the role of awarding criteria disclosure and suppliers' ecosystems (i.e., market structure, investment in research and development, and the nature of competition) is still scanty. Thus, signalling theory is proposed to investigate the criteria and weights defined in the MEAT and the market structure. Secondary data on previous MEAT for tenders and the market structure and market data are likely to be of help in portraying the relationship better. According to signalling theory, the type of the signals dismissed may be expected to influence the customers and suppliers of the relevant institutions.

8.6.6. Other future research

Future research using a multiple-case comparative approach may extend the research to other sectors, such as education or defence. Additional research might also consider aspects of a

country's healthcare to learn more about the differences in procurement practices and nuances in different stakeholders' practices. Government procurement involved in investigating the ownership of tender design and processes among many stakeholders may be a fruitful topic of research. Since this study explores only the procurement practices that mainly use qualitative data, further empirical study in the context of Saudi Arabia will help to deepen the understanding of the findings highlighted above. Different geographical, sectoral and governance structures may usefully be considered.

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APPENDICES

Appendix A: Ethical approval letter: (1) DCU (2) Ministry of Health Saudi Arabia
Appendix B1: Initial framework used in the interview.
Appendix B2:The interviews question based on multi-stakeholders
Appendix C: Step of data analysis
Appendix D: Secondary documents list

Appendix A: Ethical approval letter : (1) DCU (2) Ministry of Health Saudi Arabia

1- Approval Dublin City University (ethics committees)

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

Mr Dhafer Al Ahmari

DCU Business School

23rd May 2018

REC Reference: DCUREC/2018/072

Proposal Title: Public procurement

Applicant(s): Mr Dhafer Al Ahmari, Dr Paul Davis

Dear Dhafer,

This research proposal qualifies under our Notification Procedure, as a low risk social research project. Therefore, the DCU Research Ethics Committee approves this project.

Materials used to recruit participants should state that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made to the REC.

Yours sincerely,

Donal O Gorman

Dr Dónal O'Gorman
Chairperson
DCU Research Ethics Committee

DCU Research & Innovation

Taighde & Nuálaíocht Tacaíocht
Ollscoil Chathair Bhaile Átha Cliath,
Baile Átha Cliath, Éire

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2- Ethical approval (MOH) Saudi Arbia

المملكة العربية السعودية
وزارة الصحة
الوكالة المساعدة للتخطيط والتميز المؤسسي
الإدارة العامة للبحوث والدراسات

وزارة الصحة
Ministry of Health

وزارة الصحة
21-05-2019 16-08-1440
1440-1891605

الموضوع: بحث الطالب/ظافر الأحمري.

سعادة/ مدير عام الشؤون الصحية بمنطقة الرياض المحترم
ص. لسعادة/ مدير مستشفى الملك سلمان بالرياض المحترم

السلام عليكم ورحمة الله وبركاته،،،

إشارة إلى موضوع الطالب/ ظافر عبدالله الأحمري، المبتعث من وزارة التربية والتعليم لدراسة درجة الدكتوراة في تخصص " المشتريات وسلسلة التوريد " بكلية إدارة الأعمال بجامعة مدينة دبلن بجمهورية أيرلندا، رقم السجل المدني (١٠٥١٨٤٣٢٦٤)، وعنوان البحث: " مقارنة بين أنظمة المشتريات العامة في المملكة العربية السعودية والأيرلندية في حالة الأجهزة والمعدات الطبية ".

نحيطكم علماً بأن الطالب قد استوفى كافة المستندات المطلوبة وتمت مراجعتها من قبل اللجان المعنية بالإدارة العامة للبحوث والدراسات ولجنة الأخلاقيات المركزية بوزارة الصحة، وتمت الموافقة على تسهيل مهمة إجراء هذا البحث، وحيث أن الباحث سينفذ جزء من دراسته في قسم المشتريات بمستشفى الملك سلمان بمنطقة الرياض.

وعليه: نأمل من سعادتكم التفضل بالإطلاع والإيعاز لمن يلزم بتسهيل مهمته بعد موافقة الجهات المختصة لديكم ، لجمع البيانات اللازمة بما يضمن أن لا يكون هناك أي تأثير على خدمة المراجعين خلال قيامه بمهام بحثه، مع العلم بأن وزارة الصحة تضمن حقوقها في نتائج هذا البحث من خلال إتفاقية المشاركة في البيانات والتي تم توقيعها بين الباحث والإدارة العامة للبحوث والدراسات.

وتفضلوا بقبول خالص تحياتي ،،،

مرفق مستندات وملخص المقترح البحثي،،،

مدير عام الإدارة العامة للبحوث والدراسات

١٤٤٠/٩/١٦

ص. عذاري بنت فيصل العتيبي

e-mail: research@moh.gov.sa

For translation, please click twice on the Pdf file

Kingdom of Saudi Arabia
Ministry of Health
Central IRB
GDRS

المملكة العربية السعودية
وزارة الصحة
اللجنة المركزية لأخلاقيات البحوث
الإدارة العامة للبحوث والدراسات

اللجنة المركزية لأخلاقيات البحوث بوزارة الصحة

Central Institutional Review Board

National Registration Number with NCBE-KACST, KSA: (H-01-R-009)

Approval Letter

Date: 21/05/2019
Central IRB log No: 2019-0070E
Category of Approval: Exempt
Affiliation: Ministry of Education

Dear Dhafer Alahmari
The Central IRB-MoH pleased to inform you that submission dated 17/05/2019 for the study mentioned below was reviewed and approved.

Protocol Title	Comparison of Saudi Arabian and Irish Public Procurement Systems the case of the Medical Devices and Equipment
Principal Investigator	**Dhafer Abdullah Alahmari**
Affiliation	**Ministry of Education**
Documents Reviewed	Study proposal, CV, Request for exempt status, PI statement, signed consent form, MOH data base information, signed Data Share Agreement, Questionnaire E, supervisor statement

Decision:
The Central IRB **was approved** the protocol according to ICH-GCP. Approval is given for **one year** from the date of this letter.

