



Centre for Computing and Social Responsibility

Information Systems Doctoral Programme

**An Investigation of Factors Affecting the  
Adoption of E-payment System in Libya**

**Mahmoud Hassan Elbasir**

*A Doctoral Thesis Submitted in Partial Fulfilment of the*

*Award of Doctor of Philosophy*

**2015**

*I have eventually completed my PhD thesis, despite my battle  
with colon cancer, illness, and pains. Thanks to GOD*

*Mahmoud Hassan Elbasir*

*Leicester, UK, 2015*

## Table of contents

<b>TABLE OF CONTENTS</b> .....	<b>III</b>
<b>LIST OF FIGURES</b> .....	<b>X</b>
<b>LIST OF TABLES</b> .....	<b>XI</b>
<b>GLOSSARY</b> .....	<b>XIII</b>
<b>PUBLICATIONS</b> .....	<b>XV</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>XVI</b>
<b>DEDICATION</b> .....	<b>XVIII</b>
<b>ABSTRACT</b> .....	<b>XIX</b>
<b>1 INTRODUCTION</b> .....	<b>1</b>
1.1 Introduction .....	1
1.2 Research background .....	1
1.3 Research Motivation and Contribution .....	2
1.4 Research Objectives .....	3
1.5 Research Questions .....	4
1.6 Structure of Thesis .....	5
<b>2 E-PAYMENT SYSTEMS (DEFINITIONS, TYPES, AND FACTORS)</b> .....	<b>8</b>
2.1 Introduction .....	8
2.2 E-payment Systems Definition.....	8
2.3 E-payment systems transaction types.....	12

2.3.1	Customer to Customer (C2C).....	12
2.3.2	Consumer-to-Business (C2B) .....	12
2.3.3	Business to Business (B2B) .....	13
2.3.4	Business to Customer (B2C).....	13
2.4	Why Libya? .....	14
2.5	Payment systems in Libya.....	16
2.6	Factors affecting E-payment Systems adoption.....	18
2.6.1	Economic Factors .....	20
2.6.1.1	Islamic Banking and Finance .....	21
2.6.2	Socio-organisational Factors .....	23
2.6.3	Political Factors .....	24
2.6.3.1	Political unrest in Libya .....	25
2.6.4	Technical and System Quality Factors.....	27
2.7	Summary and conclusion .....	28
<b>3</b>	<b>RESEARCH METHODOLOGY.....</b>	<b>29</b>
3.1	Introduction .....	29
3.2	Research paradigm .....	30
3.2.1	Positivist Paradigm.....	32
3.2.2	Interpretative Paradigm .....	34
3.2.3	Critical Paradigm.....	36
3.3	Quantitative and Qualitative Research approaches .....	39
3.3.1	Quantitative research approach .....	40
3.3.2	Qualitative research approach .....	41
3.3.3	The proposed research approach.....	44

3.3.4	Justification for selected research approach.....	45
3.4	Research methods.....	46
3.4.1	Survey.....	46
3.4.2	Case study .....	47
3.4.3	Ethnographic research.....	50
3.4.4	Action research.....	51
3.4.5	Experiments.....	52
3.4.6	Grounded Theory and its justification for selected research methodology .....	52
3.5	Grounded Theory Techniques .....	55
3.5.1	Theoretical Sampling .....	55
3.5.2	Theoretical Saturation .....	55
3.5.3	Constant Comparison .....	56
3.5.4	Memos .....	56
3.6	Data collection methods .....	57
3.6.1	Questionnaires .....	57
3.6.2	Interview.....	58
3.6.3	Observations .....	60
3.7	Summary and conclusion .....	60
<b>4</b>	<b>THE DESIGN OF PILOT STUDY AND EMPIRICAL RESEARCH .....</b>	<b>62</b>
4.1	Introduction .....	62
4.2	Pilot Study Definition.....	63
4.3	What is a stakeholder?.....	64
4.4	Who are the stakeholders?.....	64
4.5	Interview protocols for the pilot and empirical study .....	66

4.5.1	Sample size of the pilot study and its process .....	66
4.5.2	Pilot study analysis.....	68
4.5.3	Refining the interview questions.....	75
4.5.4	Justification of interview research questions .....	77
4.5.5	Sample size for the full study.....	84
4.6	Summary and conclusion .....	87
<b>5</b>	<b>DATA ANALYSIS .....</b>	<b>88</b>
5.1	Introduction .....	88
5.2	Analysis procedures .....	88
5.3	Manual justification analysis.....	89
5.4	Straussian approach procedures .....	92
5.4.1	Open coding process .....	92
5.4.1.1	Discovering categories .....	96
5.4.1.2	Saturation .....	97
5.4.1.3	Naming categories .....	97
5.4.1.4	Developing categories based on properties and dimensions .....	98
5.4.2	Axial coding process .....	99
5.4.2.1	The paradigm model.....	100
5.4.3	Selective coding .....	109
5.4.3.1	Criteria for selecting core category .....	110
5.5	Summary and Conclusions.....	113
<b>6</b>	<b>FINDINGS AND DISCUSSION .....</b>	<b>115</b>
6.1	Introduction .....	115

6.2	Findings from both organisational and consumer perspectives .....	117
6.2.1	Open coding process from the consumer perspective .....	117
6.2.1.1	Consumer characteristics (e.g. knowledge, experience, skills, and age)	
	117	
6.2.1.2	Education level.....	120
6.2.2	Open coding from the perspective of an organisation.....	122
6.2.2.1	Technical factors .....	122
6.2.2.1.1	Trust and reliability .....	125
6.2.2.1.2	Ease of use and convenience factors .....	127
6.2.2.1.3	Accessibility .....	129
6.2.2.1.4	Post coding .....	131
6.2.2.1.5	Availability of EPS.....	132
6.2.2.1.6	Availability of electricity.....	134
6.2.2.2	Economic factors .....	135
6.2.2.2.1	Perceived benefits.....	135
6.2.2.2.2	Cooperation with existing entities .....	136
6.2.2.2.3	Mutuality of stakeholders .....	138
6.2.2.2.4	Internet cost .....	140
6.2.2.2.5	Marketing business .....	142
6.2.2.2.6	Feasibility studies of EPS adoption.....	143
6.2.2.2.7	Withdrawal control.....	145
6.2.2.2.8	Islamic banking .....	146
6.2.2.2.9	Competition.....	148
6.2.2.2.10	Standard of living .....	150

6.2.2.3	Socio-organisational factors .....	152
6.2.2.3.1	Staff experience .....	153
6.2.2.3.2	Awareness .....	156
6.2.2.3.3	Resistance to change .....	158
6.2.2.3.4	Ease of communication .....	160
6.2.2.3.5	Cooperation with existing entities .....	162
6.2.2.4	Political and legal issues .....	164
6.2.2.4.1	Government' s responsibility and political support .....	165
6.2.2.4.2	Instability political status in Libya .....	168
6.2.2.4.3	Regulations .....	171
6.3	Axial coding .....	175
6.3.1	Customer attitude .....	176
6.3.2	The benefit of EPS adoption .....	184
6.3.3	Organisational attitude .....	192
6.3.4	Political issues .....	204
6.4	Core Category (Grounded theory emerging from this research).....	213
6.4.1	Identifying the storyline .....	215
6.4.2	Relating the Core Category to other Categories at a Dimensional Level .	216
6.4.3	Discussion and validating the relationship between the findings and literature .....	222
6.5	Summary and conclusion .....	224
<b>7</b>	<b>CONCLUSION.....</b>	<b>226</b>
7.1	Introduction .....	226
7.2	Answering the research questions .....	226



7.3	Research contribution.....	237
7.3.1	Original contribution.....	237
7.3.2	Complementary contribution.....	238
7.4	Further work .....	239
7.5	Research evaluation.....	242
7.5.1	Credibility.....	242
7.5.2	Auditability.....	243
7.5.3	Fittingness .....	244
7.6	Research limitations .....	245
7.7	Conclusion.....	246
<b>8</b>	<b>REFERENCES .....</b>	<b>248</b>
<b>9</b>	<b>APPENDICES .....</b>	<b>301</b>
9.1	Appendix A: Ethical Approval letter .....	301
9.2	Appendix B: Ethical Approval claim form .....	302
9.3	Appendix C: Pilot Study Organisational interview.....	305
9.4	Appendix D: Pilot Study Customer interview.....	313
9.5	Appendix E: Examples from empirical study interview (Arabic version)....	319
9.6	Appendix F: Open coding categories (consumer perspective).....	351
9.7	Appendix G: Open coding categories (organisation perspective).....	352
9.8	Appendix H: Customer' s questions .....	353
9.9	Appendix I: Organisation' s questions .....	355
9.10	Appendix J: Theoretical explanation.....	358
9.10.1	Introduction .....	358

9.10.2	Theoretical aspects in relation to factors affecting the E-payment systems	358
9.10.3	Diffusion of innovations theory (DOI) and its justification for selection for further theoretical explanation.....	361
9.10.4	Innovation.....	364
9.10.4.1	The Innovation-Decision Process Theory.....	365
9.10.4.2	Individual Innovativeness Theory.....	365
9.10.4.3	Rate of adoption theory.....	366
9.10.4.4	Theory of perceived attributes.....	366
9.10.4.4.1	Relative advantage.....	367
9.10.4.4.2	Compatibility.....	371
9.10.4.4.3	Complexity.....	373
9.10.4.4.4	Observability.....	375
9.10.4.4.5	Trialability.....	376
9.10.5	Summary.....	377

### **List of Figures**

Figure 2.4-1	Map showing Libya.....	14
Figure 4.5-1	Code creation over data analysis.....	86
Figure 5.4-1	Open coding workflow.....	96
Figure 5.4-2	Paradigm model.....	101
Figure 5.4-3	Customer' s attitude category in axial coding.....	105
Figure 5.4-4	The benefit of EPS adoption category in axial coding.....	106
Figure 5.4-5	Organisational attitude category in axial coding.....	107
Figure 5.4-6	Political issues category in axial coding.....	108

Figure 5.4-7 Economic issues “Core category “ .....	112
Figure 6.3-1 Axial coding (customer attitudes category).....	177
Figure 6.3-2 The relationship between the customer attitudes category and its subcategories .....	178
Figure 6.3-3 Axial coding (the benefit of EPS adoption category).....	185
Figure 6.3-4 The relationship between the benefit of EPS adoption category and its subcategories .....	186
Figure 6.3-5 Axial coding (organisational attitude category) .....	193
Figure 6.3-6 The relationship between the organisational attitude category and its subcategories .....	194
Figure 6.3-7 Axial coding (political issues category) .....	205
Figure 6.3-8 The relationship between the political issues category and its subcategories ...	206
Figure 7.2-1 The relationship between the factors (social and organisational, technical, political, and economic) .....	234
Figure 9-1 The 5 Stages in the Innovation-Decision Process .....	362
Figure 9-2 Adopter Categorization on the Basis of Innovativeness.....	370

### **List of Tables**

Table 3.2-1 The three major research paradigms .....	39
Table 3.3-1 The major differences between quantitative and qualitative research approach.....	43
Table 3.3-2 Qualitative versus Quantitative.....	44
Table 3.4-1 Characteristics of Case Studies.....	49
Table 3.4-2 Grounded theory variants.....	54
Table 4.4-1 References for each respondent .....	66
Table 4.5-1 Guidelines prior to starting the pilot study .....	66
Table 4.5-2 Respondents’ codes (pilot study results).....	70
Table 4.5-3 Pilot study findings .....	74
Table 4.5-4 Justification of interview customer's research questions .....	80
Table 4.5-5 Justification of interview organisational research questions .....	84

Table 5.4-1 Open coding extracted from both perspective (organisational and consumer) ...	95
Table 5.4-2 Criteria for selecting core category.....	111

## Glossary

Abbreviation	Meaning
ATMs	Automated Teller Machine,
B2B	Business-to-Business
B2C	Business-to-Consumer
C2B	Consumer-to-Business
C2C	Consumer-to-Consumer
CBL	Central Bank of Libya
EC	Electronic Commerce
EPS	Electronic Payment System
GDP	Gross Domestic Product
GIA	General Information Authority
GT	Grounded Theory
ICT	Information and Communications Technology
IS	Information System
ISP	Internet Service Provider
NAC	North African Countries
NIN	National insurance Number
P2P	Person to Person
PC	Personal Computer
POS	Point of Sale
SRI	Standard Research Institute
UAE	United Arab Emirates
UN	United Nations

UNDP	United Nations Development Programme
UNDY	United Nations Demographic Yearbook
US	United States

## Publications

### Journal papers:

Elbasir, M., Howley, R., (2013) A grounded theory analysis of the influence of economic factors on the adoption of E-payment systems in Libya, *International Journal of Business and Management Studies*, ISSN: 2158-1479, Vol. [2], No.2, pp.573–591.

