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Outsourcing in Palestinian IT Sector: A Qualitative Study

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Declaration of Authorship

I, Rawan Khader , declare that this thesis titled, “Outsourcing in Palestinian IT Sector: A Qualitative Study” and the work presented in it are my own. I confirm that:

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- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given and with the exception of such quotations, this thesis is entirely our own work.
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Abstract

Palestinian IT sector is a young and small sector. Software outsourcing plays a major contribution in it where the local companies offer outsourcing as a major role of their business model. This act of outsourcing is usually driven by motivational factors from a side and discouraged by other obstacles and challenges from the other side. Motivations and challenges of outsourcing have brought the attention of researchers across the world and a lot of studies can be found in the literature discussing this. However, there are no existing studies that discussed outsourcing in the Palestinian IT sector. We conducted an exploratory multiple-case study in a real Palestinian industrial contexts that involved four software development outsourcing companies. We aimed to explore and understand the motivational factors and challenges of outsourcing in Palestinian IT sector. This study showed that the practice of software outsourcing is a vital driver for development companies in the Palestinian IT sector that is driven by quality, followed by cost and lastly by the geographical distances. These elements form the three main motivational factors that foster software outsourcing in the Palestinian IT sector. Another important reveal of our study is that software outsourcing companies pay a lot of attention to quality and to client satisfaction to build sustainable long-term relationships that can be used as a competitive advantage. We also revealed that the geographical location of Palestine made it a good outsourcing destination for outsourcing projects. Another important outcome of this research is a proposed model for the outsourcing in the Palestinian software sector.

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List of Abbreviations

GSD Global Software Development.

Chapter 1

Introduction

We are living in a vast world where globalization made it so easy to share knowledge and experiences all over the world. Professional practitioners can export their knowledge and experience not only within their countries, but also to the whole world. This act enabled businesses to take a strategic move, they opened their organizations for outsourcing on a global level, which in turn helped them to be more successful and thrived their businesses.

Outsourcing is defined as obtaining (goods or a service) by a contract from an outside supplier [1]. In software development, outsourcing is a contract between two parties, a client and a vendor, where the client offers all or parts of a software development activities to the vendor organization, and in return for these activities, the vendor provides remuneration and benefits back to the client [2].

On one hand, software development companies are seeking outsourcing to achieve better cost optimization, gain access to world skilled capabilities, enhance flexibility and risk sharing among others. On the other hand, outsourcing comes with a set of risks that can result in project failures, geographical barriers between the client and vendor lead to lingual and communication obstacles which may lead to misinterpretation of some business requirements and without a doubt this leads to poor software project [3]. Further, cultural and time zone differences, the diversity of communication and coordination can't be ignored because it can make or break the software project [4]. All of these challenges lead to quality issues and potential project failure.

Palestinian IT sector is relatively a young sector, it is also a small sector when compared either to neighbouring countries IT sectors or to the global sector. Outsourcing is a major contributor to the economy of the Palestinian sector, most of the well defined Palestinian IT companies offer outsourcing as a major

role of their business model. Such sector just like any other IT sector in the world, shares common factors regarding software outsourcing, some of these factors put Palestinian IT sector as a competing client for outsourcing in the MENA region, while other factors prevent and discourage software outsourcing in the Palestinian IT sector.

The advantages and challenges of outsourcing brought the attention of researchers across the world and a lot of studies can be found in this field. In our research, we reviewed the recent literature that relates to software outsourcing development. Our literature review identified and analysed 22 papers, these papers discussed three outsourcing classifications: global software development, factors that motivate software outsourcing and software outsourcing challenges. The literature review revealed that despite the wide interest and the great achievements that have been made in the software development outsourcing all over the past years, there is still a lack of studies that followed a qualitative exploration approach. It also showed the need for more research to explore the IT outsourcing within the real-world industrial contexts.

There are little information available about the Palestinian software development practices that can be found in the literature [5] [6] [7]. This is due to a number of reasons like the freshness of the field (i.e. it's a ten to fifteen years old field) and the lack of academic focus on this particular field. This lack of information becomes so clear when we talk about software development outsourcing. This is the main reason that motivated us to explore this field, its motives and limitations. We approached this by using an exploratory multiple-case study research method. This method opened the door for exploring and revealing important insights and helped formulating new perspectives on the Palestinian software development outsourcing. In our multiple-case study investigation we worked on four different cases, each of them represents a local software company that is specialized in software outsourcing services. The interviewees of these companies were software leads, managers and directors. They have good access to the companies practices, resources and staff. We collected the data from these multiple-case studies, analysed the data and reflected it to the software development outsourcing factors extracted previously from our literature review. This study represents a genuine attempt to explore the software development outsourcing in the Palestinian development companies.

This study reveals that software outsourcing is an major driver for software development companies in the Palestinian IT sector. Additionally, the main motivational factors that foster this act of outsourcing are quality, followed by cost and lastly the geographical location, all local companies pay a lot of attention to

quality in order to build a sustainable long-term relationship with the client.

This study also shows that one of the main challenges facing the outsourcing companies in Palestine is the lack of domain experts in advanced fields, which impacted the capabilities of Palestinian outsourcing companies to achieve higher level of globality and competitiveness. Another factor revealed by our study is the fear of risk investing in Palestinian companies due to the political issues in the area which has a bad effect on the competitiveness and the seek of globality of the local Palestinian outsourcing companies. A final important reveal of this study is a proposed model for the outsourcing in the Palestinian software sector.

1.1 Aims and Objectives

This research applies a qualitative approach to understand software outsourcing in the Palestinian IT sector. Our overall aim in this study is to explore and understand the factors that foster software outsourcing in the Palestinian IT companies. Our objectives are:

- Objective 1: Understand how Palestinian IT sector perform outsourcing in terms of detailed business model and the factors that foster outsourcing.
- Objective 2: Understand to what extent geographical barriers influence outsourcing in the IT sector in Palestine.
- Objective 3: Explore the factor of cost reduction and how it influences investment in the Palestinian IT sector outsourcing.

1.2 Outline

The remainder of this report is structured as follows. Chapter 2 discusses the current state of the art in software outsourcing and the related studies. Chapter 3 presents the methodology we followed to conduct the multiple case studies approach. The results are explained in Chapter 4. Chapter 5 shows a detailed discussion of our results. Finally, Chapter 6 contains our conclusion and discusses future work.

Chapter 2

Literature Review

2.1 Introduction

Modern day technologies and their continuous improvement harmonize with the various means of communication in the world. The new communication channels are more effective and efficient. Surprisingly, third world countries excelled their countries in this aspect; Globalization was one of the main factors that makes knowledge easier to share and insured that people become more experienced in their fields. This enabled businesses to gain great opportunities if they have the right investment in such outsourcing. This research tackles the software development outsourcing, its motives and its limitations.

2.2 Literature Review Method

In this research, we followed a critical literature review approach in which we selected a variety of resources. These resources include IEEE Xplore, ACM digital library, and Google Scholar. Critical literature review is an original, analytical and perceptive approach that helped us understanding the state of art and lead to an effective assessment of the previous work [8].

After resources selection, we applied our search string that included the terms: “Software outsourcing” , “IT Outsourcing” , and “Information Technology Outsourcing” . We have used a backward snowballing research method in which we have looked backward to all the references in the search result papers citation graph. After the backward snowballing, a forward literature research was con-

ducted to extract the most recent papers and contributions in outsourcing. By the end of this search, 40 papers were selected, reviewed and evaluated to see if it fits our scope of work or not.

To reduce bias, a randomly selected set was selected and reviewed by the secondary reviewer after the primary reviewer selected, reviewed and evaluated the papers.

The inclusion criteria we followed to determine which studies will be used to extract information focused on the papers that describe IT outsourcing and written in English language. Studies related to IT outsourcing before 2013 were excluded.

The literature review was conducted on the final result set that contained 22 papers, the papers discuss three outsourcing classifications: Global Software Development, factors motivate software outsourcing and software outsourcing challenges.

2.3 Global Software Development

In the last decade, numerous of software development companies tried to increase their business earnings by enhancing the time needed to ship their product to the market, and reducing costs by hiring people from low wage countries. It's common to find many software development projects distributed among many different sites. And usually these sites are located in different countries. This distributed scheme of software projects and software project management is called Global Software Development (GSD) and engineering discipline that has been built around it is called Global Software Engineering. Many companies in the world embraced GSD in order to reduce costs of software development, and ease access to skills, resources and cutting edge technologies [9].