Approval Conditions:

- Abide by the rules and regulations of the Government of Saudi Arabia, NCBE, Central IRB and the IHC-GCP guidelines.
- To conduct research as per the approved documents.
- Research participant confidentiality should be protected at all times.
- All researchers are required to have current and valid certificate on Protecting Human Research Participants (NIH or NCBE certificate).
- Amendment to the approved documents, the Principal Investigator is required to advise the Central IRB for its approval before implementation.
- You are required to submit a Progress Report every **6 month.**
- If PI is unable to complete your research within the validation period, he will be required an extension letter from the Central IRB one month before the expiry of the approval.

e-mail: GDRS-IRB@moh.gov.sa

Kingdom of Saudi Arabia
Ministry of Health
Central IRB
GDRS

المملكة العربية السعودية
وزارة الصحة
اللجنة المركزية لأخلاقيات البحوث
الإدارة العامة للبحوث والدراسات

- Document Retention: all study documents should be kept by the Principal Investigator for a period of **5 years** from study completion.
- This letter gives you an ethical clearance to implement your study according to the approved documents and you still need to obtain administrative approval from the site/s where the study will be conducted.
- **At the end of the study**, please submit Final Report including the results or copy of the manuscript intended for publication to MOH data base: www.marifah.gov.sa

We thank you for submitting your study for review by the Central IRB-MoH and wish you all the best with this study.

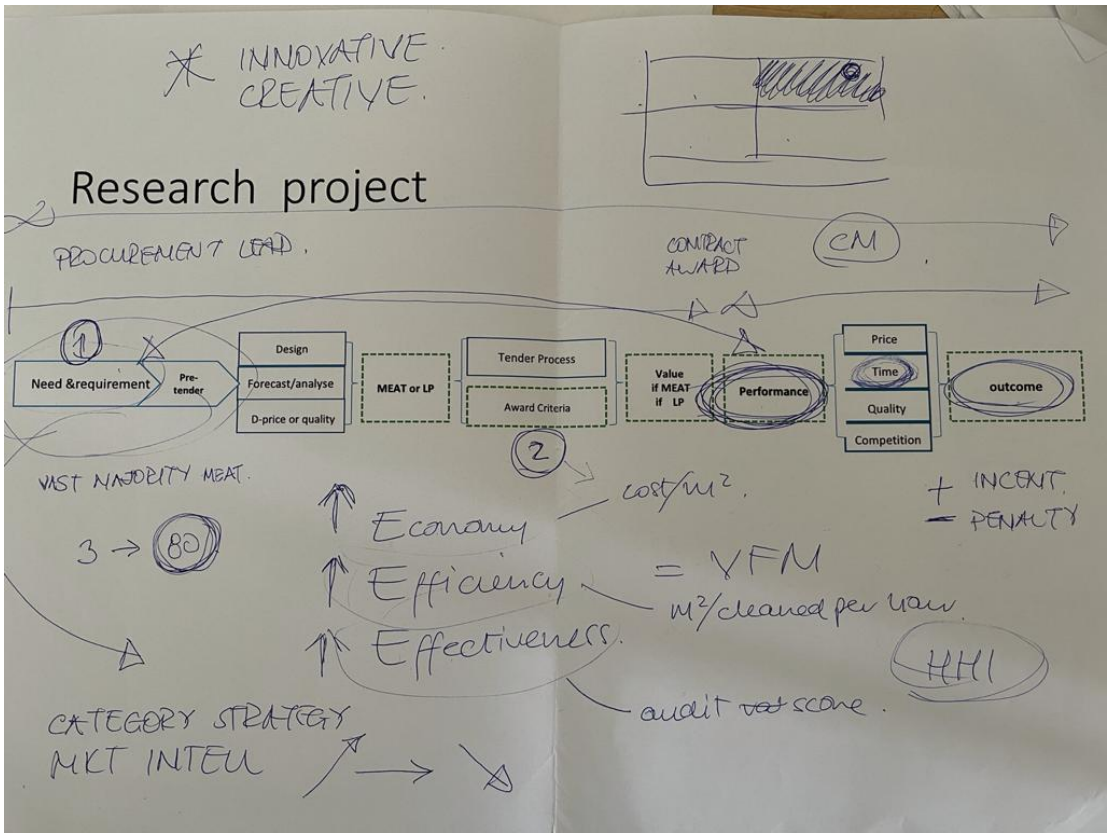
If you have any further questions, feel free to contact me.

Sincerely Yours,

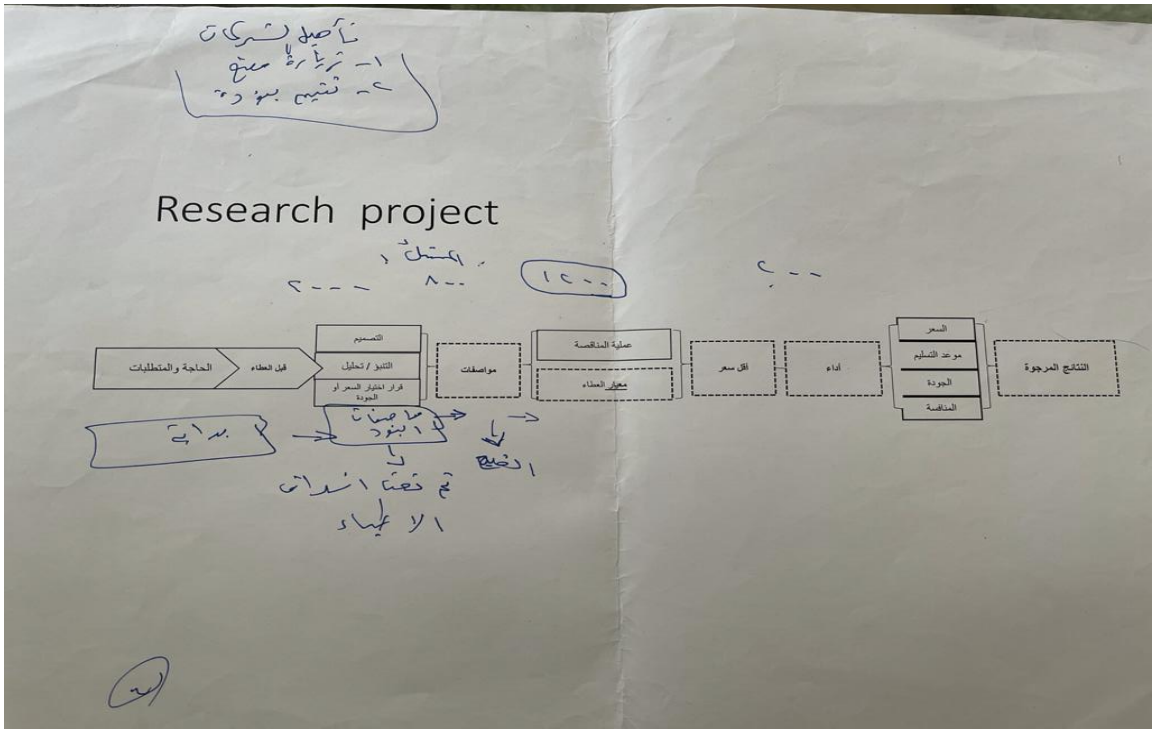
Dr. Hisham M. Aziz - M.D
Consultant
Central IRB-MOH Chairman-KSA
Phone: + 966 11 2125555 Ext. 4337
e-Mail: haziz@moh.gov.sa