Sarrab, M., Elbasir, M., Elgame1, L., (2013), The Technical, Non-technical Issues and the Challenges of Migration to Free and Open Source Software, *IJCSI International Journal of Computer Science Issues*, Vol. 10, Issue 2, No 3, ISSN (Print): 1694-0814 | ISSN (Online): 1694-0784.

### Professional Conference papers and activities:

- Chairing research session in conference in Paris, 2013

Elbasir, M., Howley, R., Stahl, B., (2013), Impact of economic factors on adoption of E-payment system in Libya, Euro-American Conference for Academic Disciplines, Paris.

Sarrab, M., Elbasir, M., Aldabas, H., (2013), Challenges of Computer Crime Investigation In North Africa's Countries, The 14th International Arab Conference on Information Technology Organized by Sudan University of Science and Technology, Khartoum - Sudan, Date: 17-19 /12/2013

Sarrab, M., Elbasir, M., Elgame1, L., (2013), An Overview of the Technical Challenges of Migration to Open Source Software, pp.39, 42. Free and open software conference (fossil-13), Muscat Oman.

## **Acknowledgements**

First and foremost, I would like to thank ALLAH (GOD), the most merciful and most gracious, for providing me with the ability and energy to complete this thesis, despite my battle with colon cancer.

I would like to express my deepest gratitude to my father, Hassan Omer Elbasir, and my mother, Fatma Ahmed Elbasir, for their support and love during my PhD journey. This thesis would certainly not have existed without their support. They have always given selflessly and never expected thanks. There could be no better way to express my gratitude and appreciation for all they have done to make me who I am than through the completion of this thesis.

I want to thank my wife, Marwa Elbajegni, for her encouragement and endless support throughout my studies, particularly during my illness. Those were the hardest days of our lives, and made harder by being geographically so far from our family in Libya. To my beloved children, Bushra, Mohammed, Maria, and the little one, Abdulmalik (you are the best things in my life). You welcomed me into fatherhood for which I am so grateful. This thesis is dedicated to them. I also wish to express thanks to my brothers, sisters and parents-in-law Mokhtar and Haliema Elbajegni for all their love, encouragement, patience and support over the years.



I would like also to convey my special appreciation to my supervisors, Dr Richard Howley and Professor Bernd Stahl, for your enthusiasm, encouragement, support and advice. Thank you very much for your significant contribution to this work.

I acknowledge the support I have received from my sisters, Asma, Safia and Ahlam, and Ahlam's husband, Ahmed, and their sons Abdulrahaman, Rayied, and Wesam. Also, special thanks to my brothers, Mouad, Aboobeda, and Khiliefā, as well as Khiliefā's wife, Inas, and their son Albaraa. Thanks to Azaldeen and his wife Fatma, and their sons Mohammed, Soheeb and their daughters Belassan, and Nariz. I wish to extend my gratitude to my friends at the Centre for Computing and Social Responsibility, including Dr. Maher Aljaber, Dr. Jihad Alamri, Dr. Mohammed Alhgulan, Dr. Ahmad Alsand, Abed Alkareem Alsama'ni, Mohammed Alshamri and Erik Bekoe. I also wish to thank my friend Dr. Abdulhafied Ben Taher whose friendship I have enjoyed for over thirty years, and my friends in the UK, including Dr. Shaban Alramali, Dr. Mohammed Sarrab, Naser Abonwar, Abdul Hamied Elaskri, Abdul Baset Genedi, Khalied Ermis, Mohammed Alogbi, Ahmed Masouad, Esam Talha, Abdulgader Grain, and all the others who are too numerous to list here.

## **Dedication**

To my grandfather and my grandmother:

I dedicate this thesis to my grandfather's Omer and Ahmed, and to my grandmothers Fatima and Aisha, who were waiting for the completion of this PhD thesis. Your extraordinarily generous support greatly eased my struggles and anxiety, and I can never repay you for your kindness.

To my darling parents:

This thesis is dedicated to my loving father, Hassan Omer Elbasir, who has been a great source of motivation, inspiration and endless support throughout my life, and who made great sacrifices in order that I may be the man I am now.

It is also dedicated to my loving mother, Fatma Ahmed Elbasir, for her love and support and all her sacrifices for me. Without her loving care, prayers and support, it would have been very difficult for me to achieve my objectives.

To my beloved family:

I would like to dedicate this thesis to my beloved wife, Marwa Mokhtar Elbajegni, and to my children.

To my beloved children:

To Bushra, Mohammed, Maria, and the little one, Abdulmalik. I owe everything I have achieved or will achieve to them. I hope that by obtaining my PhD I can put smiles on their faces.

## **Abstract**

Electronic payment systems (EPS) have received considerable attention from researchers and business owners worldwide, because of their potential to support economic development and growth. Despite the significant contribution of the growth in EPS to the ability to complete transactions via the Internet, Libya lags significantly behind developed countries in its adoption of EPS. This research focuses on factors affecting EPS adoption and use in Libya, explaining how they positively or negatively affect Libyan customers and organisations' willingness to adopt EPS.

Data was collected via semi-structured interviews with different stakeholders, including consumers, organisational staff (e.g. Telecommunications Companies, Banks, the Ministry of Telecommunication and Informatics, etc.), and strategic decision-makers (e.g. the Under-Secretary of the Ministry of Communications, Director of Islamic Banking at Bank of Republic). The research implements Grounded Theory methods (GT), in particular the Straussian approach, to analyse, explore, and investigate the socio-organisational, technical, political, and economic factors affecting the adoption of EPS in Libya, and importantly the relationship between these factors. It discusses the impact of the factors identified, from both organisational and consumer perspectives, highlighting the factors and issues that need to be overcome to support successful adoption of EPS.

The findings confirm that, for consumers and organisations alike, economic factors (e.g. perceived benefits, cooperation with existing entities, mutuality of stakeholders, Internet costs, standard of living, marketing businesses, awareness, withdrawal control,

feasibility studies on EPS implementation, Islamic banking services and competition) are the core factors influencing the system's adoption. Furthermore, the findings revealed three new and significant factors of relevance to Libya, including standard of living, post coding and the unstable political situation in the country. These represent a unique contribution to the body of knowledge, illustrating the attitude of the Libyan people toward Internet usage, and current obstacles to EPS adoption.

The use of substantive GT, in particular the Straussian approach, for data collection and data analysis in the field of EPS adoption, and the assessment of organisational and consumer attitudes, is unique to this research to the best of the researcher's knowledge. Thus, the research embodies a substantial contribution to the body of knowledge.

The interpretive analysis of data using a Straussian approach has permitted the researcher to attain a deep understanding of the socio-organisational, economic, political, and technical factors affecting adoption of an E-payment system in Libya, as implemented by different stakeholders: Consumers, and Organisational. The benefits that the adoption of EPS in Libya will bring, include facilitation of online transactions, the availability of more secure websites, easier payment and access to the global markets. Furthermore, detailed recommendations are also being offered to assist decision-makers in the development and introduction of EPS in Libya, i.e. including the Communications and Informatics Ministry, which is hoped will advise internet service providers and companies to discount the cost of using the internet for limited bandwidths, in order to insure everyone access to the internet, and EPS.

# 1 Introduction

## 1.1 Introduction

This chapter presents the research background and motivation for undertaking research on the adoption of E-payment systems (EPS) in developing countries, in particular, Libya. It outlines and justifies the research objectives, and details the associated the research questions.

## 1.2 Research background

The payment system of any country, as the channel through which financial resources flow, plays an important role in its economy (Tennyson, 2014). The advent and growth of the Internet and information technology has led to significant alterations in the way money is moved. Many countries now use a combination of E-payment systems and traditional systems of payment; i.e. including cash, cheques, electronic payments, and online transactions via the Internet (Ifinedo, 2012; Gholami *et al.*, 2010; Chaudhury & Kuilboer, 2002). Individuals and companies are increasingly relying on systems of payment via the Internet rather than traditional methods of using cash and cheques to pay for goods and services. The aim of this research is to discover and analyse the interrelatedness of socio-organisational, economic, political and technical factors, from the perspective of both organisations and customers. Furthermore, the current research will explore the factors that could potentially affect the adoption of EPS in Libya.

Having detailed the research background, it is now appropriate to outline the reasons for choosing this research topic.

### 1.3 Research Motivation and Contribution

There were many reasons motivating the decision to undertake this research; see below:

1. Recent studies of EPS have focused either on the organisational (Takele & Sira, 2013; Benjamin *et al.*, 2007, pp. 232–235; Al-Hajery *et al.*, 2006) or on customer perspective (Antwi *et al.*, 2015; Haruna, 2012; Kumaga, 2010; Padachi *et al.*, 2008; Kshetri, 2007) as it explained in section 2.6; however, thus far, no researchers in the field of EPS adoption have covered both perspectives in a single study.
2. Recent studies on the of EPS in developing countries focus independently on the effectiveness of the following factors in isolation: political (Dolan, 2014; Azab *et al.*, 2009; Adam, 2008) as it explained in section 2.6.3, socio-organisational (Shin *et al.*, 2013; Özkan *et al.*, 2010; Kleijnen *et al.*, 2004; Karahanna & Limayem, 2000) as it explained in section 2.6.2, economic (Jamshidi & Hussin, 2013; Ifinedo, 2012; Gholami *et al.*, 2010; William & Simon, 2006) as it explained in section 2.6.1, and technical (Dalvand *et al.*, 2014; Lawrence & Tar, 2010, pp. 32–33; Hunaiti *et al.*, 2009, p.37) as it explained in section 2.6.4. This study will consider how these factors interrelate and impact on each other, as well as the influences leading to the adoption of EPS in Libya as it explained in chapter 6.
3. There is a dearth of studies have adopted the use of substantive GT, in particular the Straussian approach, for data collection and data analysis in the specific context of E.phenomenon adoption. In fact, most recent studies of adoption and diffusion have implemented grounded theory as a research methodology to examine the factors that influence adoption; i.e. the adoption of EC (Aljaber,

2012; Halaweh, 2009), the adoption of internet usage in small-medium enterprises (Chinedu Eze, *et al.*, 2014; Kannabiran and Dharmalingam, 2012; Lawrence, 2010). Thus, this research will be the first of its kind to use of substantive GT, in particular the Straussian approach, for data collection and data analysis in the field of EPS adoption, and the assessment of organisational and consumer attitudes, has not been done in any previous research to the best of the researcher's knowledge

4. There is a dearth of studies concerning factors effecting EPS implementation in Libya. The literature to date only concentrates on adoption of e-phenomena in activities, such as e-commerce (Saeed & Bampton, 2013; Alamro & Tarawneh, 2011; Abukhzam & Lee, 2010), e-learning (Kenan *et al.*, 2014; Rhema *et al.*, 2013; Rhema & Miliszewska, 2010), e-banking (Ullah *et al.*, 2013; Abukhzam & Lee, 2010) and e-government (Verma *et al.*, 2012; Sweisi, 2010) in Libya. Therefore, this research will make a unique contribution as illustrated and explained in section 2.3.4.