Khan et al. [2] defined the GSD as the process in which the organizations shift part of their development activities across the boundaries.

One common aspect of GSD is its high complex process. Casado-Lumbreras et al. [10] stated that GSD is a complex and challenging process for both academic researchers and industrial practitioners. This is due to its highly diverse, intrinsic

and complex process introduced by the interactions between people, organizations and technologies across different countries, cultures and nations that hold different languages, background as well as working and cultural styles.

The term GSD can be seen as a software development process that involves multiple teams from different geographic locations. In recent years, the trend and adaptation of the software development project is driven by the technological advancements that facilitates its application and management [4].

2.3.1 Software Development Outsourcing: An Overview

The idea of outsourcing is an old idea, Ross Perot back in 1962 was one of the first persons who discussed the idea of outsourcing [11]. After that, the outsourcing started to flourish and expand over the past decades to meet organisation's needs for development of IT projects as well as for managing them [12]. One of the first known software outsourcing was made by Eastman Kodak back in 1989 when he decided to outsource multiple IT projects [13].

Outsourcing can be defined as handing over part or all of business process activities to an external third party [3]. Software development outsourcing is an engineering paradigm [14] that has the following characteristics:

- A customer (i.e. outsourcing enterprise or client) and an IT supplier (i.e. vendor organization).
- An IT project, which can be all or part of software development project.
- An agreement to provide services from the vendor to the the customer in return for remuneration [15].

Kazmi et al [13] defined software outsourcing as the process of exchanging projects, resources, tasks or activities in a distributed environment to an external organisation or an enterprise. It can also be defined as a contract between a client and a vendor, where the client develops software activities to the vendor in return of remuneration and benefits [2].

There are two types of external service providers, local and international. The local service provider is located within the same country of the customer, while international provider resides outside the customer country [16].

Companies usually tend to keep their product development and management inhouse, but factors like the lack of required skills, resources and technical staff, the high cost of development and the salaries local high cost push the companies to outsource their software development [9]. This may lead to enhanced quality, cost reductions and more knowledge sharing [3].

Outsourcing takes many shapes, companies may pass the ownership of some or all of its development activities to an outsourcing party. Another point to mention is that the act of passing software development activities may be within the same country, or most commonly, the pass will be for an external provider outside the country, which we call offshore outsourcing [16].

Over the past years, outsourcing noticed high growth and increasing demand. The software development market showed a 3.5% growth worldwide in 2013 and is expected to grow with a percentage of 4.7 in the upcoming 5 years [17]. We can also notice that some countries seek outsourcing more than other countries, González et al. [17] stated that Spain, Finland and United Kingdom demand for software outsourcing is increasing much faster than other European countries in the past years.

One of the most significant factors that determines the success or failure of IT outsourcing is the relationship between the customer and supplier [15]. A good cooperative relationship between the customer and supplier will achieve shared beneficial goals that leads to a sustainable relationship. This type of long term, sustainable, and respected relationship is what we call a software outsourcing partnership.

Some researchers, like Ali et al. [18] focused on the critical success factors of Software Outsourcing Partnership (SOP). They identified that “mutual interdependence” , “shared values” , “mutual trust” , “effective communication” , “organisational proximity” and “quality production” are the most vital factors that lead and sustain a long term software outsourcing partnership.

When outsourcing their software projects, companies seek to get world-class resources, professional skilled developers, better focus on their core activities, cost reductions and better presence in global economy [19]. Haider et al. [3] mentioned that companies outsource their services to be served by the best talent pool, and reduce development time to complete the projects more quickly.

Despite the good motivations for outsourcing, companies may suffer from risks like communication problems, different geographical locations with different time

zones and cultural issues which may lead to client-vendor conflicts and result in project failure [17], [3].

2.3.2 IT Outsourcing in Public Sector

The increasing demand for outsourcing by private organizations formulates a major part in IT outsourcing. In the past years, a new outsourcing trend appeared for software outsourcing in the public sector [20]. IT outsourcing is becoming a widely adopted and important tool at all governmental levels. A good example of this is the Australian government, where it outsourced more than half of its software projects [21].

Several studies has been conducted to analyze the benefits of IT outsourcing in the public sector. Governments benefit from the advanced technical staff, skills, resources, cost reductions and the chance to focus on core capabilities [21].

Duhamel et al. [20] conducted an empirical study in 2017 to identify the IT outsourcing best practices in the public sector. They identified that technical specifications quality and continuity of outsourced project are two main good practices to sustain a good and beneficial IT outsourcing.

2.3.3 Offshore Software Development Outsourcing - An Overview

Offshore software outsourcing is considered as one of the trending and growing software paradigms worldwide [14],[9]. The originality of outsourcing is traced back to 1950' s [3] where companies started to offshore their activities embracing different cultural styles and multiple geographical locations [14].

Niazi et al. [22] stated that offshore software outsourcing is a business process for developing high quality software activities in lower cost countries. They defined offshore software outsourcing as a contract between a client and a vendor, where the client develops software activities to the vendor in return of remuneration and benefits. These software activities whether it consist all or part of the development process are performed outside the clients country [9].

Brian J.Galli [4] mentioned that with the beginning of 2000' s, many software companies have turned to outsource all or parts of their business functions to a lower cost destinations or to destinations with more suitable skills and availability compared to their organizations.

Numerous firms from developing countries such as China, India, Malaysia, Ireland, and a lot others have shown a great interest in making offshore outsourcing a reality by capturing outsourcing contracts from the companies in Europe, North America and Australia [12]. These countries have high availability of skills, resources as well as trained technical staffs and low economical environment [9].

Nowadays, offshore outsourcing is considered as a attractive path for companies that want to save the production costs, get access to qualified resources and services with high quality and less effort, focus on core competencies, and achieve a better competitive advantage [10], [23].

Despite the good motivations and advantages of offshore software development outsourcing, there are some risks associated with it. Poor planning, poor communication and lack of collaboration between the client and vendor usually lead to delivery delays and potential conflicts that may result in project failure [2]. Additionally, offshore software development outsourcing encompasses developers from different geographical places with different cultural styles which may introduce complexities and difficulties managing and running the project. These complexities can become major obstacles and may lead to project failure .

2.3.4 Summary

In the past decades, many research papers have been published about outsourcing, these research papers shaped the current state of knowledge in software development outsourcing, and formed a thorough guidance for both enterprises and IT suppliers to manage outsourcing relationships. Researchers also tried to narrow the gap between software development outsourcing research from a side and the outsourcing practice from the other side to make it easier to access, manage and to take advantage of for both practitioners and researchers. Another important aspect is the modern realization of the software companies that outsourcing is an imperative and strategic step for their organizations to thrive and succeed.

Despite the good achievements made in software development outsourcing all

over the past years, a small part of them followed a qualitative exploration approach, and none of these studies was made in the Palestinian IT sector.

2.4 Factors motivate software outsourcing

Usually a lot of discussions will take place before any IT company decides to outsource their business, motivated by several key factors. Many studies were conducted to find and analyze these factors. The following points explain the motivational factors of software outsourcing.

1. Cost Factor

In-house development is expensive, it suffers from high cost of development and hiring talent developers [3]. As a result of this, many companies have turned to software outsourcing in order to reduce the cost and get economic benefits [9]. Ahmed et al. [12] mentioned that IT outsourcing customers usually seeking to reduce the costs of their activities.

Moving to outsourcing can contribute to meet companies needs and expectations, by offloading the work burden to other companies who is obliged to meet a predefined deadline. The mutual benefit of keeping the deadline is an essential characteristic that keeps the client satisfied. This factor will save costs to the client as well, predefining deadlines and setting expectations for costs will save money for the client, instead of developing and managing the project in-house with limited resources and uncertain deadline [3].

Outsourcing also solves the issue of temporary projects. Sometimes, the companies tend to develop software projects that are not permanent in nature as prototypes or research projects. Outsourcing offers the companies a chance to outsource the project without the need to hire in-house employees or the need to pay them permanent wages [13].

Niazi et al. [22] explained that offshore providers typically cut the cost by one third when compared to onshore providers, and much less in comparison with in-house development. This will encourage client organizations to adopt the offshore software outsourcing to reduce the development costs.