e-mail: GDRS-IRB@moh.gov.sa

Appendix B: Initial framework and interview questions



Saudi Arabia

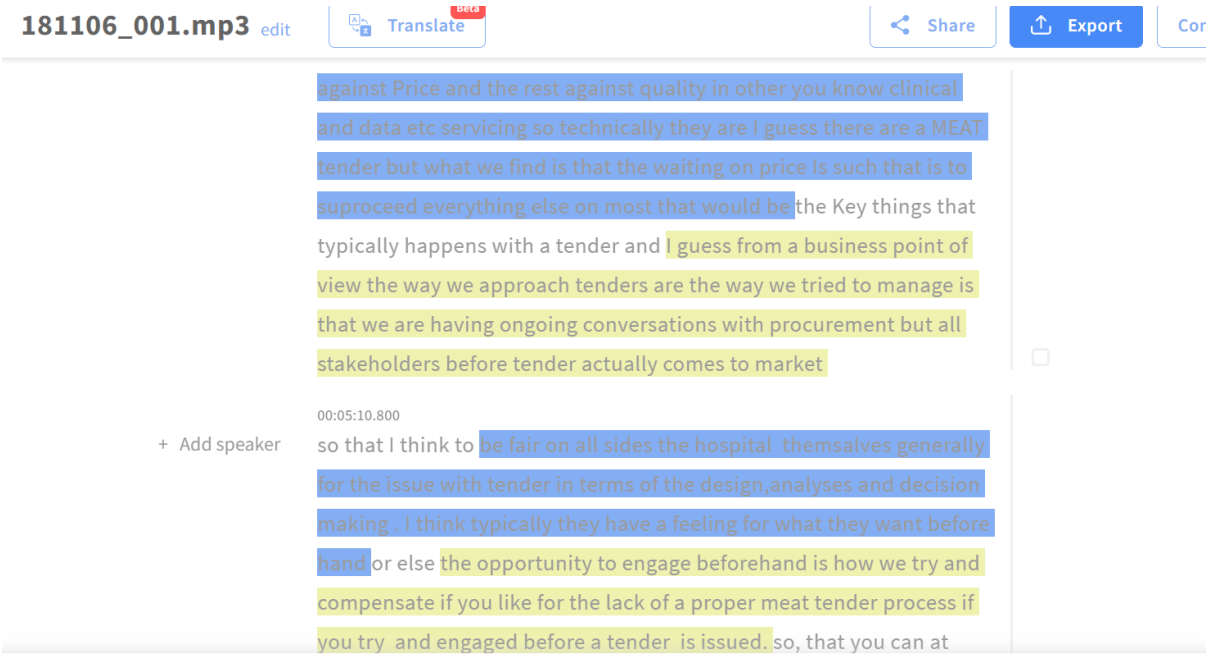


	Suppliers	Clinician	Admin in hospital /Government Buyers Official	Industry Consultant
Political	What are the external political factors that impact on procurement functions?			
	How could they influence the procurement outcomes?			
	How important is the social and environmental elements enforced at practical institutional level?			
	Do you think the political orientations and trading off objectives of (e.g.., transparency, innovations, Involvement of SMEs in medical devices contract, green environment can be seen as tangible outcomes? Or this can go against your daily practices? Can you give an example ?			
	How does or is the political views is contradicted with your view within the organisations?			
Regulatory	What are the regulatory issues that may affect the public procurement system activity and outcomes? Give examples			
	What element of regulations that you find usually restricting your organisation for getting best value for money from your available resources?			
Procurement directive and Process	What value do the new directives of 2014 and 2016 add to the procurement process functions and outcomes? Any simplification or complexity? What is the result of these changes?			
	How does the EU directive institutionalise within your organisation? What elements that may not aligned with your practices?			
	Do you think regulations are aligned with the daily practices ? can you give an example			
	As no clear guideline of how to adapt many elements within the award criteria(e.g., innovations, involves SMEs and green use of MDEs) how do you consider them within the award criteria.			
Process	How do you see the public procurement process? Easy? Complicated? Why and how?	How do you prepare for tender? Could you please take me through the steps of planning in your organisation?		
		How do you write the technical specification of a certain MDEs? can you describe the processes, and we will draw that together on this A3 sheet?	How do you write the tender documents, can you take through steps of biding activities and we will daw to complete this basic model? What are the biggest challenges that you face in everyday practices? Would you say the final decision of the tender documents is for procurement department or other departments?	How do government formulate tendering documents? What are the most important factors that you consider shape the specification documents?
		Who decide the weighting score of quality, cost and other elements?		
Communication	How clear do you think the tender notice and procurement documents are?	How do you and the procurement team work together to write the specification? Who are the decision makers buyers or clinicians? How do you involve suppliers on the procurement design? What type of technology you used to communicate within your institution ? How effective do you think it is for the effectiveness of your work? How do you exchange information with suppliers and how do maintains transparency and equal of treatment, sharing equal information's with participants suppliers?		
	How transparent is the current procurement process? How do you evaluate the communication process with the government?			
Awarding	Which criteria would you like to use MEAT or LP?	Which criteria would you usually use MEAT or LP? Why? What factors that determined your specifications design and evaluation decision? Is cost, quality, or other factors. How do proportionate the award weighting score in the tender documents? what normally you watch, or you think is the most important factors in awarding the contract of the MDEs technology?		
	How does the choice or weights of this criteria affect the outcome of the process?	What are the proportion of quality would you like to see on the tender documents? How do you consider innovations designing MEAT or LP and making decision of evaluation? Do you think the award criteria is objective or subjective that you may change at the evaluation stage based on offers received ?	What are the proportion of quality would you like to see on the tender documents? How do you consider innovations designing MEAT or LP and making decision of evaluation? Do you think the award criteria is objective or subjective that you may change at the evaluation stage based on offers received ?	How does the choice or weights of this criteria affect the outcome of the process?
	As you received a feedback at the end of each tender processes? Who do you end seeing winning the procurement tender(lowest price bidders or the higher quality)			
	How many percent do you see located			