#### **1.4 Research Objectives**

The objectives of this research are:

- To extend the existing body of academic knowledge and theoretical framework on the adoption of EPS by exploring factors influencing EPS from both organisational and customer perspectives, and to further highlight how such factors interact and interrelate.
- To provide guidelines for strategic decision-makers' and researchers in the telecommunications sector, as well as governments and banks, through proposing a model explaining the interrelationship between relevant factors

affecting the adoption of EPS in Libya, and which direct decision makers in facilitating the adoption of effective decisions in regard to EPS.

## **1.5 Research Questions**

Devising appropriate research questions is a vital step toward understanding the research problem (Leedy & Ormrod, 2013, 2005). In order to achieve that research objective, the following research questions will be addressed.

*What are the socio-organisational, economic, political, and technical factors regarding the adoption of an E-payment system in Libya?*

In order to address this research question the following sub-questions are:

- *What definitions of E-payment systems (EPS) exist and do they reflect EPS provision in Libya?*
- *What is the current EPS landscape in Libya and how do current political changes affect it?*
- *How does each of the four factors (socio-organisational, economic, political and technical) relate to EPS adoption in Libya?*
- *What is the nature of the relationship between each factor and how does that particular relationship affect the overall process of EPS adoption in the Libyan context?*

The answers to the above questions will enable the researcher to acquire an understanding of the relevant factors affecting EPS in Libya. The primary research question will address the first aspect of the research objectives, whilst section 2.2 will answer the first sub-research question by offering definitions of E-payment systems.



The second sub-research question will be addressed in section 2.5. This will involve exploring the relevant factors associated with EPS adoption. The third and fourth sub-research questions will provide an answer to the second and third research objectives.

## **1.6 Structure of Thesis**

The remaining chapters of this study are organised as follows:

Chapter Two: presents the main factors identified in the literature as pertaining to EPS adoption. It enables the researcher to understand the impact of the following factors: socio-organisational, economic, political and technical, to identify which may be significant influencer(s) of EPS adoption in Libya. The chapter begins by providing definitions of EPS and discussing important features and differences. It then highlights a suitable definition to be used for the purpose of this research. The chapter also uncovers how various categories of EPS transactions are classified into categories, which should be considered in reference to the functionality of EPS transactions. The chapter also offers a brief introduction to Libya, its location, geography, borders, population, religion, and culture, and then describes the reasons for selecting Libya as an example for this research. Although, Libyan banks have not yet adopted modern technologies such as internet access, core banking solutions and e-banking related software (CBL, 2014), the Central Bank of Libya (CBL) acknowledged the benefits of the implementation and development of technologies and improvements to banking activities when launching the National payment systems as explained in more detail throughout this chapter. Factors effecting EPS in terms of economics, socio-organisational, technical, and political implications are also highlighted through this chapter.

Chapter Three: presents and explains the research methodology employed in the research, and the justifications for its use, as well as its limitations. It considers the selection of appropriate research techniques, employing and adhering to the rules of the chosen research methods, and ensuring the research follows a clearly defined path. It describes the different data collection methods employed to support qualitative research methods, such as interviews, questionnaires and observations, and then justifies the research approach, research methods, and data collection methods selected. It concludes by summarising suitable techniques to conduct the research.

Chapter Four: discusses the main issues pertaining to the design of the pilot and the full study. In particular that in the context of the current work, the researcher will evaluate all the issues and factors discussed, to determine a suitable sample size for the pilot study and the full study. The analytical procedures were in parallel with the data collected at this stage of the pilot study and the full study, as illustrated in this chapter and in chapter's 5 and 6 which are based on a Straussian approach, which encompasses three stages of coding, including open, axial and selective. The chapter begins by providing definitions of the term 'pilot study' and discusses its processes. It then explains and provides information related to stakeholders chosen for the purpose of the research. The chapter finally explains how, after the pilot study, the interview questions were reviewed, amended and enhanced to cover all points clearly.

Chapter Five: provides a thorough overview of the analytical procedures applied to the data, which was collected in response to the research questions. This chapter discusses grounded theory, particularly the Straussian approach, in depth. The researcher discussed and justified the manual analysis. The chapter also presents an explanation regarding the main differences and similarities between a Glaserian approach and a

Straussian approach. It then explains the appropriacy of the Straussian approach to fulfil the research aims. The chapter concludes by discussing and highlighting the features and procedures used in the Straussian approach, supporting these with examples from the participants' answers. By the end of the chapter, a clear understanding is provided of the theory and procedures applied and the approach proposed.

Chapter Six: Clarifies the three procedures adopted for data analysis, by presenting different diagrams showing the relationship between these different factors. The analytical process in turn allows the development and analysis of categories in terms of their properties and dimensions. This then supports the development and analysis of categories relative to their properties and dimensions.

Chapter Seven: Presents the research conclusions, including answers to the research questions, which were devised to more fully understand the research problem. This chapter also summarises the contributions of this research to existing knowledge, and offers an evaluation of the study, its limitations, and recommendations for overcoming the barriers that limit the adoption of EPS in the Libyan context and, in particular, the Libyan telecommunications sector.

## **2 E-payment systems (Definitions, Types, and Factors)**

### **2.1 Introduction**

This chapter presents the main factors identified in the literature as pertaining to EPS adoption. It enables the researcher to identify and understand the impact of the following potential influencers of EPS adoption in Libya: socio-organisational, economic, political and technical. First, the chapter begins by providing definitions of EPS and discussing important features and differences. It then provides a suitable definition for use throughout this thesis. Section 2.3 will uncover how are the various categories of EPS transactions can be classified into categories to consider in reference to the functionality of EPS transactions. The chapter also offers a brief introduction to Libya, its location, geography, borders, population, religion, and culture, and then describes the reasons for selecting Libya as an example of this research. Libyan banks have not yet adopted modern technologies, such as internet access, core banking solutions and e-banking related software (CBL, 2014). However, the Central Bank of Libya (CBL) has realised the benefits of the implementation and development of technologies, and improved banking activities through launching the National payment systems, as explained in section 2.5. Factors effecting EPS adoption will be highlighted in section 2.6.

### **2.2 E-payment Systems Definition**

Since the emergence of e-commerce, considerable work has been conducted in an attempt to establish a standard definition of EPS to describe the main entities involved and the transaction processes.

Business via the Internet and the subsequent development of EPS has led to a dynamic environment in which business transactions offer the most important advantages in favour of online strategies, without having recourse to face-to-face interaction (Raza & Hanif, 2013; Nasri, 2011, p. 143). Consequently, the popularity of EPS activities continues to increase, whereas, many payment systems have been created in an attempt to make the exchange of money over the Internet easier for customers. For example, the EPS system includes ATMs, electronic cheques, smart cards and solutions, such as mini PayPal. EPS provides users with a set of tasks, including person to person (P2P) and EPS (Anyanwu *et al.*, 2012). Khalili *et al.*, (2012), and Yu *et al.*, (2002) argue that EPS, which helps users to avoid the use of credit cards, is important for the development of both trade and electronic systems.

Jayaram and Prasad (2013), Kalakota and Whinston (1997) noted that Internet applications offering banking services have been growing rapidly online. This emphasises the role the Internet has played in the field of EPS; i.e. it provides a platform for online transactions, such as online shopping, auctions online, online stock trading and so on. However, in spite of the fact that EPS offers many benefits, such as greater speed transactions and lower handling charges, there remain uncertainty and security concerns (Changsu and Wang, 2010, pp. 86). Therefore, only by understanding the causes of this resistance, will bank managers will be able to formulate strategies aimed at boosting the use of banking services via the Internet (Hakkak *et al.*, 2013; Kuisma *et al.*, 2007).

According to Hasan *et al.*, (2012), EPS refers to monetary and related transactions carried out using electronic means. Usually, this involves the use of computer networks

like the Internet and digitally stored value systems. The system allows bills to be paid directly from bank accounts, without the need for writing and mailing cheques.

The objective of reducing cash transactions and cheques is one of the principle benefits of using EPS; it offers consumers safe and secure payment methods, rather than paying by cheque, debts by cash, etc. Therefore, Agimo (2004) defines EPS as “*payment by direct credit, electronic transfer of credit card details, or some other electronic means, as opposed to payment by cheque and cash*”. It also been defined as “*a payer’s transfer of a monetary claim on a party acceptable to the beneficiary*” (European Central Bank, 2003).

Kalakota and Whinston (1997, p. 153) defined EPS, thus “*electronic payment is a financial exchange that takes place online between the seller buyer and the seller. The content of this exchange is usually the form of digital financial instrument (such as encrypted credit card numbers, electronic cheques, or digital cash) that is backed by a bank or an intermediary or by a legal tender*”. In Ghana, this definition focuses on online transactions between parties that have a business relationship with one another. This process is completed in the form of a digital transaction and can achieve the process of electronic payment in a secure environment.

Hataiseree (2008) details a study conducted in Thailand to achieve effectiveness and efficiency in retail payment systems. However, the following considerations should be taken into consideration; i.e. convenience, reliability and security in the form of payment, quality of service, involving features such as the speed with which payment is processed, and the level and structure of fees charged by financial institutions; i.e. taste,

demographics, and technological advances that may improve speed, convenience and flexibility across different payment systems.

EPS has been recognised as an integral tool supporting online transactions (Teoh *et al.*, 2013; Catherine, 2000); therefore it can be defined relative to the nature of payment. One such definition was provided by Abrazhevich (2001), who defined EPS payment methods as those able to facilitate transactions via the Internet at a faster, more efficient and less expensive rate than could be achieved with credit cards. Yu *et al.*, (2002) claim that EPS can function entirely without the need for credit cards, arguing that one of the reasons for adopting EPS is to promote the development of e-commerce. However, EPS could be seen to also include payments from individuals to businesses, banks and public services, or the government, as executed through electronic telecommunications networks (Sumanjeet, 2009).

After considering these definitions the researcher chooses to define EPS throughout this research as ‘a process implemented by the payer through the use of online channels where transactions are performed’. This involves the provision of definitions of EPS; the researcher proposed employing this definition to include the transfer of financial information involving online transactions, as well as technological distribution channels through which transactions are executed. However, after providing definitions of EPS and discussing different issues relating to them, the following section will uncover different types of E-payment transactions and explain which type of EPS is applicable to this research.