One of the major key factors in cost is the human resources. Human resources represent about 70% of overall development costs. Organizations tend to reduce this cost by outsourcing. The Wages Report in 2012 showed that the average wage of a software developer in the Britain and United States is (\$46,736 and \$76,000) per annum respectively. On the other hand, Indian and Chinese developers in the similar positions gain an average of (\$6,353 and \$18,640) respectively [23].

Casado-Lumbreras et al. [10] conducted an exploratory study applied in one of the African countries, Nigeria. They explained the reasons for adopting Nigeria as a sourcing country. The authors chose two Nigerian-based companies of African and European practitioners and investigated the motivational factors behind the sourcing decision. According to African perspective in Nigeria, cost reduction is the third motivator for sourcing projects in Nigeria. However, all European respondents stated that the main attraction for sourcing projects in African countries such as Nigeria is the cost reduction.

To explore the key motivational factors of applying IT outsourcing for e-Business needs, Hamzah et al. [16] conducted a research in the Malaysian SMEs to investigate these factors. They observed that client organizations outsource their businesses in order to reduce costs. Reducing costs improve the company financial position.

González et al. [17] found through a survey applied in the major Spanish companies that companies with smaller staff numbers and fewer resources seek outsourcing mostly for economic reasons. While the larger sized companies resort to outsourcing for improvement reasons.

Ferraro and Rodriguez [19] discussed the effects of Information Technology outsourcing in the United states economy. They mentioned that the cost savings is an important feature to both global corporations and U.S citizens. This can be achieved by giving the firms the opportunity to lower their labor costs which eventually lead to lower the price of services on American consumers. This will also allow American companies to compete in the worldwide economy. In contrast, they found that some unintended result of IT outsourcing is the increasing cost of development. Companies may not actually save the money when they move to outsourcing, this depends on the company' s circumstances.

Xia et al. [24] performed a case study in a Chinese IT outsourcing company that includes more than 2000 employees to identify the factors that have positive effect towards customer satisfaction. Cost effectiveness is one of the most critical factors that affects the customer satisfaction. The authors showed that even though the service delivery is good, if the cost is too high then the demand for services in the future will decrease. Companies always try to make a trade-off between the quality and the cost in order to achieve customer satisfaction and control the development costs.

2. Core Competencies Factor

Outsourcing allows organizations to focus on their basic competencies and activities [3], by outsourcing the non-core functionalities to an external party, and keeping a better eye and focus of its core services. This way, organizations will put the emphasis on areas where it has a competitive advantages and offer better services to their customers [16], [19].

González et al. [17] empirically evaluated the factors that motivate Spanish software organizations to move toward outsourcing. Focusing on their core and strategic issues was one of the most important factors. Strategic reasons is a key goals why large size companies resort to outsourcing.

3. Technical factor

Sometimes, software organization can't achieve their activities and goals due to the lack of technological knowledge, resources, or IT infrastructure. Doing these activities internally may lead to quality risks, and therefore project failure [17], [3]. In such cases, software organizations tend to outsource their activities to some outsider organization that have the available resources and skills [9], [24].

Client organizations typically seek access to cutting and leading edge technology when outsourcing their projects [16]. This can be possible by developing a close relationship with vendors to get a fast and easy access to these technologies [17].

Khan and Imran [2] addressed the factors that facilitate offshore software development outsourcing for the last couple of decades, the availability of appropriate infrastructure is one of these major factors.

Hamzah et al. [16] assessed the IT outsourcing in the Malaysian SMEs, they concluded that SMEs suffer from limitations such as the lack of IT infrastructure and technical knowledge, therefore, IT outsourcing is a good approach for SMEs to accelerate their processes.

4. Human Resources factor

One of the key factors that companies accessed when they decide to move to outsourcing is the ability to access a skilled best talent pool of resources [3]. Doing this, enables client organizations get the services from qualified professionals and will avoid them the recruitment problems [17]. All of these factors contribute in improving the quality of software projects [3].

Ferraro and Rodriguez [19] said that outsourcing gives the companies the ability to access the world-class competencies. Khan and Imran [2] state that the opportunity to access a qualified human resources is an important offshore motivation for organizations.

On the side of outsourcing countries, the existence of skilled professional workers gives the country an advantage to outsource, Khan et al. [9] mentioned that China and India are the pioneers in offshore software development outsourcing due to the presence of skilled workers.

5. Speed factor

When a software company isn't sure whether it will achieve the required task at a specific time or not, they generally try to transfer the task to an external provider who a good expertise in the field and can deliver the task on time [17].

Haider et al. [3] stated that when outsourcing project operations, organizations can take advantage of time differences between home organization

and outsourcing organizations and keep the development process up and running for 24 hours a day. This will help the company to accomplish the project more quickly and on time.

6. Quality factor

Software technology is evolving fast, all technological companies are urged and pushed to cope with the fast movement of technologies, if not, they will find themselves behind and lose their business to their competitors. Keeping up with the latest technologies is not an easy thing that all companies can do. Outsourcing is becoming one of the solutions that companies use to achieve proficient services using excellent technical skills offered by the vendor companies achieving better quality and faster delivery to the market [3].

When a software company suffers from the lack of experts in some area of development, they will transfer it to another company that has qualified workers in that particular area. González et al. [17] stated that outsourcing offers a chance to improve the quality of services due to the access to highly qualified workers and technical resources.

Brian J. Galli [4] pointed out that offshore software development outsourcing can improve the quality of services, which can be considered as an advantage point to client companies.

7. Global Market Access Factor

Software companies usually have different types of projects, the diversity of these projects improve their competitive power and capture larger market share [24]. With limited resources, infrastructure and expertise, companies can't develop and maintain all types of projects they are seeking by only developing them in-house. Companies tend to outsource some of these projects to other companies that have good expertise and resources to achieve these projects with a minimum guaranteed quality and in shorter time periods [3].

Ferraro et al. [19] stated that corporations that outsource part or all of their projects are given a significant chance to compete against other corporations who don't do so, and hence, a better chance to compete in the global market. Simply because outsourcing offers building innovative products and services with lower costs compared to building these products and services in-house.

Hamzah et al. [16] has pointed out that outsourcing allows software companies to improve the used technology and build new business innovations. This leads to new sales channels and higher access to the global market.

2.4.1 Summary

Software development outsourcing is a contractual business for software products. In the previous section, we discussed outsourcing motivational factors, that ranges from cost reduction, focus on basic competencies, access to skilled talent pool of resources and cutting edge technology. All of these factors give organizations better competitive advantages as well as better presence in the global market.

2.5 Software Outsourcing Challenges

Outsourcing surely comes with its own risks. When an organization decides that it wants to outsource, where its work will be outsourced must be chosen wisely. A company must keep in mind all the challenges it can face during this period of time. The following points tackle these challenges.

1. Geographical barriers

Geographical distances between the client and the vendor may lead to communication obstacles, specially when both client and vendor speak different language, This may lead to misinterpretation for the business processes, which may result in poor software project [3].

Offshore software outsourcing usually involves people from different geographical locations and cultural backgrounds. These barriers cause absence of good communication methods like face to face meetings. It also may lead to lack of awareness between the different teams about the work details, schedules and statuses of the others, which may result in code conflicts, bad implementation and poor product [14].

Some research highlighted that nearly half of the software outsourcing projects failed, these failures are caused by many factors. According to Niazi et al. [22], the far distances between the client and the vendor is one of these factors, this is due to its impact of bad communication between the different project team members.

The software development outsourcing is increasing all over the globe. As it grows, many obstacles are appearing on surface due to the geographical distances, lingual, cultural and time zone differences [4]. Khan et al. [9] proposed that geographical distances is one of the main obstacles to offshore software outsourcing. They explained that communication and coordination processes are the two major pillars of a sustainable, long term and successful offshore outsourcing.

Alberto Avritzer et al. [25] conducted a case study to highlight the mechanisms that can mitigate the risks of geographical barriers. They suggested that meetings either using face to face or by video conferences, synchronous meetings or any other suitable meeting mechanism enhance the communication between the vendor and the client and bridges the geographical barrier gap.