Appendix C: Steps of interview data analysis

1- Example of Transcription

Step one the audio records transcribed via (scribe software DCU). at the same time, I went through the audio, checking words and sentence to make sure of the accuracy of words, sentences. Further, highlighting importance check of text, matching each colour with the deductively pre-determined themes.



The second step is data formalisation. Data was transcribed into word files, which in turn read and reread until I felt that I understood the meaning of each interview, open coding, and linking patterns on a word document review comment—trying to assign a meaning to the pre-closed code(themes).

than we would use to MEAT criteria and because it's the fairest one we feel. If you're going to use the lowest price criteria you're going to lose out on the technical abilities that you know of a product or service that you require .Yeah like essentially we want to be fair to everybody and we have to be fair to everybody because of the legislation says that we have to be fair to everybody. We don't want to end up in the situation that we can be challenged by a vendor.

If we're always awarded to one particular vendor or one group of vendors so, we have to be very clear and open about How we have approached a tender process? and How we have scored unscarred on the merits of the product or service that we wish to engage and where they fell down? So if you're dealing with price it's only on price and you are not going to always get the quality and service that you're looking for unless you have specifically limited what are you looking for.

Dhafer Al Ahmari
MEAT

Dhafer Al Ahmari
Legal challenge

Dhafer Al Ahmari
Quality and then price

Dhafer Al Ahmari
Specifying the needs is number one priority to find the characteristics of quality and service required

Data from each context transfer to a table and comments made to match patterns, themes and codes, link it to tender documents and secondary data.

	Legal and environment Ireland		Legal environment Saudi Arabia
PCA1S	• I am taking a deep breath as you can see because ,as far as the HSE is concern everything is now **under tender in medical devices awarded framework**. • we have seen no mini **competition in primary to 2 years plus after the frameworks** and the question would be that are you under the framework if "yes" then price will be negotiated as opposed to done through tender there's no point in would anything other than the objective be them trying to get it at the lowest price fall into place they've been to be nothing after that and so that would be probably 95% of our portfolio. • Unless you are first in the framework you won't get any business • **Transparency**: I don't know, the honest answer, not really, the first thing when you see tender is holding on to what you have and then hopefully you will be winning some new business. so, everybody has the fear of losing business when the tender comes out, I do think you know for (CCB) as soon as we see tender come in you order queries on it. We can go to our legal department and we can get engaged them and asked the queries what the things that can be done and like you mentioned that the EU directives are so big so we have an internal resource that we can use and really on so that is going to be a much bigger Challenge for a small a company. I can imagine. • There are strict guidelines and how we do that and as a big company we would have a bigger responsibility and typically we might be the first to be saying sorry we can't do that because it's **not complying** with our policies and how we do things. Where is maybe the smallest player might do it. • **CSR** are very important, but none of these factors considered on the **award criteria**, • **Pre tender engagement** we would have limited access, or I wouldn't see the openness there as well there to be even asked that information or to be given any information of it beforehand of the tender is how we try and compensate if you like for the lack of a proper MEAT tender process. • I guess **if you're engaging** that at least you've you put your side forward before tender is issued and hopefully take decision makers can feed into that if they need to see the value in that but if tender turns up on our doorstep typically without us being pretty aware that, the initial reaction is that somebody else is or has been involved in that reshaping or pre- tenders and more than likely you would not be the prime supplier expected to win the tender or being in a poor position to win	PCB1S	• The **regulation** was adapted to match the international law and to join WTO 2007, but it is different in practices according to the government admins perceptions, so the regulation say you **must be transparent, fair** and implement the law by the book. But still many aspects of it **is not clear** to both parties involved in the procurement tender. • **Traditional communication with suppliers**. They **are not transparent** for example sometime any suppliers sell rep can access the ministry of health and ask question individually about a certain contract that other suppliers not aware of which could give an answer to one supplier to get an advantageous of wining rather than the others. I think this is going against the equal of **treatment and transparency principals**. • There is **more social consideration than environmental** like, in the pre-specification they company has to provide a certificate of Saudization which is a formal approve the company employ Saudis. • **The information provided in the tender and document notice is somehow unclear**, the quantities is not given correctly, and the law give unconditional power for MOH for example they can cancel the contract at any time, they can reduce the quantities or qualities volume by a half at any time even after signing the contract without taken any responsibility. We are every day hand to heart worry that they might cancel or reduce volume. We are contractors of international company that we always put them under pressure to response to our requirement in short notice trying to live with the government regulations • **Notice information** is important to be transparent, Due to lack information in the contract notice we cannot take a decision it is became a rumpling like situation, we will go and buy the requirement document that may cost 500SR when we get the document requirement we find that we can not meet their requirement in one way or another
PCA2S	• I understand **the Eu regulation** and there is a change recently , I would feel that from regularity point of view maybe it's difficult when you're dealing with, I suppose medical devices, I find that the **price is a very high score criteria** • **Transparency** : yeah, I think it is transparent you know my experience with HSE in terms of their application of the rules. Yeah, it is pretty transparent and for example when decisions are challenged by say, disappointed tenderers, the HSE wins the case because I guess the application of the regulations of transparent it's pretty well transfer. • **Scoring procurement criteria**: we would disagree with say sometimes how the set up or we were disagreeing with their scoring in that but generally, they tend to apply the rules in making **their decision.** • **Pre-tender engagement** No, we don't have an opportunity. We are not consulted in that, basically you know, we are told that we are given the structure and whether meat or not, our product are not particularly complicated so therefore if we had a very unique product or service. Will then yeah you maybe a consultative process or maybe you know made a newer form of procuring in terms of kind	PCB2S	• We are working with government for years, **Issue and complexity with regulation is became the norm**, I would say the regularity framework a **culture to understand** and every purchasing department has their own culture and way of buying things I think procurement in Saudi is more driven by experience. • **Transparent** , we can see more transparent sense they interduce the E-Tender 2018 but still the offers send in envelops. • There are a social and environmental consideration which is a policy you have to satisfy to go to tender. But that would not consider in price or specification