### **2.3 E-payment systems transaction types**

E-payment transactions are conducted in different e-commerce categories, such as, Consumer-to-Consumer (C2C), Consumer-to-Business (C2B), Business-to-Business (B2B), and Business-to-Consumer (B2C) models. Sumanjeet (2009, cited in Ayo & Ukpere, 2012, Harris *et al.*, 2011) and Anderson (1998) claimed that different methods of EPS have emerged with the growth in EC transactions, such as, Online Credit Card Payment Systems, Electronic Cheque Payment Systems, Electronic Cash Payment Systems and Smart Cards based on EPS. However, before exploring and investigating those factors that affect adoption of EPS, these categories need to be addressed.

#### **2.3.1 Customer to Customer (C2C)**

Many businesses now offer their services using the Internet; it also allows customers to interact with each other, successful examples being auction websites (e.g. ebay.com) and Craig's List. While traditional businesses required commerce in order to build relationships between customers (Nimran *et al.*, 2015, El-Gohary, 2012), the Internet locates customers in a commercial environment that facilitates sales of goods and services. Another category identified in some cases is customer to business (C2B), which represents customers who inform companies of their individual needs (Nimran *et al.*, 2015; El-Gohary, 2012; Wong *et al.*, 2005). Some authors, such as Turban *et al.* (2006) have mentioned that the most vulnerable categories found are Business to Employee (B2E), Government to Customer (G2C) and Government to Business (G2B).

#### **2.3.2 Consumer-to-Business (C2B)**

This is an e-business model that enables consumers to provide their services and products to businesses and consumers. This kind of business model offers an inclusive reversal of the traditional business model, in companies that provide goods and services



to consumers, business-to-consumer (B2C). For example, purchasing a product on Amazon.com such as a book (Nimran et al., 2015; Wong *et al.*, 2005, as cited in El-Gohary, 2012).

### **2.3.3 Business to Business (B2B)**

B2B involves transactions that occur between companies on the Internet (Abdulhadi, 2013; Thanasankit, 2003, p.152). B2B transactions encompass most online companies that specialise in advertising, marketing strategies, and company e-mail, web consultants, website development, etc. In addition, various Internet resources can be found on magazines via the internet (EC times and BtoBOnline.com.).

### **2.3.4 Business to Customer (B2C)**

B2C describes the activities and business of organisations that serve the final consumer with products and/or services. Therefore, B2C is a form of EC in which companies sell their products or services to consumers. According to Bamoriya *et al.*, (2013), and VanHoose (2011) B2C “e-commerce is based on exchange of goods and services that are transacted via computer networks and involve sales by business to individual consumers. (P. 9)”. With respect to the factors affecting adoption, it is very important to remember that B2C activities are most appropriate for the purpose of this research.

The target of this research is Libya, and the following section will address and justify the selection of Libya as an appropriate example of a developing country for this research.

## 2.4 Why Libya?

This section offers a brief introduction to Libya, its location, geography, borders, population, religion, and culture, and then describes the reasons for selecting Libya as an example for this research.

Libya is a country located in North Africa, as shown in Figure 2.4-1. It overlooks the Mediterranean Sea to the north, Egypt to the east and northeast, Sudan, Chad and Niger to the south and Algeria and Tunisia to the west (UNHDP, 2009, p. 145). It occupies an area of 1,800,000 square kilometres (694.984 square miles), 90% of which is desert. Libya is the fourth largest country in Africa by area and the 17th largest in the world (UNDY, 2003). Its capital, Tripoli, is home to 1.7 million of Libya's 5.7 million people (GIA, 2006, pp.7-9). By far, the most prevalent religion in Libya is Islam. Religion in Libya permeates all aspects of life, and the vast majority of Libyan citizens are of this faith. Libyan culture is similar to neighbouring North African countries. In addition, the Arabic and English language are official languages in Libya (Rhema *et al.*, 2013; Rhema and Miliszewska, 2010, pp.423-437).



Figure 2.4-1 Map showing Libya

This research investigates and explores EPS adoption in developing countries. Libya is a candidate of development country for the purposes of this research. It was selected according to the classifications used by the United Nations for developing and developed countries (United Nations Development Programme, 2011). In 2011, the United Nations Development Programme Report provided standard classifications to distinguish between developing and developed countries; these remain contentious. The different criteria used in this report to evaluate degree of development were related to several issues: gross domestic product (GDP), per person income, level of industrialization, level of infrastructure and the general standard of living. Based upon these criteria, some countries were classified as developed, such as, the USA and Japan, whereas countries like Libya were classified as less developed (United Nations development Program, 2011). The choice of Libya as an appropriate example of a developing country for this research is justified by several points. First, Libya lags significantly behind developed countries in the adoption and use of Internet applications, such as, EPS services (Zhang, 2013; Elzawi & Wade, 2012; UNCTAD Report, 2003). Second, current literature concentrates on the area of adoption in the field of e-phenomena in Libya only, i.e. e-commerce (Saeed and Bampton, 2013; Alamro & Tarawneh, 2011; Abukhzam & Lee, 2010; Alamro & Tarawneh, 2011), e-learning (Kenan *et al.*, 2014; Rhema *et al.*, 2013; Rhema & Miliszewska. 2010), e-banking (Ullah *et al.*, 2013; Abukhzam, & Lee, 2010) and e-government (Verma *et al.*, 2012; Sweisi, 2010). Hence, there is an absence of studies concerning the factors effecting EPS implementation in Libya. In addition, there are no studies addressing the effect of socio-organisational, economic, political and technical factors, the interrelationship between those factors, or their impact on each other, or the influences

that potentially affect the uptake of EPS in Libya. Third, Libya is in the process of developing and enhancing its telecommunications sector, which in turn is affecting the country's national economic development. Fourth, the volatile political situation in Libya has affected the country technically, economically, socially and politically as explained in more details in sections 6.2.2.1 to 6.2.2.4. Finally, access to the data is more straightforward than would be the case if investigating another developing country, as the researcher is a Libyan citizen and sponsored by the Libyan government.

Having explained and justified the choice of Libya as a suitable example for the purpose of this research. It is important in the following section to highlight and provide an overview of the information that relates to the current situation, as regards payment systems in Libya.

## **2.5 Payment systems in Libya**

Despite EPS not yet having been adopted in Libya, the Central Bank of Libya (CBL) has sought to establish a national payment system based on several initiatives to develop a network of banking services. It has taken pioneering steps with respect to banking services across Libya. Therefore, this section will provide an overview of information related to the current situation as regards the payment system in Libya.

The advent of use of the Internet in Libya played a vital role in facilitating transactional processes (Abou -Shouk *et al.*, 2013; Tonderai *et al.*, 2010). Before the Internet was used for commercial transactions in Libya, most organisations utilised private networks, such as, the electronic data interchange for their online transactions (IBP, 2009; Shaaban & Alireza, 2009). Payment systems in Libya have undergone significant development in recent years (CBL, 2014). Systems are based on advanced applications

accessed via the Internet, and these allow the country to develop an electronic means of smart payment to contribute to the diversity, speed and accuracy of its banking and financial services sector. It has also opened up new investment horizons (CBL, 2014).

These factors prompted the Central Bank of Libya to take steps toward the development of a banking sector that could keep pace with global development (CBL, 2014). The Central Bank of Libya embarked on a planning process, launching the implementation of a national payments system and preparing for technical studies and strategic planning. The Central Bank of Libya implemented these steps by establishing contracts with international companies specialising in the implementation of the project components of the Libyan national payments system. These include the following systems:

- Automated Clearing House:

This aims to carry out all financial transactions resulting from the financial processes between banks and their customers; such as, the payment of salaries, bills and other services.

- Automated Cheque Processing:

This clears cheques between banks by adopting electronic methods of scanning, digital filing, and transferring net operations to an automated clearing system to allow for the settlement of cheques between banks in an efficient and secure manner.

- Automated Teller Machine (ATMs), Point of Sale (POS) Card Management System:

This provides the infrastructure for ATMs / POS, so that there is a means of accessing all client accounts in a bank and enabling cash withdrawals, across the national network, using national ID cards. In addition, the infrastructure will enable merchants, their customers and companies to provide services and complete the payment of fees for services using electronic points of sale and delivery of all electronic financial transactions internationally.

- **Communications and Networks:** Work is underway to connect all the systems of the project to the Central Bank of Libya and to commercial banks through various methods of communication; such as, satellite, wireless networks, fibre optics and microwaves. This then provides software for encryption and protection to provide a secure system for data transmission between the banks and data centres.
- **Core Banking System:** This system aims to develop techniques and methods of work that can be used by national banks to adopt extensive technology derived from national payment system projects and to promote competition in the banking world.

Highlighting current payment systems, may reflect on the availability of EPS and its position in Libya in the future. Hence, in the following section the researcher highlights and discusses factors that affect the success of EPS adoption.

## **2.6 Factors affecting E-payment Systems adoption**

Various authors have conducted studies on factors affecting successful adoption of EPS and these focus either on organisations or consumers. For example, a study was conducted by Takele and Sira (2013) to examine a number of factors affecting adoption

of internet banking in Oman from the organisational perspective. The study's results provide a realistic picture about the adoption of internet banking in the financial sector in Oman. Various interesting findings were found to act as barriers such as security issues, lack of strategic planning within the organisation, lack of a technical infrastructure such as software, lack of top management support, the severe shortage of IT skills, and lack of government support. On the contrary, Antwi *et al.*, (2015), Haruna (2012) and Kumaga (2010) investigated factors, such as the challenge of implementing electronic payments in Ghana from a customer perspective. The findings were categorised into four main groups; i.e. Security, Infrastructure, Legal and Regulatory issues, and Socio-Cultural issues. Whilst Padachi *et al.*, (2008), in relation to a study conducted in Mauritius, identified the most significant factors impacting on the implementation of EPS as ease of use, resistance to change, trust and the relationship between bankers, cost of computers, Internet accessibility, the convenience of use and security concerns.

One of the important challenges in the literature concerning adoption technology aims to understand users' perspectives (Gagnon *et al.*, 2012; Tan & Teo, 2000, as cited in Martins *et al.*, 2014). With regard to adoption literature, a number of scholars (Karjaluoto *et al.*, 2002; Tan & Teo, 2000; Sathye, 1999; Moore & Benbasat, 1991; Davis *et al.*, 1989; Davis, 1985; Ajzen, 1985; Rogers, 1983), have argued that the key to technology adoption is users' attitudes and perceptions. Consequently, economic, socio-organisational, political and technical factors together comprise the knowledge gap, which relates to factors that the current research seeks to address from an organisational and customer standpoint (as has been mentioned in section 1.2). In this regard, various

researchers from Arabic countries (Mohamed, 2013; Aldraehim *et al.*, 2012; Khalfan & Akbar, 2006; Al-Sukkar & Hasan, 2005) have argued that theories pertaining to the adoption of technology were developed in developed countries, and therefore reflect the values, perspectives and attitudes of those societies. Consequently, it is necessary to consider the factors that are inherent within each country as variables (Aladwani, 2001). Therefore, the following subsections highlight the main factors selected as affecting EPS for use for the purpose of this research.