2. Intercultural differences

One of the well known definitions of culture was introduced by Sir Edward Tylor, a British sociologist and anthropologist. He stated that “Culture is that complex whole which includes knowledge, belief, art, morals, law, customs and any other capabilities and habits acquired by man as a member of society.” [14] It’s clear from the definition that culture plays a major rule in our life, software outsourcing is no exception. When the culture of the vendor and the client are close, a good fruitful relationship can be established. The lack of these cultural compatibilities introduces the risk of

dispute due to the differences between the vendor and the client.

Siffat Ullah Khan and Muhammad Ilyas Azeem presented an exploratory study in offshore software development outsourcing to discover the intercultural challenges faced by vendor companies. They identified that language, national and organizational cultures are the main critical intercultural challenges for vendors in offshore software development outsourcing relationships [14].

According to Niazi et al.[22], cultural differences are one of the major challenges that face Asian vendors when dealing with clients from North America and Europe.

Delen et al. [26] conducted an experimental study on 30 outsourcing and service delivery companies in Netherlands. They found that cultural differences plays a significant role in outsourcing, the mismatch between the organization culture and the service provider plays a significant factor in increasing or decreasing the chances of a good successful deal, while in case of domestic outsourcing, cultural differences doesn' t play any significant effect.

Cultural differences can be reduced by adopting better communication styles like face to face meetings, cultural training, cultural ambassador. Adopting modern development methodologies like agile and scrum can also mitigate the cultural differences [9].

3. Confidentiality risk

In recent years, confidentiality and privacy become a major important aspect that most organizations don' t take easy or granted, especially when they outsource their organizational and customer' s data. Confidentiality risk is classified as a critical risk the organizations pay attention to [3].

Confidentiality risks according to Hamzah et al. [16] includes the loss of any valuable information belongs to the organization like competitive advantages, strategic plans and other important data.

Kazmi et al. [13] stated that outsourcing pushes organizations to share their private information with the vendors organizations, this raises the risk of losing personal information.

Ferraro and Rodriguez [19] stated that organizations must make sure that their important client data is secured and protected. Data breaches should always be taken seriously and customers ask for guarantees that their data is kept safe and secure.

4. Loss of control

Hamzeh et al. [16] discussed the dependability issue between the client and the vendor companies. When a client company contracts a vendor company for a service, the responsibilities of delivery is moved to that vendor company, which creates a dependability on the service provider from a side, and loses the control from the client company, this can be a big step for many client companies [3].

2.5.1 Summary

In the previous section, we described the software outsourcing challenges. Geographical barriers, intercultural differences, confidentiality risk and loss of control are the main challenges found in software outsourcing.

We saw how geographical barriers can be one of the most stumbling blocks of software outsourcing that can cause absence of good communication methods, code conflicts and poor software project. In addition to that, lingual and time zone differences are subset among software outsourcing challenges which may appear due to geographical distances.

To mitigate the risks of geographical barriers, organizations tend to choose a geographically and culturally close vendor, this eases the communication between the client and vendor, increases the overlap between their business days and makes it easier to build a partnership faster and stronger.

2.6 Conclusion

Software development outsourcing brought the attention of researchers across the world, many research papers have been published about outsourcing which shaped the current state of knowledge in software development outsourcing, and formed a thorough guidance that participated in narrowing the gap between the software development outsourcing research from a side and the outsourcing practice from the other side to make it easier to access, manage and to take advantage of for both practitioners and researchers.

Modern software companies realized that outsourcing is an imperative and strategic step for their organizations to thrive and succeed, this fostered the act of software outsourcing and globalized it across the world.

Despite the wide interests and good achievements made in software development outsourcing all over the past years, a small part of them followed a qualitative exploration approach, and none of these focused on exploring the IT outsourcing in the Palestinian IT sector.

In this study, we will contribute to the state of knowledge via an exploratory study that establishes to what extent these factors affect the Palestinian IT sector. This study will serve as a reality check and can guide future research directions for Palestinian Software Outsourcing.

Chapter 3

Methodology

3.1 Qualitative research

Qualitative research is an exploratory research that seeks collecting and analysing data to achieve in depth information about the phenomenon rather than breadth information about it. It is most suited in cases that the researcher wants to study the human behaviour and the socio-cultural contexts to uncover trends based on thoughts and experiences. One of the main characteristics of the qualitative research is the deep dive into the phenomenon being studied, in such cases; the researchers prefer qualitative techniques over quantitative techniques due to their limitations in this area. On the other hand, quantitative research technique is

a good fit to answer questions like: how many? and how much?. Quantitative research usually operates in a deductive path. While qualitative research is linked with questions like: how? and Why?. It operates in an inductive path, where we try to gather explanations based on the direct experiences of humans and we seek to build up an emerging theory [27].

In this study, we conducted a qualitative research to understand the software outsourcing in the Palestinian IT sector and explore the factors that foster software outsourcing in the Palestinian IT companies from a vendors' perspective.

In the following sections, we will start with a general introduction about the case study research method followed by a detailed information of the methodology applied in our research.

3.2 Case studies

According to Yin, case studies represent an empirical enquiry that investigate a contemporary phenomenon in depth within its real life context [28]. Case studies are a good fit when the boundaries between the phenomenon and the real life context are not clearly defined. They provide deep understanding of the studied phenomena and provide a detailed qualitative information due to its focus on the natural setting of the studied phenomena.

Case studies are traditionally used for exploratory purposes. According to Sama et al. [29], they can be also used for descriptive purposes as well as for the original exploratory ones. Case study methodology follows a systematic way of looking at the events, collecting them, then analysing the data and report the results back. To achieve this with an accepted quality, case studies should rely on multiple sources for the data [28], [30]. It is also recommended to rely on multiple industrial cases since the context plays a major role in defining and shaping the emerged theory [30].

3.3 Case Study Design

In this study, we adopted a multiple-case study research method, where the gathered evidences and results provide more compelling and appealing conclusions. The multiple-case study research is considered more robust and trustworthy than the single-case research [28]. One of the main downsides of the multiple-case study is the resources and time, it requires more extensive resources and time compared to the single-case study, which in many cases, hard to provide and acquire.

This study investigates and draws results from four different cases, each of them represents a Palestinian software development company that is specialized in providing outsourcing services. Figure 3.1 shows our multiple-case study design approach, this approach was inspired by [28].

In the context of multiple-case study, it is encouraged to define a theoretical frame of reference that makes the context of use of the study clear for both research participants as well as for the results reviewers. This reference can be expressed in terms of the related work of the conducted study [31].

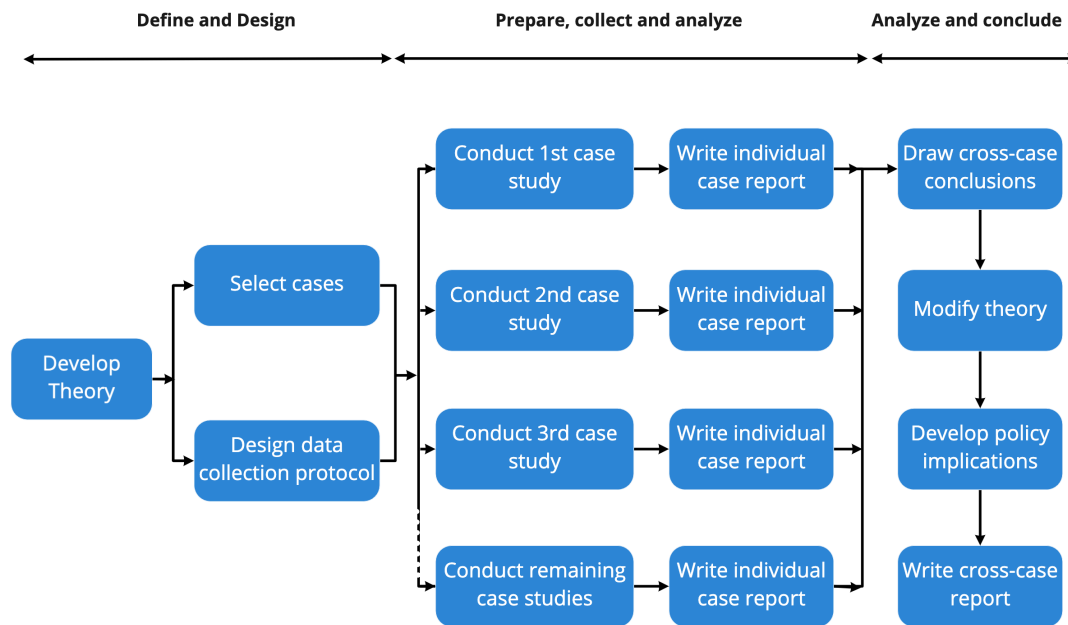


Figure 3.1: Multiple-case study Design [27].