Dhafer al Ahmari
Strict guideline

Dhafer al Ahmari
Large company won't take a project that is not complying with their policy, whereas the small suppliers might do

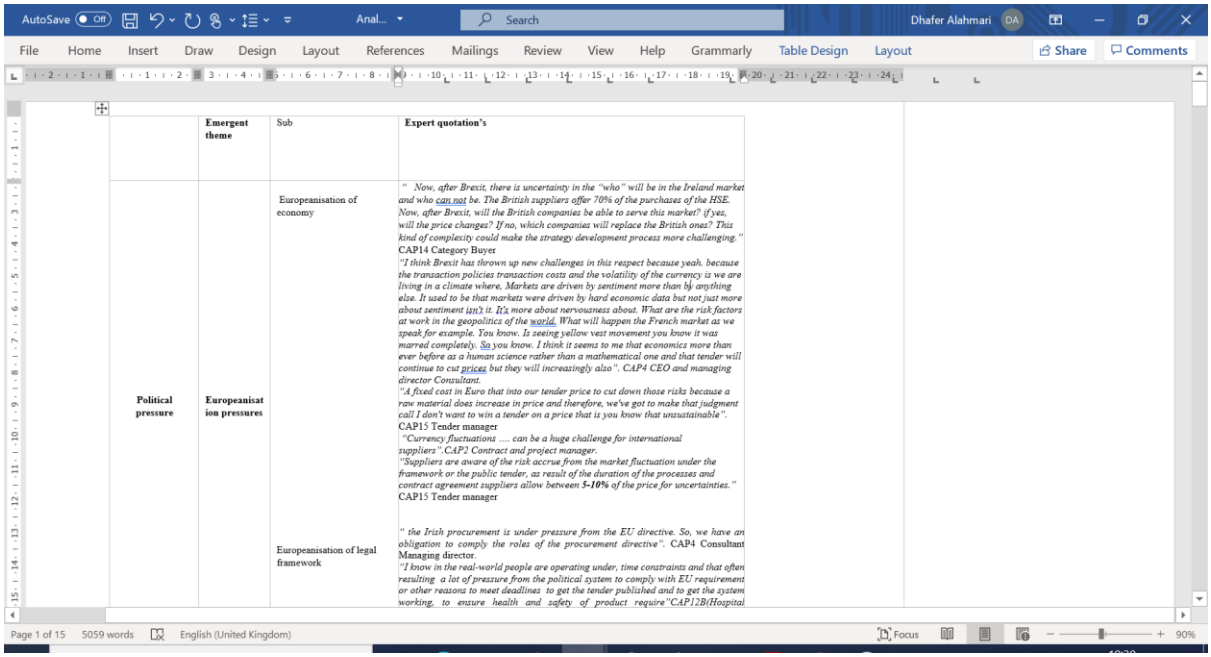
Dhafer al Ahmari
Transparent

Dhafer al Ahmari
Pretty transparent

Dhafer al Ahmari
Applying the rules for decision

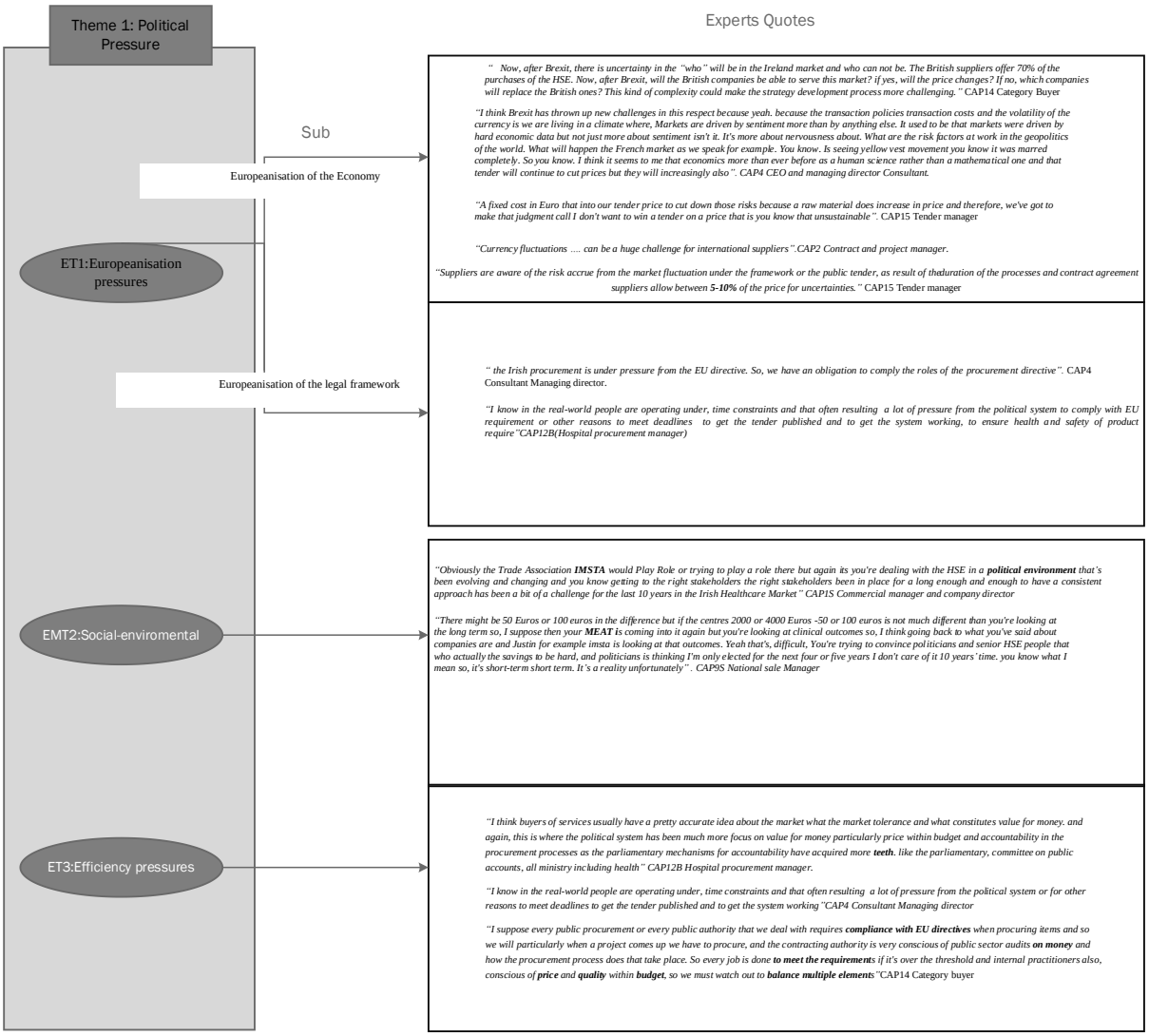
Dhafer al Ahmari
The involvement in pre-tender limited to unique product or service