### **2.6.1 Economic Factors**

The development of the economic sector in developing countries comprises an essential role for furthering the adoption of new technology in the move toward EPS (Elbasir & Howley, 2013; Elbasir *et al.*, 2013; Jamshidi & Hussin, 2013; and Wang *et al.*, 2003). The EPS in developing countries is needed to raise further concerns, owing to economic factors that may affect the adoption of such systems (Ifinedo, 2012; Gholami *et al.*, 2010). With this in mind, few studies are known to have highlighted the integration of new technology relative to economic requirements that may potentially develop the telecommunications sector. For instance, Roycroft and Siriwan (2003) stated that, 'Economics always play an important role in encouraging the use of technology in developing countries' (p.65); meanwhile, William and Simon (2006) argued that they believe there are thirty-six business and government institutions in five Caribbean nations, each facing numerous barriers as a result of their study. For example, economic factors may be insufficient to facilitate the adoption of EPS in isolation; to be more specific, the banking sector needs to introduce cooperative strategies to fulfil the demands of EPS.



In an attempt to achieve successful adoption of technology and support EPS, Baddeley (2004) argued that universal acceptability warrants an investigation of key factors from an economic standpoint. This can only be achieved by introducing various factors, such as reducing the costs of internet access and cooperation with existing institutions in developing countries, i.e. cooperation between governments, companies and banks (Yuan *et al.*, 2010; Baddeley, 2004). This corresponds with a study conducted by Rosen (2001), who claimed major widespread acceptability in the case of successful use of PayPal resulted in cooperation with a large base of user entities (e.g. the eBay auction website). However, the following subsection examines the importance of Islamic banking as an integral element in developments towards the adoption of an E-payment system, whilst following the principles of Islamic Sharia law.

#### **2.6.1.1 Islamic Banking and Finance**

Over the past fifty years, the growth of Islamic banking has emerged in the prevailing Islamic Countries (Johnes *et al.*, 2014; Wardey, 2010). Therefore, understanding the principles of Islamic banking and finance is very important in sectors that are growing very rapidly amongst the global banking industry, particularly due to its distinctive characteristics (Tabash and Dhankar, 2014). Moreover, since then, many efforts have been made to establish integrated Islamic banks that rely on Islamic principles and regulations, according to which usury is strictly forbidden (Ahmed *et al.*, 2015). However, the importance of the concept of Islamic banking services and the creation of a stable financial system did not attract large scale worldwide attention until the occurrence of the global financial crisis in 2008.

In some countries, Islamic banking services, and other Islamic financial services, have become of great importance to the economic climate (Noman, 2015; Dridi, 2012).

Above mentioned studies have discussed the relevance of the principles of Islamic financing and its instruments for achieving financial stability under different conditions and in various financial environments. For example, Duran, *et al.* (2012) stated that the importance of Islamic finance depends upon the principles of Islamic Sharia law, according to which Muslims cannot lend or accept money from people with the expectation of any benefit, otherwise known as interest (Qur'an, Verse 2: 275). ). Furthermore, according to Abedifar, *et al.*, (2014), Shariá compliant services now total around \$2 trillion in global financial assets, of which 80% is accounted for by Islamic banks or Islamic windows of conventional banks, 15% by Sukuk or Islamic bonds, 4% by Islamic mutual funds and 1% by Takaful or Islamic insurance.

The rapid growth of e-commerce, transferred via globalisation, as a means to carry out commercial transactions on a large scale, is widely acknowledged (Beulen *et al.*, 2010). Similarly, the concept of using credit card payments for transactions at the point of sale has become more widely applied during the process of online transaction payments (Samed, 2013). It is evident that electronic payment systems are a prerequisite for e-commerce, online transactions, because it is necessary for consumers to pay for products and services (Meisami and Hasanzadeh, 2012). The use of electronic payment methods such as credit cards, which usually attract higher interest rates, represents an obstacle to the Islamic banking principles, since it is clearly contrary to the Islamic concept of legitimacy (Hamed and Berger, 2012). As a result, Muslims prefer to buy goods or services using electronic payment systems that do not involve the payment of interest (Al Mowalad and Putit, 2013; Al Ghamdi, *et al.*, 2012). In the chapters concerning the Findings, discussion, and explanation of the research findings from different theoretical position, the researcher will examine and evaluate economic factors

as a means of adopting EPS within the Libyan telecommunication sector. In addition, the situation of political unrest in Libya has made it essential to consider the needs of the economic sector.<sup>1</sup>

### **2.6.2 Socio-organisational Factors**

Studies by Shin *et al.*, 2013, AlGhamdi *et al.*, (2011), Özkan *et al.*, (2010), Kleijnen *et al.*, (2004) and Karahanna and Limayem (2000) clarify why social factors exert a significantly positive influence on people's intention to adopt new information technology; thus indicating that people are affected by their environment. Jennifer *et al.*, (2003) argue that social and cultural factors can be associated with the government framework: for instance, in Asia, this relates to personal relationships formed via the government, which are crucial for the adoption of e-businesses via the internet (e.g. EC and EPS).

In consideration of the literature, Wie (2005) found that, generally, people express reservations concerning online payments, possibly due to a lack of awareness about how to adopt new technologies, such as EPS or EC. Furthermore, awareness of EPS should proceed after attaining clear understanding of a number of issues affecting individuals and organisations. In this way, Al-Mabrouk and Soar (2009, p.113) argue that awareness concerning EPS depends on two main factors: economic and political training in a country and education facilities.

In recent years, literature has sought to determine the degree to which social factors play a role in expediting decision-making in the area of payments made via the internet (Özkan *et al.*, 2010). Socio-organisational factors incentivise providers of e-commerce

---

<sup>1</sup> The pilot study has been conducted before the unrest situation in Libya

sites, encouraging customers to adopt electronic payment systems (Jennifer *et al.*, 2003). Therefore, throughout this study, the impact from socio-organisational factors will be considered as the research aims to explore the impact of context on the Libyan telecommunications companies, and will subsequently discuss if this might affect EPS adoption.

### **2.6.3 Political Factors**

Political factors are associated with, and applied systematically by, groups formally appointed within a country (Veit *et al.*, 2014; Kshetri, 2007). In terms of government roles, political factors clarify levels of advancement in information technology and training experience, allowing both buyers and sellers to understand and adopt EPS (Csaki *et al.*, 2012; Lawrence & Tar, 2010, pp. 32–33).

There has been conflict regarding the political factors affecting the adoption of EPS in developing countries and, in particular, North African Countries (NAC). For example, Azab *et al.*, (2009, as cited in Dolan, 2014) and Adam (2008) claim there is ample evidence suggesting legal frameworks are amongst the main obstacles to the utilisation of EPS. A survey conducted amongst consumers in Brazil argued there were major impediments to the use of EPS owing to government regulations. For example, privacy, security, the lack of commercial laws for EPS, inadequate legal protection for those making internet purchases and concerns regarding the imposition of taxes on internet purchases (Tigre & Dedrick, 2004).

Similarly, another study conducted in China established that consumers have serious reservations about buying online, stemming from the lack of government laws encouraging EPS adoption (Jennifer *et al.*, 2003, p.13). Interestingly, Vatiro (2009)

argues that political power, as a form of power in society, allows governments to control some or all public resources, including labour and wealth. In addition, that political power is not limited to leaders of countries, but can be extended to individuals or groups in possession of power to influence society.

Given the presence of a supportive legal framework as an important requirement associated with strengthening confidence in information, communication technology and e-business (and thus strengthening the development of adoption of EPS (Alev & Vincent, 2004; Wallsten, 2003); relevant legislation should be reconsidered as appropriate for identifying and eliminating the factors that prevent companies from using information and communication technology, especially in the area of electronic business (Rouibah *et al.*, 2009). However, the following subsection outlines the situation of political unrest in Libya.

#### **2.6.3.1 Political unrest in Libya**

In the middle of February 2011, anti-government protests broke out across Libya, and by the eighteenth of February the opposition had taken control of the second-largest city, Benghazi. The Libyan government at that time (the Gadhafi regime) dispatched elite troops and militia in an attempt to recapture Benghazi, but they were repelled (Cerone, 2012). In addition, by the twentieth of February protests had become widespread and reached the capital city of Tripoli, leading to a television address by Saif al-Islam Gaddafi, who warned the protestors that the country could slip back into civil war. The death toll was increasing, which drew international condemnation that led to the resignation of a number of Libyan diplomats, along with calls for the dismantling of the government (Maertens *et al.*, 2014). Moreover, the unrest turned into a civil war between the opposition and the Gadhafi regime that eventually saw the collapse of the

government under its long-standing ruler, Al-Gaddafi. Since then, there has been a transitional government, followed by a freely elected parliament and government. The real GDP growth rate of the country was the highest in the world in 2012 (+121.9%), following a 59.7% decrease in 2011 and, hence, bringing the country almost back to pre-war levels (CIA, 2013). However, the security situation in the country remains problematic, with various attacks across the whole country and specifically on the eastern side, and militia activities continue to occur.

Overall, the insecurity in Libya stems primarily from the lack of disarmament and demobilisation of the rebel militias after the war, which has been recognised by the political leadership in Libya and by international advisers from the outset, although none of them were able to implement these measures (Capasso, 2014). As a result, different types of armed groups controlled large parts of the country and the elected government was selected as they desired. The consequent lack of security has had an effect on the process of state-building in Libya, where the country is politically very weak following Gaddafi (Chivvis and Martini, 2014).

Taking this into consideration, it is pertinent to emphasise that this study will investigate whether or not the influence of political unrest in Libya could affect the adoption of EPS within the Libyan telecommunications sector. With the above in mind, it is pertinent to emphasise that this study will also investigate the influence of political unrest in Libya, in terms of whether or not it could affect the adoption of EPS in the Libyan telecommunications sector.

#### **2.6.4 Technical and System Quality Factors**

Technical factors are described by Dalvand *et al.*, 2014, Basias *et al.*, (2012, p. 170), Lawrence & Tar (2010, pp. 32–33), Sarrab *et al.*, (2013a), and Sarrab *et al.*, (2013b), relative to difficulties acquiring the appropriate technologies to meet EPS adoption requirements. Meanwhile, Turban (2002) argues that EPS faces a number of different limitations on system quality, such as the internet, security, trustworthiness of sites, reliability of EPS, acceptability, ease of use, accessibility and convenience.

Security is a key concern associated with online payments, as it is based on transfer and storage data that can be hacked if inadequately secured (O'Mahony *et al.*, 2002; Havinga *et al.*, 1996; Swatman, 1997). In addition, Abukhzam (2010), Shim and Lai (2003, p.230) and Turban (2002) further argue that, studies in developing countries have shown the effects of trust and reliability are important security concerns influencing the adoption of EPS and e-banking, and further emphasising that individuals assess the online medium of the transaction prior to using EPS.

Interestingly, in Libya, Ullah *et al.*, (2013), Abukhzam and Lee (2010, pp.7-10) claim, most e-banking fears relate to transaction errors and fraud, with scholars adding that the Libyan banking system is affected by many negative influences, such as acceptability, ease of use, accessibility and convenience, all of which act as a barrier to e-banking. Conversely, Hunaiti *et al.*, (2009, p.37) argue that the absence of a Libyan postal system has played a significant role in online transactions in the Libyan context. Therefore, technical factors will be investigated here in terms of whether or not this may affect the Libyan telecommunications sector, with a subsequent examination carried out in

relation to whether or not unrest in Libya can influence the adoption of EPS from a technical standpoint.