3.4 Research Questions

Following are the main research questions:

- RQ1: How do Palestinian IT sector perform outsourcing in terms of detailed business model?
- RQ2: To what extent do geographical barriers influence outsourcing in the IT sector in Palestine?
- RQ3: How critical is cost reduction as a key factor that influences the outsourcing investment in the Palestinian IT sector?

The research questions helped us to focus on certain aspects of software outsourcing. They also helped us to formulate the data collection protocol in which we formulated the interview questions. These interview questions answers were the main source for our collected data.

3.5 Case Selection and Context

In this study, the cases were four Palestinian software development companies that are specialized in providing outsourcing services. The unit of analysis were a group of top level managers from these companies whom have access to the company policies, decisions and resources. The selection of these cases were based on the willingness of the company's management to help in our research, the availability of the team members as well as the personal relationships between the authors and these companies.

3.6 Data Collection Procedures

In this study, we followed an interview method for data collection. We selected four different cases of Palestinian software development outsourcing companies C1, C2, C3, and C4. After that, we conducted face to face interviews and engaged in focus groups with participants. In the first three cases C1, C2, C3, we conducted several face to face interviews with managers, directors and software leads. While in the fourth case C4, we conducted a focus group interview with three of the top level management in the company, a technical manager, a quality assurance manager and a software team lead. This focus group interview was held in one session.

Data triangulation was applied during this research, specifically during data collection, data analysis and data interpretation phases. In this study, we formed data source triangulation which helped us obtaining more comprehensive data. Following this approach we added more verification, validation and support to our findings [32],[30].

We used three data collection principles to help us apply data triangulation: The first principle is the use of multiple sources of evidence, this was applied by obtaining the data from two sources (face to face interviews and focus groups). The second principle is the use of a case study database, this was applied by storing the data of our case studies in a database that contains all facts and evidence of our work. The last principle is the data validation, this was achieved by generating a data validation report in which we validated and discussed the collected data to check if is sufficient to answer our questions or not [33].

We applied our interviews in a semi-structure fashion. This approach was

proposed by Hancock et al. [34]. This way, the researcher had the full flexibility to ask a pre prepared set of questions, collect answers, ask follow up questions and iterate over misinterpreted ones. The interviewees were given the freedom to express themselves, their thoughts and opinions in an open and free fashion to get the best out from their perspective.

We have recorded what were said and discussed during these interviews, then we transcribed the conversations before the data analysis step [35]. The collected data from the interviews and focus groups were maintained to make it easier to trace directly and to help validate the chain of evidence. We stored the interview transcripts into documents, each of them was stored using an identification code. During the analysis step we gave every sentence a code and linked them to the original document ¹. We spent 3 months in the data collection phase.

Table 3.1 shows our research questions combined with the relevant interview questions:

Table 3.1: Interview Questions

Research Questions	Interview questions
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¹ All details are available at <https://github.com/Rawan-Khader/RawanThesis>

<p>RQ1: How do Palestinian IT sector perform outsourcing in terms of detailed business model? And what are the factors that foster outsourcing from vendors' perspective?</p>	<ol style="list-style-type: none"> 1. What's your view of the status of software development outsourcing in the Palestinian IT sector? 2. How do you evaluate the importance of Palestinian software companies as service providers? 3. What are the business drivers that contribute in considering Palestinian software companies as one of the software outsourcing vendors in the region and worldwide? 4. What do you think your software company should do to improve the process of software development outsourcing? 5. How success is measured in your software organization, what are the factors and key elements you consider to classify the software project as a success one? 6. What are the main factors that prevent and discourage software outsourcing in the Palestinian IT sector? 7. What are the main risks associated with software development outsourcing in Palestinian IT sector from vendors' perspective? 8. What are the strategies your software company follows to mitigate the risks of software outsourcing?
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<p>RQ2: To what extent do geographical barriers influence outsourcing in the IT sector in Palestine?</p>	<ol style="list-style-type: none"> 1. What are the barriers within your software outsourcing company that have an negative impact on clients? 2. How does geographical distance affects decisions and activities of software outsourcing from your perspective? 3. To what extent geographical distance is considered as a key factor in the success or the failure of a Palestinian outsourcing project?
<p>RQ3: How critical is cost reduction as a key factor that influences the outsourcing investment in the Palestinian IT sector?</p>	<ol style="list-style-type: none"> 1. To what extent does cost reduction affect the client's' decision to outsource software projects to Palestinian IT companies? 2. How an IT Outsourcing contract relates to cost reduction as well as to the client's' goal of revenue increase?

3.6.1 Interviews

We conducted several face-to-face interviews with managers and leads of four Palestinian software development outsourcing companies. Each interview involved one person at a time. Face to face interviews is an interactive technique in which the researcher have the ability to clarify the questions for the participants and help in improving the quality of their answers [36]. Each interview contained three main parts; the first one was an introduction of the research. The second one was an introduction about the company and the interviewee work and the last one was the question-answer part in which we asked the interviewees to answer the pre prepared set of questions. Each interview lasted for an average time of 50 minutes.

3.6.2 Focus Groups

We conducted a focus group discussion with a group of top level management in a single software development outsourcing company. We met the participants of the focus group and moderated the session to manage and direct the discussion. This way we made sure that all members of the group had the opportunity to express themselves and their views in an efficient way [36]. During this session, we touched a common view and experience among the participants of the focus group.

3.7 Analysis procedures

According to Clarke and Braun [37], thematic analysis is defined as an iterative method for identifying themes in qualitative data that helps understanding the phenomenon being studied in a particular context. Data collection opens the door for analysis. Analysis should be carried out in parallel with data collection. This practice is encouraged to enhance and enrich the data collection phase. The thematic coding process were reported by several qualitative studies like [28] [30] and [38].

Following are the steps we applied during the thematic coding process, this process was suggested by Clarke and Braun [36]:

1. Familiarisation with the data: this step was achieved and developed by listening to the audio recorded interviews and noting down the ideas.
2. Coding: we identified and generated labels for the important features.
3. Searching of themes: we searched for and identified themes in our data, we also looked for the data that is relevant to each of the identified themes.
4. Reviewing themes: In this verification step, we made sure that each of the generated themes have a specific identity. We also checked that no data is left unsorted in a theme.
5. Defining and naming themes: In this step we wrote a detailed analysis for each of the identified themes.
6. Document analysis: The last step is to document and contextualize our data in our database.

Figure 3.2 shows the steps for the process we have followed.