The third step- I have, matching open cods with pre-defined themes.



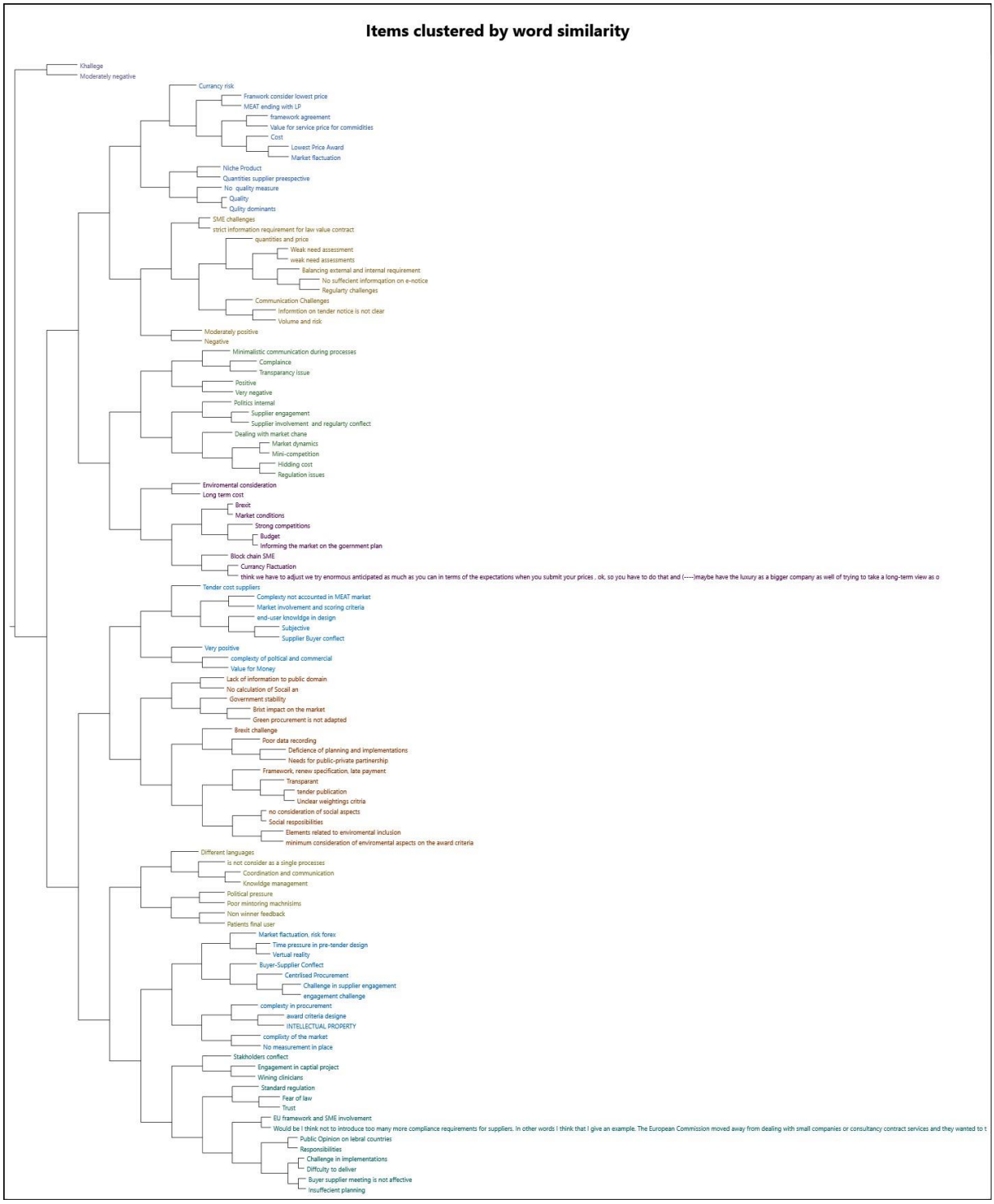
	Emergent theme	Sub	Expert quotation's
Political pressure	Europeanisation pressures	Europeanisation of economy	" Now, after Brexit, there is uncertainty in the "who" will be in the Ireland market and who can not be. The British suppliers offer 70% of the purchases of the HSE. Now, after Brexit, will the British companies be able to serve this market? if yes, will the price changes? If no, which companies will replace the British ones? This kind of complexity could make the strategy development process more challenging." CAP14 Category Buyer "I think Brexit has thrown up new challenges in this respect because yeah. because the transaction policies transaction costs and the volatility of the currency is we are living in a climate where. Markets are driven by sentiment more than by anything else. It used to be that markets were driven by hard economic data but not just more about sentiment isn't it. It's more about nervousness about. What are the risk factors at work in the geopolitics of the world. What will happen the French market as we speak for example. You know. Is seeing yellow vest movement you know it was marred completely. So you know. I think it seems to me that economics more than ever before as a human science rather than a mathematical one and that tender will continue to cut prices but they will increasingly also". CAP4 CEO and managing director Consultant. "A fixed cost in Euro that into our tender price to cut down those risks because a raw material does increase in price and therefore, we've got to make that judgment call I don't want to win a tender on a price that is you know that unsustainable". CAP15 Tender manager "Currency fluctuations .... can be a huge challenge for international suppliers".CAP2 Contract and project manager. "Suppliers are aware of the risk accrue from the market fluctuation under the framework or the public tender, as result of the duration of the processes and contract agreement suppliers allow between **5-10%** of the price for uncertainties." CAP15 Tender manager
		Europeanisation of legal framework	" the Irish procurement is under pressure from the EU directive. So, we have an obligation to comply the roles of the procurement directive". CAP4 Consultant Managing director. "I know in the real-world people are operating under, time constraints and that often resulting a lot of pressure from the political system to comply with EU requirement or other reasons to meet deadlines to get the tender published and to get the system working, to ensure health and safety of product require"CAP12B(Hospital