## **2.7 Summary and conclusion**

This chapter revealed and discussed a number of critical factors effecting successful adoption of EPS, and their impact on each other. In addition, based on this discussion the researcher was able to explain the impact of the following factors: socio-organisational, economic, political and technical on the adoption of EPS, and to identify which is/are the significant factor/s potentially influencing EPS adoption, as explained in more detail with supporting examples in chapter 6.

Section 2.3 covered how the various types of EPS transactions are classified into categories and can be considered relative to the functionality of EPS transactions. The chapter also offered a brief introduction to Libya, its location, geography, borders, population, religion, and culture, and explained the motivations for selecting Libya as the subject of this research. Moreover, throughout this chapter, the researcher offered background regarding the payment system in Libya; although Libyan banks have not yet adopted modern technologies such as internet access, core banking solutions and e-banking related software (CBL, 2014). The Central Bank of Libya (CBL) has realised the benefits of the implementation and development of technologies and improved banking activity, launching the National payment systems (as explained in section 2.5). It is, therefore, appropriate to highlight the proposed research methodology in the following chapter, emphasising research paradigm, research methods and data collection methods for use in the current research.



### 3 Research Methodology

#### 3.1 Introduction

This chapter presents and explains the research methodology employed in this research, and justifies its use, and explains its limitations (see section 3.4.6). It considers the selection of appropriate research techniques, employing and adhering to the rules of chosen research methods, and ensuring the research follows a clearly defined path, as explained in section 3.4. The chapter describes the main data collection methods available, which can be employed to support qualitative research methods, such as interviews, questionnaires and observations. This is followed by justifying a selected research approach, research methods and data collection method, as explained in section 3.3.4, 3.4.6, and 3.6.2. It concludes with a summary of conclusions about suitable techniques employed to conduct this research. Before illustrating and justifying appropriate research methods and techniques for use in this study, it is first necessary to define the research approach, research methods and the research methodology, as explained by Kumar:

*Research methods means all those methods and techniques that are used for conducting research, and thus refers to the methods the researcher uses in performing research operations (Kumar, 2008, pp.4–5).*

*Research methodology is a way to systematically solve the researcher's problems; it may be understood as the science of studying how research is done scientifically (ibid, p. 6).*

*The research approach is that the researcher should himself pose a question and procedures for throwing light on the questions concerned for formulating or defining the research problem (ibid, p. 22).*

Therefore, the researcher considered the previous definitions in the design of the current research process. In other words, the researcher distinguished between research methods, methodologies, and approaches, as defined by Kumar (2008). Since the objective of research, especially applied research, is to find a solution to a specific problem, the existing data and unknown features and factors need to be connected with each other to make the information as clear as a possible.

It is subsequently appropriate to discuss and justify the selection of an interpretative paradigm for the purpose of the current research; section 3.2 and its subsections explain the options available and the choice of paradigm.

### **3.2 Research paradigm**

The section will discuss the main three paradigms that exist in the area of IS research. The term paradigm originates from Greek (paradeigma) and Latin (paradigma) and means literally 'to exhibit side by side; more figuratively, it signifies a pattern or an example of something (Stanage, 1987, p.6). The meaning of paradigm implies ideas and mental images or styles of thinking. Explained another way, a paradigm can be seen as the action of submitting to a point of view (Stanage, 1987); the latter interpretation is also supported by Denzin and Lincoln (2000, p. 157). Oates (2006) defines research paradigms as, "*A set of shared assumptions or ways of thinking about some aspect of the world*" (p.282). In reality, there are many different definitions of paradigm,

although most offer a similar meaning. The differences generally depend on the researcher's perspective.

Many researchers, such as Denzin and Lincoln (2000), Guba and Lincoln (1994) and Henning *et al.*, (2004) contributed to defining a research paradigm to provide illumination. Guba and Lincoln stated:

*A paradigm may be viewed as a set of basic beliefs ... that deals with ultimate or first principles. It represents a worldview that defines for its holder, the nature of the "world", the individual's place in it, and the range of possible relationships to that world and its parts [...] The beliefs are basic in the sense that they must be accepted simply on faith (however well argued); there is no way to establish their ultimate truthfulness. If there were, the philosophical debates [...] would have been resolved millennia ago. (Guba and Lincoln, 1994, pp.107-108)*

For their part, Henning *et al.*, (2004) understand a research paradigm as "a theory or hypothesis", which is based on a framework of theories that affect how people see the world; identifying their point of view, and shaping their understanding of how things are connected. Particular worldviews resulting from an underlying paradigm might include the influence of personal behaviour, professional practice, or the position taken by a person with regard to a particular research subject.

With regard to research practice and its underlying philosophical assumptions, the information system research paradigm is shown to have certain key characteristics that can be classified into three fundamental categories:

Firstly, it is ontological, depending on whether the empirical world is considered to exist 'objectively' and independent of human observers, or 'subjectively' by

construction through human action and belief (i.e. what is the form and nature of reality?). Secondly, it has an epistemological character, that is, in terms of its assumptions about the nature of knowledge, and how knowledge is created and evaluated, i.e. what are the basic beliefs about knowledge, or what can be known? The final dimension is methodological character; that is, the relationship between theory and practice, i.e. how can the researcher go about finding out if whatever s/he believes can be known? (Orlikowski and Baroudi, 1991). Some researchers such as Orlikowski and Baroudi (1991) and Klein and Myers (1999) have distinguished three paradigms of Information system research: positivist, interpretive, and critical, as illustrated in the following section.

### **3.2.1 Positivist Paradigm**

Positivism has been defined according to Cooclian (2004) as a “scientific method”, and reality is objectively given and can be discovered by employing measurable factors that are independent of researchers and their instruments (Oates 2006; Myers and Avison 2002, p.6). The positivist paradigm, was claimed by the French philosopher Auguste Comte (1798 -1857), who examined its use in the social science and confirmed that observation and reason could be a means of understanding human behaviour. According to Comte, true knowledge is based on what is experienced by the senses, and what can be obtained through observation and experiment.

Those accepting this paradigm have adopted the methods of the natural sciences as a means to generate knowledge about human society. The scientific method should be understood within the context of certain principles and scientific hypotheses, which, as Cohen *et al.*, (2000) noted, are determinism, empiricism, parsimony, and generality.

The meaning of determinism is that events are caused by other circumstances so that cause follows effect in a predictable fashion; hence, achieving an understanding causal links is both possible, and necessary for prediction and control. Secondly, empiricism means the collection of verifiable experience-based evidence to support theories or hypotheses. Parsimony refers to the explanation of phenomena in the most economic manner possible. Generality is the goal of generalising observation of a particular phenomenon to an observation about all such phenomena.

Using such assumptions, the vital goals of science came to be understood as systematising and integrating the results of observations and experiments into a pattern or meaningful theory, which is viewed as intermediate and not the ultimate truth. A theory may be subject to review or modified by new evidence, as it enters into existence. The positivistic paradigm systematises the process of generating knowledge with the help of quantification. This is necessary to promote accuracy in the description of parameters, and insight into the relationship between them. However, Collis and Hussey (2009, 2003) present key criticisms of positivist research in the social sciences as follows:

- It is impossible to consider individuals as separate from their social environment, so they cannot be understood without considering and examining the meaning, views and motivations attributed to their own work.
- The results of such research has neglected important and interesting meanings.

According to Orlikowski and Baroudi (1991, pp.4-12) the aim of positivist researchers is to clarify and predict external reality, rather than people's attitudes, experiences and perceptions, and this requires researchers using the positivist paradigm to ignore certain

aspects of social reality. A positivist paradigm may not be appropriate to this research, because the main criticism from a positivist research perspective is that the interview influences the social process of the interview, and, under positivism, the impact of the interviewer on data collection tend to be ignored, due to the assumed objectivity of the interviewer. In addition, positivist research ignores participant effects, that are, for example, when participants understand questions in a different way to that intended by the researcher.

### **3.2.2 Interpretative Paradigm**

The interpretative paradigm assumes that social reality is interpreted by the individual in accordance with other people, and through interaction with the wider social system. Knowledge is the personal experience of each individual, rather than something obtained from or imposed from the outside. Orlikowski and Baroudi (1991) state that interpretive research assumes ‘people create and associate their own subjective and inter subjective meanings as they interact with the world around them’ (p.5).

Cohen *et al.*, (2000) further assert reality is multi-layered and complex, and that a single phenomenon may be subject to multiple effects, the main concern being to unearth the unexplored dimensions associated with various phenomena, rather than to theories relationships between components. Interpretative research has been subject to various criticisms from a number of scholars; namely Walsham (1995), Bernstein (1985), Fay (1987, p.92) and Gibbons (1987), all of whom have proposed different deficiencies associated with interpretive research:

- The interpretive perspective does not examine external circumstances, which lead to the emergence of some meanings and experiences.

- Research, from this perspective neglects to explain the unintended consequences of action, which, by definition, cannot be clarified in reference to the intentions of the human beings concerned. For example, Giddens (1979) suggests a significant and unintended human action is one, which enhances the procedures, beliefs, and relative strengths of members of a group in order to maintain the structure and practices of that group over time.
- The interpretive perspective does not address or analyse meanings that narrow-minded actors may introduce to understand fate and limited interactions in social development. Importantly, this perspective cannot occur unless accounts of participants' actions and intentions are inconsistent with their actual behaviours, and so it is impossible to distinguish between or otherwise analyse the understanding of individuals blinkered in terms of their understanding, and limited in terms of their social interaction. Fay (1987, p. 96) notes that this perspective 'assumes an inherent continuity in a particular society; i.e., it systematically ignores the possible structures of conflict within a society, structures which would generate change.'
- The interpretative perspective ignores the need to explain historic change; that is, how a social order came to be what it is, and how it is likely to change over time. Orlikowski and Baroudi (1991, p. 18) describe the interpretive as 'Neglect[ing] to explain historical change; that is, how a particular social order came to be what it is, and how it is likely to vary over time'.

Therefore, it is appropriate to consider how this paradigm may advance the aims of this research. Thus, it attempts to understand how and why, through social interaction and participation, participants can ascribe certain subjective meanings within the Libyan

context; that this society cannot understand without knowledge of the beliefs and interpretations of people related to it. It is important to recognise this subjectivity and anticipate that each person will hold different views, perception and experiences concerning which factors affect the adoption of EPS in Libya. The importance of perception and views requires understanding of social and human factors, and this only can be achieved by Interpretivists. The interpretative paradigm will assist the researcher to understand phenomena in depth, rather than quantifying them without pre-defined constructs. Rather, it provides the researcher with an opportunity to examine peoples' attitudes and perceptions when answering the research problem. Therefore, it allows new concepts and issues to emerge. Thus, it offers a fuller picture than other research methods, such as, a survey, which undertakes to answer questions, pre-specified in the literature by the researcher.

The two paradigms above are concerned with two different versions of social reality. While a positivist approach depends on objectivity, measurement and the ability to construct laws and rules governing human behaviour, the interpretative paradigm is essentially based on the understanding and interpretation of phenomena. In addition to these two main paradigms, there is a third paradigm, the critical paradigm, as will be discussed below.