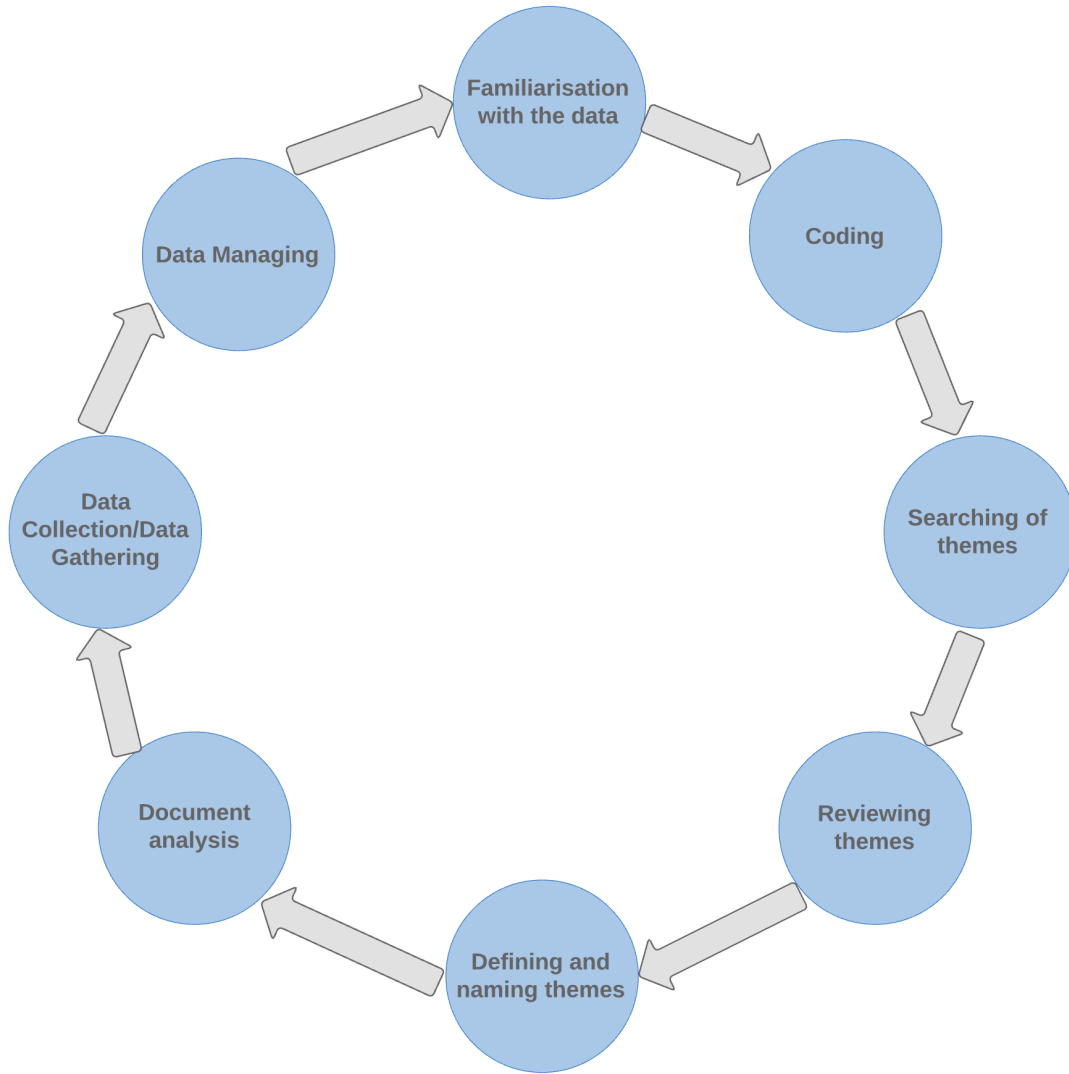


Figure 3.2: Data analysis steps

We analysed the data both within case and across case, this practice has been followed by [28], [39]. Our data analysis consists of a detailed analysis for each one of the cases, followed by a comprehensive cross case analysis for all cases.

Chapter 4

Results

In this chapter, we presented the results of our four case studies. Each case is a local Palestinian company that specialized in outsourcing services. For confidentiality purposes, we called the cases as C1, C2, C3, and C4. We considered companies that have more than 200 employees as large companies. While companies which have 70 to 200 employees were considered as medium companies. Small companies are companies that have less than 70 employees.

The first outsourcing company, C1 is a large company that provides a wide range of hardware and software development services for both local and international clients. The majority of their work is for international clients who are located in United States, France, Israel and Taiwan.

The second outsourcing company, C2 is a medium size company that provides a wide range of both hardware and software services for different international clients. These companies range from big international clients like Cisco and HP to small start-up companies. The majority of client companies are located in Israel, United states and a few of them are located in Europe.

The third outsourcing company, C3 is a medium size company that provides software services for international clients who are located in United states, Britain and Europe.

The fourth outsourcing company, C4 is a medium size company that is specialized in different aspects of software engineering such as web development, quality assurance and system administration. The majority of their work is for international clients who are located in the United states, Europe and very limited work for local clients.

Table 4.1 shows the demographics for our four cases:

Case Study ID	Specialization-Provided Services	Size	International Client Locations	Number of interviewees
C1	Hardware, Software	Large	United States, France, Israel, Taiwan	2
C2	Hardware, Software	Medium	Israel, United states, Europe	1
C3	Software	Medium	United states, Britain, Europe	2
C4	Software	Medium	United states, Europe	3

Table 4.1: Demographics data of the studied cases

The following sections describes the results of our qualitative multiple-case studies with respect to our research questions. The research questions have three main aspects of software development outsourcing for which we drove the interview questions that we sought answers for.

4.1 IT outsourcing in the Palestinian IT sectors - motives and challenges

IT sector in Palestine is a fresh field and software outsourcing is a vital driver for this IT sector as claimed by C3 and C4. A software development manager from C2 mentioned that the main business model in this sector is software outsourcing. A research and development software manager from C1 stated that Palestine has only the option to succeed in the IT sector, this option is outsourcing.

International factors like high demand on software outsourcing services pushed some International companies to give the Palestinian IT sector the opportunity to work with them. This chance was mainly driven by the lack of engineering resources in their markets.

“ These chances and opportunities enabled the Palestinian outsourcing companies to learn, create a good experiences and build good profiles that have put Palestine as a good competitor in the market” - design verification manager from C1 .

Palestinian companies usually approach the client to proof that they have talent. Sometimes they are a good option but not the best due to the high cost of services in Palestine compared with other developing countries like India and Eastern Europe. On the other hand, a software development manager from C2 mentioned that Palestine is considered as a good option for Israeli market due to closer geographical location, similarity of the time zone, and availability for face to face meetings based on the client needs.

A quality assurance manager from C4 said that:
“ Palestinian companies deliver excellent quality that keeps clients satisfied” .
According to software development manager from C3, It is noticed that local Palestinian companies try their best to satisfy client needs. This is due to the good quality of services in Palestinian companies that enables them to compete with international companies.

C3 stated that his company relationship with their client has a great impact on the current state of his company. The long history of commitment, good communication quality and good work quality all over the past years helped them to build a strong, trustworthy profile with their client. This profile has been translated to an expansion of the company in terms of an increase in the number of software development engineerings as well as opening new divisions for engineering and non-engineering departments like customer-support and marketing. These same results has been confirmed by C2. He added that these excellent profiles didn't only help them expanding the operations for the same client, but also helped them to compete other vendors on a global scale. This competitive advantage has been translated into more clients partnered within their company.

All of the studied cases have a common criteria to measure the success of software development outsourcing, they depend on two models to measure this success:

- One time software outsourcing scheme: where client gives their requirements then the vendor provides the software product that meets these requirements on time with high quality and with a predefined fixed cost.
- Continuous software outsourcing scheme: where clients tend to consider Palestinian employees as part of their teams. This usually happen when

vendors meet the clients' expectations, and this usually translates to an increase of hiring in their teams.

Palestinian IT sector has a good competitive force. Palestinian are seeking success and put good efforts sustaining their customer needs and requirements. However, “ *The small population and hence IT communitie size prevents Palestine from being a global IT outsourcing competitor compared to developing countries like India and China*” - technical manager from C4.

Additionally, C1 and C2 mentioned that political issues, high cost when comparing with other developing countries and the lack of experts in Palestine when compared to other countries are all factors that prevent and discourage software outsourcing in the Palestinian IT sector. On the other hand, C3 stated that quality and price of Palestinian outsourcing services are competitive with other developing countries.

According to C1:

“ As Palestinian companies, We hire a huge number of employees when we want to launch a new project. If our company loses the project due to reasons like politics, performance issues or even deadline achievements. These newly hired employees are left idle without work. In situation like this, the company is put in two hard choices of either losing profit by paying them for months without work or releasing them” .

Table 4.2 shows the strategies implemented by the studied cases to mitigate the risks associated with software outsourcing:

Strategy	Case study ID			
	C1	C2	C3	C4
Having an expert team who can hunt and approach new projects.	X			
Building strong profiles with customers they are working for.	X	X	X	X
The presence of experts who can help to reach and compete in projects for large international companies.	X			
Having an organized stream of work to avoid shortage of work between our employees.	X	X	X	X
Having a good relationship with our local universities, to bridge the gap between the academy and industry so we can confidently hire and rely on our fresh graduates faster and smoother.	X	X	X	X
Training fresh graduates in our company to reach for the best who can fit in our company.	X		X	X

Table 4.2: Strategies implemented to mitigate the risks of software outsourcing

4.2 Geographical barriers

Geographical distance is one of the main attractions for the close clients to work with the Palestinian software outsourcing companies. A software development manager from C2 said that:

“ When the geographical distance between the clients and vendors are close, it is easier to build a good relationship with them ” .