Before the final step to ensure better presentation, I used Microsoft Visio to prepare, and start up writing the first draft case study, drawing and tabling.



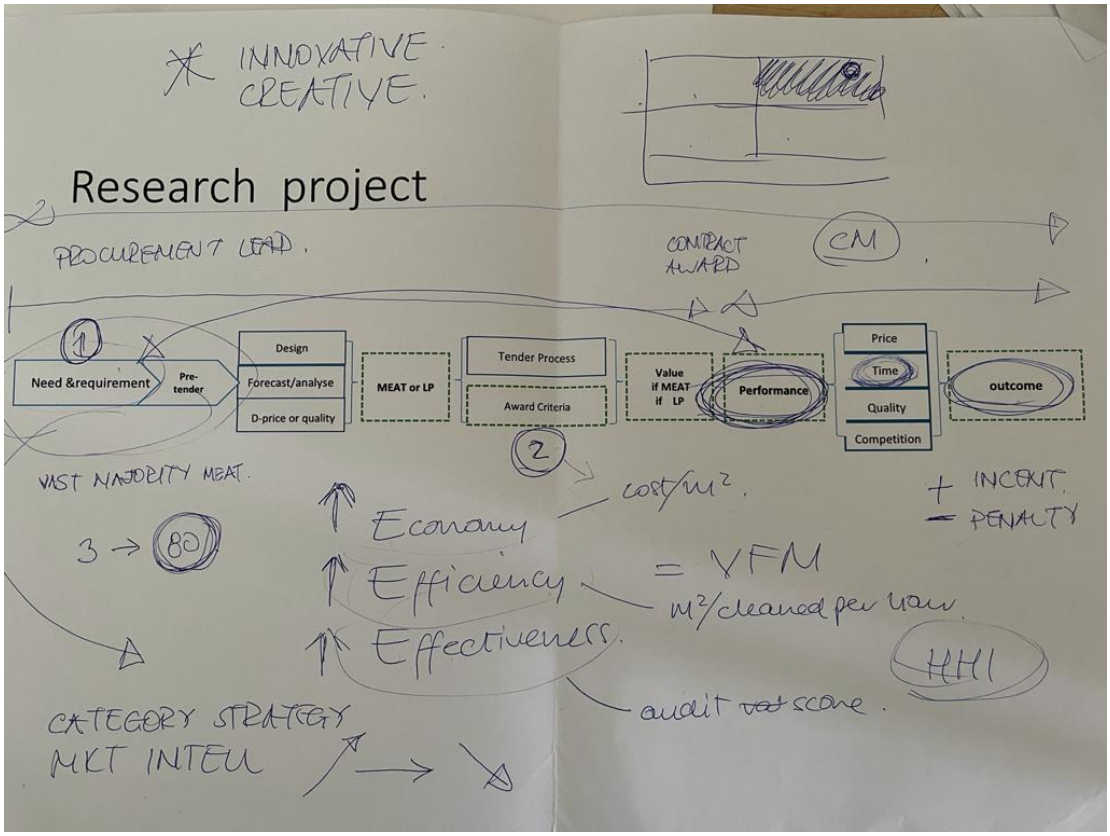
The final step was finalisation and deciding what quotation to be used as evidence, transfers to write up each case study. Then, represented on each section model that delivers the final constructed case studies and results on the chapter(5 and 6) and then triangulated with secondary data explained on the next section.

2- I have learned NVivo 12, I have tried to use the software to analyse the data and save time. However, the experience approved me wrong due to the complexity of public procurement, which needs human intelligence, to construct the case studies.