### **3.2.3 Critical Paradigm**

Researchers consider that social reality is constructed according to a historical perspective, and that it is created and recreated by individuals (Myers & Avison, 2002). Critical theory assumes objective observation is impossible and that all knowledge is created from or justified by social context; therefore, the critical research and



interpretive paradigms share several key features (Khazanchi & Munkvold, 2003). An information system research study therefore, can draw on this paradigm:

*“IS research can be classified as critical, if the main task is seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light”* (Klein & Myers, 1999, p. 3). Thus, the difference between interpretative and critical qualitative research is the researcher’s primary objective. Interpretative research aims to generate meaning, in other words, it attempts to explain and describe, to make sense of interesting things. Critical research aims to change the status quo, by working systematically through research problems to generate responses to research questions and achieve change in light of these responses, because the aim of the critical paradigm is transformative (Taylor *et al.*, 2006). Critical research aims to *“free human subjects from oppressive regimes within societies and within the institutions that constitute them”* (McGrath 2005, p.88). Hence, Stahl (2008) argued that people’ intention is *“to change the social status quo, overcome injustice and alienation, and promote emancipation”* (p.138).

The critical research paradigm might be used within the current research discipline, because there are many similarities between critical and interpretive research paradigms (Khazanchi and Munkvold, 2003), and the critical paradigm also seeks to provide a theoretical framework to support the majority of interpretive research paradigms. Moreover, it employs methods that are compatible with this study’s aim to seek interaction between ideas and opinions about the factors and barriers that might affect the adoption of EPS in a Libyan context. Table (3.2-1) below presents a summary of the three main research paradigms.

	Positivist	Interpretivist	Critical research
<b>Ontological Assumptions</b>	"Naive Realism" in which an understandable reality is assumed to exist, driven by immutable natural laws. The true nature of reality can only be obtained by testing theories about actual objects, processes or structures in the real world.	Relativist: the social world is produced and reinforced by humans through their action and interaction	Historical realist: social reality is historically constituted; human beings, organizations, and societies are not confined to existing in a particular state
<b>Epistemological Assumptions</b>	<ul style="list-style-type: none"> <li>• Verification of hypothesis through rigorous empirical Testing.</li> <li>• Search for universal laws or principles</li> <li>• Tight coupling among explanation, prediction and control</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of the social world from the participants' perspective, through interpretation of their meanings and actions</li> <li>• Researchers' prior assumptions, beliefs, values, and interests always intervene to shape their investigations.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge is grounded in social and historical practices</li> <li>• Knowledge is generated and justified by a critical evaluation of social systems in the context of researchers' theoretical framework adopted to conduct research</li> </ul>
<b>Relationship between Theory and Practice</b>	It is possible to discover universal laws that govern the external world	Generative mechanisms identified for phenomena in the social sciences should be viewed as 'tendencies', which are valuable as explanations of past data but not wholly predictive for future situations	<ul style="list-style-type: none"> <li>• Generalizations point to regularities of process rather than cross sectional differences</li> <li>• Generalization in critical research focuses on the "totality" of relationships</li> <li>• There can be no theory-independent collection and interpretation of evidence to conclusively prove or disprove a theory.</li> </ul>
<b>Role of the Researcher</b>	Objective, impartial observer, passive, value-neutral	Interactive; the researcher interacts with the human	Transformative; initiating change in social relations and

		subjects of the enquiry, changing the perceptions of both parties	practices, helping to eliminate the bases of alienation and domination.
--	--	---	---

Table 3.2-1 The three major research paradigms

(Source: Khazanchi & Munkvold, 2003).

Table 3.2-1 permits comparison between the three paradigms; it also shows a relationship between theory and practice, and outlines a role for the researcher in the three philosophical approaches. Having discussed the relationship between the three main paradigms, it is appropriate to say that all three paradigms are perfectly acceptable to IS researchers in particular and social science researchers in general.

The positivist paradigm cannot support this study's aim to obtain subjective opinions and experiences from the individual's researched. This is because the aim of positivist researchers is to clarify and predict external reality, rather than rely on individuals' perceptions, and experiences (which rules out the study's goal of exploring and investigating factors and barriers that may influence adoption of EPS in a Libyan context). A positivist approach would require researchers to ignore aspects of social reality (Orlikowski & Baroudi, 1991).

Having discussed the three main three paradigms that support IS research and also illustrated and justified the interpretive paradigm herein, it is now appropriate to present the two associated research approaches; quantitative and qualitative.

### **3.3 Quantitative and Qualitative Research approaches**

Collis and Hussey (2003, 2009) classify research into two types: quantitative and qualitative. Bryman (2001, p.20) claims that quantitative research involves research methods that are objective in nature and which notably concentrate on quantification in

data collection and analysis in order to test theory. In contrast, he describes qualitative research as necessary to understand phenomena or test theory, as a strategy informing various types of research, predominantly emphasising words rather than numbers during the stages of the collection and analysis of data. Additionally, Moore (2002, p. 121) illustrates that quantitative research is a method emphasising ‘what is happening’, whilst qualitative research is a way of knowing ‘why it is happening’. Essentially, it is about the application of strategies to understand detailed views associated with a participant’s attitudes and behaviours.

In regard to qualitative methods, the relationship between the researcher and the participant is often less formal than in quantitative research. In contrast, with quantitative methods, such as surveys and questionnaires, researchers ask all participants similar questions in the same order, with participant responses reflecting a selection of closed or fixed categories (Hollow & Biley, 2011; Shank, 2002).

### **3.3.1 Quantitative research approach**

Quantitative research is the most widely used approach in the natural and social sciences, providing a systematic empirical investigation of observable phenomena through the development and employment of mathematical techniques, theories and/or hypotheses (Punch, 2013; Bryman, 2012). Furthermore, the quantitative approach emphasises the use of quantification in the collection and analysis of data, by measuring variables and testing hypotheses (Creswell, 2013; Robson, 2011, p.18). There are many different types of quantitative methods, including experiments, content analysis and questionnaire surveys. Moreover, Denscombe (2010) argues that the quantitative approach has attracted many researchers due to its scientific strength, in addition to the

popularity of manipulating numbers and the association with graphs and tables to display the results. Furthermore, quantitative research methods are used to prove or disprove hypotheses through the identification of independent and dependent variables. It does not benefit the researcher to detect any changes emerging during the investigation. Moreover, surveys and experiments are good examples of quantitative research methods, which usually belong to a form of positivist paradigm (Creswell, 2013). Thus, Creswell states that quantitative studies “employ strategies of inquiry such as experimental and surveys, and collect data on predetermined instruments that yield statistical data” (2003, p.18 cited in Nguyen and Quan, 2013).

Therefore, having outlined the quantitative research approach, the following sub-section explains the qualitative research approach taken for the purposes of this study.

### **3.3.2 Qualitative research approach**

Qualitative research is used to explore issues, understand phenomena and answer questions in context-specific settings, such as the "real world setting [where] the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2002, p. 39, as cited in Aguirre *et al.*, 2014). It seeks out the why, not the how, of the subject, through the analysis of unstructured information, such as, interview texts, recordings, e-mail messages, notes and feedback forms, pictures, videos. This differs from quantitative researchers who rely on numbers or statistics to reach conclusions (Hoepfl, 1997, pp.47-67).

Shank defines qualitative research as “*a form of systematic empirical inquiry into meaning*” (2002, p.5). Denzin and Lincoln (2000) claim that qualitative research involves an interpretive and naturalistic approach: “This means that qualitative

researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them” (2000, p.3).Some researchers opine that the key difference between quantitative methods and qualitative research methods is flexibility. For example, Denscombe (2003, pp. 280-282), who states that the distinction between both “Relate to treatment of data, rather than the research methods as such”.

The degree of flexibility preferred reflects the kind of understanding of a problem the researcher is pursuing through the method used. However, it requires a thorough understanding of significant questions to ask, the best way to ask them, and a range of possible responses. For example, open-ended questions are typically asked in qualitative research, as it is not essential for them to be worded in exactly the same way for each participant, and participants have the opportunity to respond in more detail using their own words.

In the case of qualitative methods, the relationship between researcher and participant is often less formal than it is in the quantitative research. In contrast, with quantitative methods, such as surveys and questionnaires, for example, the researchers ask all the participants similar questions, in the same order and the participant’s responses may be selected from closed or fixed categories. Table 3.3-1 briefly outlines the major differences between quantitative and qualitative research methods.

	Quantitative	Qualitative
<b>General framework</b>	Seek to confirm hypotheses about phenomena.  Instruments use a more rigid style of eliciting and categorizing responses to questions.	Seek to explore phenomena.  Instruments use more flexible, iterative style of eliciting and categorizing responses to questions.

	Use highly structured methods such as questionnaires, surveys, and structured observation	Use semi-structured methods such as in-depth interviews, focus groups, and participant observation.
<b>Analytical objectives</b>	To quantify variation.  To predict causal relationships.  To describe characteristics of a population	To describe variation.  To describe and explain relationships.  To describe individual experiences.  To describe group norms.
<b>Question format</b>	Closed-ended	Open-ended
<b>Data format</b>	Numerical (obtained by assigning numerical values to responses).	Textual (obtained from audiotapes, Videotapes and field notes).
<b>Flexibility in study design</b>	The study design is stable from beginning to end.  Participant responses do not influence or determine how and which questions researchers ask next.  The study design is subject to statistical assumptions and conditions.	Some aspects of the study are flexible (for example, the addition, exclusion, or wording of particular interview questions).  Participant responses affect how and which questions researchers ask next.  The study design is iterative, i.e. data collection and research questions are adjusted according to what is learned.

Table 3.3-1 The major differences between quantitative and qualitative research approach

Source: (Mack *et al.*, 2005)

Having described the two most common research methods in use, and the interpretative paradigm, it is important to clarify the extent to which the design of a research study requires a choice of research methods and a decision concerning which methods to use. According to the research strategy selected, as explained in section 3.4, these may include a survey, case study, ethnography, action, experimental methods and grounded theory. Denscombe states that, ‘researchers who adopt the strategy are able to use the whole range of methods within the strategy; questionnaires, interviews, documents and observation’ (2010, pp. 153–234).

Having described the essential features of the two main research approaches used in IS, i.e. quantitative and qualitative research, it is now possible to move on to consider the proposed research approach and offer a justification of it.

### 3.3.3 The proposed research approach

This research will be mainly qualitative, proposing grounded theory in particular Straussian approach. Semi-structured interviews are a good way of gathering the majority of data required. In section 3.6.2 on the data collection method, the use of an interview is justified, while in section 3.3.4, the research approach will be justified.

Dwivedi *et al.*, (2008, p.11) conducted a study of the terms ‘adoption’, ‘diffusion’ and ‘acceptance’ in IS, presenting the results of a systematic and comprehensive review of more than 10,000 publications taken from 19 different peer-reviewed journals during the period 1985-2007, by authors/contributors who from an academic background (97.11%), and from 163 organisations/institutions contributing one article or more in the *Journal of Electronic Commerce Research* (JECR) from 127 different countries. Information system researchers use the three keywords ‘adoption’ ‘acceptance’ and ‘diffusion’ interchangeably in these publications. Nevertheless, Dwivedi *et al.*, (2008) proposes that adoption is the preferred term.