Additionally, a research and development manager from C1 mentioned that the geographical distance helped the Palestinian IT companies to build a good relationship with its closest clients. This enabled the Palestinian software outsourcing companies to work with them and build good profiles, it also gave the Palestinian the chance to expand and reach to new clients around the globe using this good reputation and profiles.

The geographical distance between the clients and vendors is an important factor that facilitate or complicate the communication and coordination process between them . But it is not an issue like it was before as claimed by C4. This is due to the advantage provided by the modern digital communication technologies.

These technologies helped bridging the geographical barriers gap between the clients and vendors. So the close geographical distance by itself may not have a big advantage to the client. It is not a priority for the client to see and contact the developers face to face. On the other hand, a design verification manager from C1 still believes that clients prefer to work with vendors whom are geographical close to them.

Most of the studied cases agreed that priority of quality and price take higher advantage compared to geographical distance. According to software team leader from C3,

“Geographical location has low impact comparing to quality and price. I see the two of them (quality and price) to have more direct and noticeable impact than the geographical location” .

However, all of the studied cases mentioned that the time zone difference between the vendor and the client is one of the main consequences of geographical distance. It may lead to communication obstacles especially when there are no overlapping working hours between the client and the vendor. On the other hand, C1 stated that he was part of a geographically distributed team that was spanned across multiple time zones. The client had the advantage of continuous progress and his service were available all around the clock without interruption. This way the client were able to acquire the desired software project in a shorter period of time.

4.3 Cost reduction

The findings from all studied cases revealed that cost reduction is one of the main attractions for the software outsourcing in Palestine. If the cost for developing the software products within the clients company are the same as developing it outside of its walls, the clients companies will avoid the risk of outsourcing their products to third parties.

According to software development manager from C2,

“As a software engineer who worked for many years in the industry and based on my knowledge of the average software engineer salary in the clients countries (i.e. USA and Israel); I would say that the Palestinian engineer costs far less than the American or the Israeli one. From my perspective, cost reduction is a main

motivation that fosters the outsourcing practice in Palestine” .

However, a software development manager from C3, stated that the cost of developing services in Palestine is a not much higher than the cost in other developing countries but Palestinian produce higher quality compared to those countries.

A research and development manager from C1, mentioned that:

“ At the beginning of the project, cost is a critical key to attract clients to work with us” .

After building a good profile with them and after gaining good experience in the industrial field of the client, a new cost agreement can be easily introduced with good acceptance from the client side.

An interesting result was found when a technical manager from C4 said that if the vendor company provide good help to the client and reduce the cost of services without a bad effect on quality, the client will become more willing to put an increasing emphasis and support to keep the good quality of the released products. This usually translates into benefits and expansion on the client side. This same result was also confirmed by design verification manager from C1.

Chapter 5

Discussion

In this chapter, we will discuss the key findings for our case studies and compare them with the state of the art to support our findings. Prior studies have focused on the study of software development outsourcing, its motivational factors and challenges [10] [16] [17]. Few studies have been found in the literature that studied the Palestinian software development practices [5] [6]. None of these studies explored the outsourcing practice in the Palestinian IT sector. In this study, we aimed to explore the IT outsourcing in the Palestinian IT sector, its motives and challenges through an exploratory multiple-case study methodology to increase our understanding of the outsourcing in the Palestinian IT sector and the factors that foster software outsourcing and help the vendors outsourcing company to thrive and succeed.

5.1 IT outsourcing in the Palestinian IT sector - motives and challenges

Based on the results of Research Question RQ1, we found that the IT sector in Palestine is a fresh field that is still having a good expansion and growth. The main driver for this sector is the software outsourcing which helps local companies to grow and prosper.

We found that the high demand on software outsourcing services around the globe is an important motivational factor that helps local companies to succeed [17]. This high demand helped the Palestinian companies to take a fair chance to prove their abilities to thrive and even compete with the traditional global outsourcing destinations like India and China.

The findings indicated that Palestine has a good chance for the software outsourcing projects where the clients are located in a closer geographical location which bridges gaps like time zone differences and availability [4]. This result was promoted by the majority of the studied cases. Some of our cases argued that geographical location has no impact at all in the Palestinians case, it's all about the quality and commitment only.

One important factor that was confirmed by our studied cases was the trust factor. Palestinian software outsourcing companies invest in the relationship between them as a vendor and the client. The mutual trust yields to a more sustainable and beneficial relationship between the two parties. Another important factor is the communication quality between the client and the vendor. All of our studied cases agreed on the importance of the communication quality, this was also confirmed by [9]. Our participants assured that their companies have a good level of communication skills at all of the required managerial and technical levels.

We have noticed that some factors that prevent and discourage software outsourcing in the Palestinian companies; small community size is one of these factor which discourages the Palestinian companies from being a global competitive companies like other developing countries, this is mainly because of the lack of expertise and professionals in highly demand verticals like machine learning, artificial intelligence and DevSecOps. Another discouraging factor is the fear of highly risk investing in Palestine due to the political issues in the area, clients tend to put their investment in a stable developing country rather than a country with high risk of instability like Palestine. The latest factor is a unique finding from our perspective that wasn't discussed or mentioned in the outsourcing literature and can be uniquely addressed to Palestine.

This study confirmed that software development companies are following multiple approaches to mitigate the risks of software outsourcing. Among these practices are building strong profiles, having an organized stream of work to avoid bad utilization of resources, keeping in touch with the local universities to graduate students with good technical and theoretical background and opening training sessions for the fresh graduates to train and filter based on the company's needs.

An interesting finding in our study was the low turnover rate in the local outsourcing Palestinian companies. This was confirmed by most of our studied cases, this is due to factors like the lack of good opportunities specially for the senior and expert engineers. Another important factor is low number of companies that have a sustainable demand for new engineers in the market. One of our

studied cases disapproved with this stating that his company suffers from the high turnover, specially between the mid-level engineers which negatively impacts his company' s business.

5.2 Geographical barriers

Based on the results of RQ2, our studied cases confirmed the importance of the geographical location as a factor that may encourage or discourage the outsourcing practice. Closer clients have more confident and motive to invest in Palestinian outsourcing companies compared to distant ones. At the same time, our cases saw that the impact and importance of this factor decreased in the past years due to advancing technology of communication; ease of contact, video conferences and simple audio applications help bridges the communication gap between the client and the vendor. This result was also confirmed by [9].

Our studied cases also stated that the geographical barriers takes the least priority among price and quality, and its impact can be overridden by the importance of the other two factors.

5.3 Cost Reduction

Based on the results of RQ3, cost reduction is one of the main attractions to software outsourcing practice in Palestine. Similar results were found by Casado-Lumbreras et al.[10].

Our studied cases saw that cost reduction takes a second priority after quality; some clients prefer to work with Palestinian outsourcing software companies despite their higher cost compared to other outsourcing countries due to the better quality and commitment provided to them.

Our studied cases stated that the importance of cost reduction is vital at the beginning of the project, and after gaining the client' s trust and showing the quality and commitment to him, this factor become a secondary and far less important factor.

5.4 The Proposed Model

There are a few outsourcing models that can be found in the literature such as the capability and performance outsourcing model [40] and the relationship and contract dimensions model [41].

Capability and Outsourcing performance model follows the usage of surveys. It focuses on relationship and capability dimensions. One disadvantage of this model is that its measurements for relationship management and capability evaluation are general without sufficient specification for the factors of measurement.

On the other hand, relationship and contract dimensions model follows the usage of interviews and case studies. It focuses on relationship, contract, trust and commitment dimensions. One disadvantage of the relationship and contract dimensions model is that it ignores the capability dimension.

After we analysed our four cases of Palestinian outsourcing companies, and based on our findings. In this section, we suggested a conceptual model for building an outsourcing vendor model in Palestine. The proposed model can help the outsourcing vendors in expand their work with more clients around the world and assist them in applying outsourcing approach successfully.

The proposed model focuses on four dimensions: the relationship dimension, the capability dimension, the economic dimension and the competitive dimension. Relationship dimension represents the association between the two parties, service providers and clients. This relationship is considered as an important factor that affects the IT outsourcing chances for success or failure. Our results indicates that success in IT outsourcing is affected by the nature of the relationship between the client and the vendor. The relationship between these two parties can make or break the outsourcing business. Good relationship result in exchange success and yield to a win-win situation.