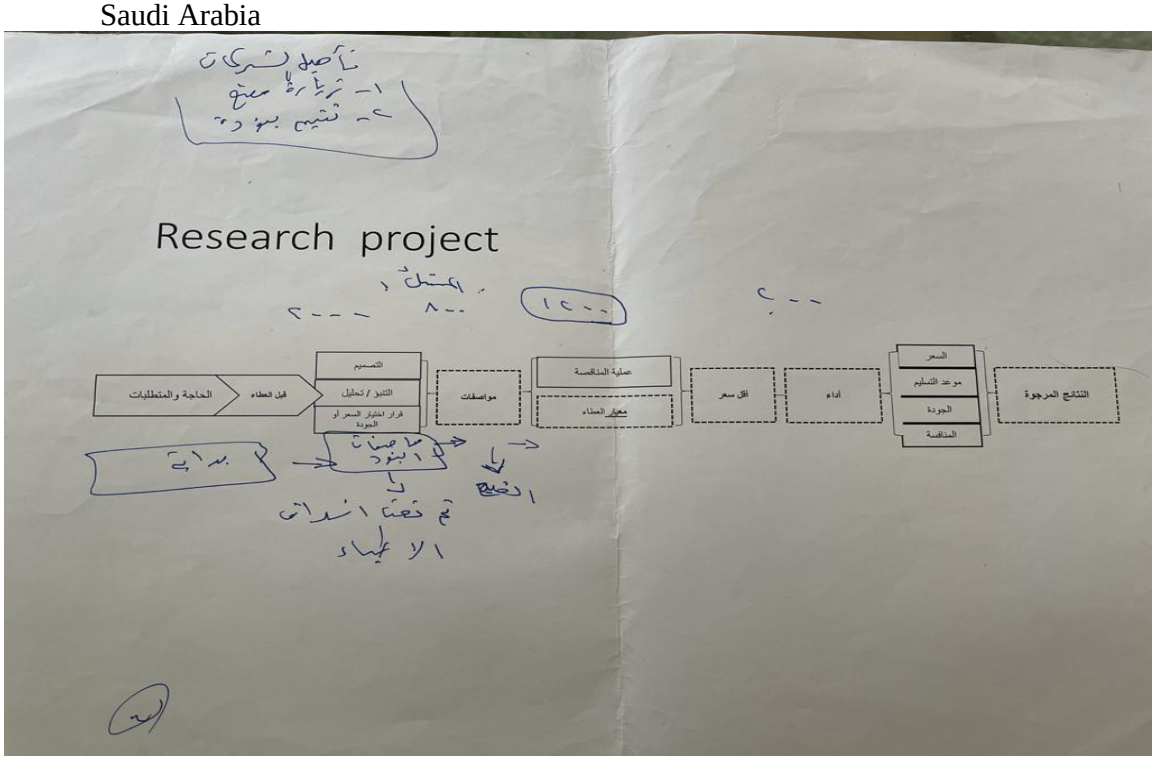


AInitial framework used in the interview.

Ireland



Saudi Arabia



Appendix C: Secondary documents list

EU/Irish Policy Documents		Saudi Policy Documents	
Year	Description	Year	Discretion
1989	Directive 89/665/EEC Review Procedures for Public Contracts	1977	Purchasing Law, Royal Decree no: M I 14 dated 7 I 4 I 1397 AH (1977).
2004	EU Public Procurement Directive 2004/17 and 18/EC Council of the European Union and the European Parliament	2006	Royal Decree No. M/53 4m Ramadan 142/H/27 September 2006, Government Tenders and Procurement.
2008	European Commission (2008a), "European code of best practice facilitating access by SMEs to public procurement contracts",	2019	Government tenders and procurement law (new GTPL) was approved by Royal Decree No. M128/1440 and on 29 November 2019,
2014	EU Public Procurement Directive 2014/24/EU and 18/EC Council of the European Union and the European Parliament,26 of February 2014	2013	Collection of the public procurement law and royal articles(In Arabic)
2010	European Commission (2010) Europe 2020: A strategy for smart, sustainable and inclusive growth", Communication from the Commission, COM(2010) 2020 final, 3 March.	2013	Fourth Economic Development plan, in the Kingdom of Saudi Arabia 2013,royal article No.M98/1438 H.
2018	National Public Procurement Policy Framework OGP 2018	2009	Royal articles collections(personal accesses) MOH
2019	Guideline of public procurement Ireland	2011	Medical devices regulation art 1.12 royal decrees, Interim Regulation Decree number 1-8-1429 is dated 27th December 2008
2017	Medical Devices Regulations MDR 2017	2014	Davis, P. (2014) Procurement and foreign direct investment, consultancy report to SAGIA Saudi Arabia.
2016	European Commission. 2016b. "Growth. Internal Market, Industry, Entrepreneurship and SMEs, Public Procurement Strategy	2017	Saudi Vision 2030. Available from: http://www.vision2030.gov.sa 2.
2012	Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) and the Waste Electrical and Electronic Equipment Regulations 2014 (S.I. No. 149 of 2014)	2018	National Transformation Program 2020. Available from: http://www. vision2030.gov.sa/en/ntp
2014	Incorporating Ireland's National Waste Prevention Programme, A National Strategy to 2020.(EPA, 2014)/(Environmental protection agency Agency 2014)		
2017	EU strategy 2017 /communication from the commission to the European		

	parliament, the council, the European economic and social committee and the committee of the regions		
2012-2019	20 tender documents	2012-2019	20 tender documents

Appendix G: E-tender Documents

1- Sample of e-tender notice Ireland. Please click twice on the Pdf file to see the full document.

Contract notice

Directive 2014/24/EU

Section I: Contracting authority

I.1) **Name and addresses**

Health Service Executive (HSE)
N/A
Sourcing & Contracts, High Street House, Wilton
Cork
IE
Contact person: ,*
Telephone: +353
E-mail:
NUTS code: IE0 - IRELAND
Internet address(es):
Main address: http://www.hse.ie
Address of the buyer profile: https://irl.eu-supply.com/ctm/Company/CompanyInformation/Index/461

I.3) **Communication**

The procurement documents are available for unrestricted and full direct access, free of charge, at:
http://irl.eu-supply.com/app/rfq/rwlentrance_s.asp?PID=131443&B=ETENDERS_SIMPLE
Additional information can be obtained from
the abovementioned address:
Tenders or requests to participate must be submitted
electronically via: http://irl.eu-supply.com/app/rfq/rwlentrance_s.asp?
PID=131443&B=ETENDERS_SIMPLE
Tenders or requests to participate must be submitted
to the abovementioned address

I.4) **Type of the contracting authority**

Body governed by public law

I.5) **Main activity**

Health

Section II: Object

II.1) **Scope of the procurement**

II.1.1) **Title**

Provision of Ultrasound Service for Primary Care locations
Reference number: HSE8093

II.1.2) **Main CPV code**

33112000 - Echo, ultrasound and doppler imaging equipment

II.1.3) **Type of contract**

Services

II.1.4) **Short description**

Provision of Ultrasound Service for Primary Care locations

Estimated total value

2- Sample of e-tender notice in Saudi Arabia

Tendr Id
NPT0043/19

Submission Deadline
16 March 2020

Bid Opening
17 March 2020

Tender Booklet Price
15750 SR

Tender Contact
Contact Address
NUPCO inc.
Tel. No.: (+966) 9200-18184/1045-1048