Based on our results, the key components of the relationship dimension are trust, communication quality and commitment. These components can be considered as an imperative contributors for outsourcing thriveness and success. All studied cases had an agreement around the importance of the trust factor. Trust leads to successful projects and opens the door for new opportunities not only between the vendor and the client but also with the client's references and partners. Our cases also shed the light on the importance of commitment, it leads to a stronger relationship between vendors and clients. One of the studied cases

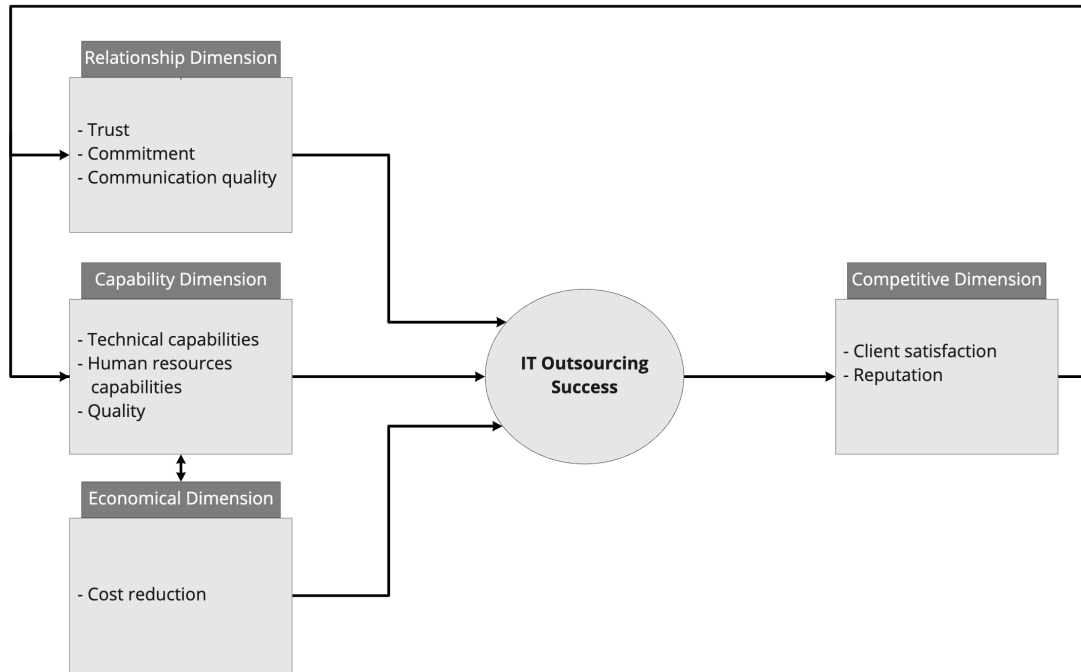


Figure 5.1: The proposed model

claimed that a client who worked with them terminated many projects with Indian vendors due to lack of trust and commitment with them. The client moved these software projects to her company due to the high commitment and the good relationship provided by this Palestinian company.

Another important factor is the communication quality between the vendor and the client. Bad communication leads to gaps between the understanding of the vendor and the actual needs of clients in requirements, specifications, deliverables, milestones and timelines, which can lead to project failures. Similar results were shown by [41] in which they discussed the importance of the relationship dimension between the client and vendor as a determinant key for the success of the IT outsourcing.

The second dimension is the capability dimension. One of the main reasons that pushes clients to outsource their software projects is the lack of knowledge in software technologies, resources, or IT infrastructure [9]. We have touched this in our cases; clients seek talented people who can bend the cutting edge technologies to achieve their needs. Having the required technical capabilities, human resources capabilities with an excellent quality removes the software production burden from their side and gives them the chance to focus on their businesses and unlocks new

opportunities for them.

All of our cases had an agreement around the importance of this dimension. They all considered it the most important factors that fosters the software outsourcing practice in Palestine. Similar results about the importance of the capability dimension were shown by Hamzah et al. [16], they considered it as a vital element in the IT outsourcing success.

The third dimension is the economical dimension, which mainly includes the cost reduction. Cost reduction is an important factor in outsourcing practice that is sought by the clients to increase their revenues.

There is a relationship between the capability dimension and the economical dimension. Clients always seek the maximum quality with the lowest cost. Vendors are obliged to try to achieve these two dimensions especially at the beginning of the software project. Longer relationships, good quality and trust minimizes the importance of the economical dimension and helps the client relaxing the cost reduction factor.

All of the aforementioned dimensions contribute to the IT outsourcing success and help the client to compete in the global market. The last dimension is the competitive dimension. Combining the success of the three previous dimensions yields to a client satisfaction and good reputation that can be used not only between the vendor and the client but also with the client' s references and partners.

When achieving the competitive dimension, it will affect the original dimensions in a feedback style. Client satisfaction and excellent reputation yield to better relationships with new clients that are supported by the proven trust, commitment and good communication quality. It also yields to better capabilities in terms of formulating strong technical and managerial teams, best talented human resources and good achievable quality. This feedback loop is beneficial for the software outsourcing vendors and a real goal for every Palestinian outsourcing company.

Chapter 6

Conclusion

6.1 Conclusion and Future Work

This research presents an exploratory multiple-case study approach that investigates the IT outsourcing in a real industry contexts. Our study targeted four software development outsourcing companies in Palestine and can be considered as a genuine attempt to explore and understand the IT outsourcing in the Palestinian IT sector, its motives and challenges. All of studied cases were one of the top leading outsourcing companies in the Palestinian IT sector. The sizes of these companies based on the number of employees ranges from medium to large.

This study showed that the practice of software outsourcing is a vital driver for development companies in the Palestinian IT sector. One of the main motives for outsourcing in Palestine is the high global demand on software services, this helped Palestinian companies to approach international clients in order to provide a good quality services for them. We also showed that local companies pay a lot of attention to quality and to client satisfaction in order to build a sustainable long-term relationship with the client instead of having a short-term one time project. Using the achieved client satisfaction and good reputation helped the studied cases to have a competitive advantage. They used these success stories not only to sustain existing clients but to attract new ones as well. This study also showed that the small population of the Palestinians and hence the IT sector created issues like the lack of domain experts in specific fields which impacted the capabilities of the studied cases to achieve higher level of globality and competitiveness.

We also revealed that the geographical location of Palestine made it a good outsourcing destination. The closer geographical distances to the clients helped the studied cases to build good relationships; taking the advantages of similar time zones and the ease of face to face meetings when needed.

Cost reduction is one of the main attractions to invest in Palestinian IT companies. The studied cases showed an emphasis on the criticality of cost reduction to the clients when new software projects are started and developed.

Another important reveal by our study is that quality, followed by cost and lastly the geographical distances are the main motivational factors that fosters software outsourcing in the Palestinian IT sector.

This study also showed that the fear of highly risk investing in Palestinian software outsourcing companies due to the political issues in the area, has a bad effect on the competitiveness and the seek of globality of the local Palestinian outsourcing companies.

Another important reveal of this study is a proposed model for the outsourcing in the Palestinian software sector. This proposed model can help the Palestinian vendors to expand their work. It also helps them approach outsourcing in a more successful way.

In future work, we intend to conduct an explorative study on the relationship between the software outsourcing and the employees turnover in the Palestinian IT companies.

6.2 Threats to Validity

Emphasizing the quality of the research and the validity of it provides trustworthiness and credibility for the results [31]. There are common tests that can be used to establish this research quality, these factors were the construct validity, internal validity, external validity and reliability. These four tests were identified and discussed by [28] [42].

In this study, we addressed these tests and applied the proposed tactics to deal with these validations in our multiple-case study. For the construct validity, we used multiple sources of evidence presented by the use of both face to face interviews and focus groups in data collection phase. We also established a chain of evidence by applying an identification code to the interview transcripts documents. A numbering scheme were applied to the sentences during the thematic coding phase, these sentences were linked back to their original documents.

Internal validity are concerned with causal claims, which is inapplicable to our exploratory multiple-case studies and has been excluded from our tests. To achieve external validity we developed a theory based on our literature research.

To achieve reliability validity two tactics were applied, a case study protocol was created and used in our research. The second tactic was developing a case study database which was applied by storing the data of our case studies in a database that contains all facts and evidence of our work.

One limitation that we identified in our research was the number of participants in our focus group. According to Creswell [35], the number of participants in a focus group session should be six to eight, we only had three participants in our focus group.

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