Nature of data	Count	Percent
Quantitative	62	44.6%
Descriptive/Conceptual	60	43.2%
Qualitative	15	10.8%
Mixed	2	1.4%
<b>Total</b>	<b>139</b>	<b>100%</b>

Table 3.3-2 Qualitative versus Quantitative



In terms of a preferred research paradigm, the positivist approach is currently employed much more frequently than both the interpretive and critical approaches. This means that those who research adoption and diffusion tend to neglect other paradigms, which has implications for researchers. Similarly, Malhotra and Birks (2003) state that the utilisation of quantitative techniques and survey research methods, as shown in Table 3.3-2 (Avison *et al.*, 2008, Chen & Hirschheim, 2004) have dominated research published in the JECR concerning adoption and diffusion. For measuring attitude and perceptions, quantitative techniques seem to have been preferred over other available alternatives across IS disciplines. IS adoption and diffusion research are increasingly tending towards an overall homogeneity, which is likely to weaken take up of technology research. It is therefore likely that adoption and diffusion research will diffuse only within a limited domain, whereas using a diversity of methods might have ensured a wider uptake. For this research, the qualitative approach is therefore deemed appropriate and more consistent with the purpose of this study.

#### **3.3.4 Justification for selected research approach**

The aim of this research is to investigate and explore the economic, socio-organisational technical, and political factors that may affect the adoption of EPS in the Libyan context and to explore how EPS may improve the services provided. Many IS researchers have chosen to utilise quantitative approaches within IS research, i.e. Benbasat *et al.*, (1987), Orlikowski and Baroudi (1991) and Alkout and Khalfan (2004), however qualitative research enables the researcher to consider people's attitudes, because they can answer questions and provide evidence that the researcher may not understand from the literature. The barriers preventing the adoption of EPS require an understanding of the perceptions and attitudes of potential users, and so qualitative research is applicable.

Furthermore, the research questions can be answered through qualitative enquiry by employing grounded theory, which can support access to opinions, perceptions, attitudes and thoughts among a specific group of people (see sections 3.4.6 and 3.5). Therefore, it is important for the qualitative researcher to insure that the sample group of participants have experienced the phenomenon (adoption of EPS), rather than recruiting people to the study who may be unable to answer the questions.

Having discussed the two main methodological approaches (quantitative and qualitative) and the three main types of research paradigm, it is important to clarify that the design of a research study also requires establishing research methods, and making a decision about which methods to use. Therefore, the following section reviews the six main research methods used in quantitative and qualitative research.

### **3.4 Research methods**

Following above discussion of the two main methodological approaches and the three main types of research paradigm, it is important to clarify whether the design of a research study requires choice of research methods, and decisions about which methods to use. The research method selected might be a survey, case study, ethnography, action, experimental, or grounded theory method. Denscombe states, “Researchers who adopt the strategy are able to use the whole range of methods within the strategy; questionnaires, interviews, documents and observation” (2003, pp. 6-7). It is now appropriate to review the five main research methods used with IS quantitative and qualitative research.

#### **3.4.1 Survey**

A survey can be used in the collection of data. It involves the same data being collected from all participants (Denscombe, 2003, pp. 6-7). Surveys can be used by researchers

with very different aims from diverse disciplinary backgrounds. The approach includes a variety of methods such as questionnaires and interviews, especially large-scale structured interviews, in which emphasis is placed on the quantitative analysis of data collected using statistical methods (David & Sutton, 2004).

The survey seeks to determine and establish a relationship shared between groups of respondents, and is therefore able to produce a general statement about involved phenomena. A large proportion of research studies rely on quantitative surveys (Avison *et al.*, 2008; Chen & Hirschheim 2004; Wareham *et al.*, 2005); however, the present study will instead adopt a qualitative method. Therefore, surveys are unsuitable for the purposes of this research.

### **3.4.2 Case study**

The case study is one of the most common research methodologies in the social sciences. It investigates phenomena within the real-life context of a single individual, a group, or an event, in order to explore causal relationships and uncover the principles underlying them (Alkout & Khalfan, 2004; Yin, 2009; Jon & Greene, 2003, pp. A- 22). Case study research is divided into two types; single and multiple case studies. The latter can include quantitative evidence based on multiple sources of evidence, and the development of theoretical proposals (Yin, 2014, 2009).

Yin (1994) defines case study research as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context especially when the boundaries between phenomenon and context are not clearly evident” (pp.13). Yin (2009) states that the case study should not be confused with qualitative research: in fact, it can be based on any combination of quantitative and qualitative evidence. Single-subject analysis in each individual case study provides a statistical framework for generating

conclusions, as it assists in recognising problems in their natural setting. Benbasat *et al.*, (1987, p.370) list three significant reasons why the case study method is suitable for information systems research:

1. Researchers can gather data and find evidence from the context then generate theories in practice.
2. The case study method allows researchers to answer 'how' and 'why' questions.
3. The case study method is an appropriate method to conduct research in an area in which few previous studies have been conducted. Case studies use multiple methods to gather data and information from one or more person or organisation enclosed in the scope of a problem. Benbasat *et al.*, (1987, p.371) identify the main characteristics of case studies, as shown in Table 3.4-1.

The main characteristics of case studies

- The phenomenon is examined in a natural setting;
- Data is collected by multiple means;
- One or several entities (person, group, or organisation) are examined;
- The complexity of the unit is studied intensively;
- Case studies are more suitable for the exploration, classification and hypothetical development stages of the knowledge-building process: the investigator should have a receptive attitude towards exploration;
- No experimental control or manipulation is involved;
- The investigator may not specify the set of independent and dependent variables in advance;
- The results derived depend heavily on the integrative powers of the investigator;
- Changes in site selection and data collection methods may take place as the investigator develops new hypotheses;
- Case study research is useful when seeking to answer "why" and "how"

questions because these deal with operational links to be traced over time rather than with frequency or incidence; and

- The focus is on contemporary events.

Table 3.4-1 Characteristics of Case Studies

Case studies might be either positivist or interpretive (Walsham, 1995; Darke *et al.*, 1998, p.276). The aim of designing and evaluating positivist case studies that they rely on standards of natural sciences research carried out through observation, and reliant on the ability to generalise (Lee, 1989, p.41). In contrast, interpretive case studies are not concerned with repeatability, but are based on principles from the interpretative paradigm (Darke *et al.*, 1998). Researchers use a case studies approach to test existing theory and to create and develop new theories (Yin, 1994; Darke *et al.*, 1998).

The purpose of this study is to investigate and explore economic, socio-organisational, technical, and political factors that may affect the adoption of EPS in a Libyan context and how EPS will improve the services provided. Due to a lack of previous studies addressing this phenomenon, which is both complex and contemporary, the case study method may be appropriate, as stated by Yin (1994), and Benbasat *et al.*, (1987). Reasonably, this gives the researcher the opportunity to explore people's attitudes, perceptions and experiences in relation to an issue; thereby, allowing new issues to emerge. In contrast, a quantitative survey can only offer answers to questions that are predetermined by the researcher based on existing literature. Moreover, the objective of such research is to understand rather than to quantify phenomena. However, by using the case study method, a researcher can collect data from different sources from participants (at both the organisational and client levels), as Yin proposed.

### **3.4.3 Ethnographic research**

This is a qualitative method frequently employed by researchers in the social sciences, particularly in anthropology and sociology. It is regularly used to gather empirical data on human cultures, and involves the ethnographer spending considerable time in the field, in many cases monitoring participants through interviews and questionnaires (Schensul, *et al.*, 2013; Myers and Avison, 2002). For example, in the design and evaluation of IS some collaborative research work has taken place between ethnographers and designers on the one hand, and computer scientists, IS professionals and engineers on the other (Myers and Avison, 2002).

To achieve such cooperation the researcher needs to select an appropriate organisation, in which the research problem is interesting, and where he can build a high level of trust with those with whom he wants to interact in order to collect the required data. Ethnography aims to describe the nature of people as studied through writing (Phillip, 2005, pp. 2-3, 16-17, and 34-44).

Ethnography may is not suitable for this research due to the limited time available for the study. Ethnographic research requires the researcher to give considerable time to developing relationships with participants in order to prepare them for accepting an in depth investigation and scrutiny. With regard to the time required for the collection of data and the implementation of many levels of interpretive analysis (that focus on understanding and interpreting observations) it is not unlike participant observation.

The main difference between a case study and ethnographic research is the role of the researcher, who in the latter approach, immerses himself or herself in the lives of the social group under investigation (Myers & Klein, 1999). The case study method, however, by contrast, does not necessitate such immersion, but instead requires other

sources of data, such as documentary sources. Besides the time limitations, there is another reason why an ethnographic approach is not suitable for this study. This is because the aim of the research is to understand and explore factors and barriers that might affect the adoption of EPS in a Libyan context, rather than to observe or monitor the participants' actions.

#### **3.4.4 Action research**

Action research is a method that assumes that the research itself, as well as the researcher, is subject to change in the existing social world. Action research aims to intervene in a problem situation to improve the way that issues are addressed, problems solved and results monitored. Large organisations may undertake action research to guide them to improve their strategies, and the knowledge-base upon which they practice. Consequently, it has two main goals: to resolve a given problem, and to contribute to science by altering the social environment (Collis and Hussey, 2003, 2009).

Action research seeks to acquire a subjective understanding of action and to use that understanding to improve or solve a problem situation. Nevertheless, Myers (1997, pp.1-2) stated that action research is not only an approach to problem-solving, but it also seeks to add to the body of knowledge within the social sciences. There is some criticism, however, with regard to the level of collaboration entailed in this method between the researchers and practitioners participating in the research. It is argued that this can compromise the nature of the investigative inquiry, and the method may therefore be considered similar to methods used by a research consultancy or even journalists (Gummesson, 1991).

### **3.4.5 Experiments**

Experiments are conducted in the laboratory in a normal way, permitting significant control by allowing the researcher to eliminate certain variables or maintain one or more variables as constant. Experimental methods are unlikely to fit the aims of this research, because they permit the determination of causal relationships. The objective is to work with independent variables to monitor the impact on one or more dependent variables (Yin, 2014; Collis & Hussey, 2003). Moreover, criticism of this method comprises the claim that laboratory settings do not reflect the authentic environment, and that there is a lack of realism when focusing narrowly on some variables (Collis & Hussey, 2003). This means the experiments are unsuitable for the purpose of this research.

### **3.4.6 Grounded Theory and its justification for selected research methodology**

Grounded Theory is a qualitative research method developed by Glaser and Strauss (1967) for use in the health sciences. However, it has been used by many IS researchers since the beginning of the 1990s, such as Coleman and O'Connor (2007, pp. 654–667), Allan (2003, pp. 1–10), and Orlikowski (1993, pp. 309–340). As there is a commonly held belief that it is a dependable method to apply to investigate socio-organisational phenomena, it remains comparatively novel in this field (Hughes & Jones, 2003, pp.19–21) following its introduction by Glaser and Strauss in 1967.

Grounded theory is based on the systematic collection and analysis of data (Myers &

Avison, 2002), which utilizes a set of procedures for establishing the foundations of a theory derived inductively from the phenomenon. Strauss and Corbin define it thus, 'Qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon' (1990, p. 24). In chapters



four and five, the researcher highlights the implementation of grounded theory as it applies in this research.

In this case study, the grounded theory method is an appropriate research method for exploring and investigating participants' views, opinions and perspectives concerning the adoption of EPS in a Libyan context, for a number of different reasons. Firstly, it a useful method for assisting the researcher to create a model with which to identify the factors' effects on the adoption of EPS in Libya. Secondly, it allows the generation of concepts and categories that help the researcher to develop theory, and thirdly, it provides the researcher with flexibility for updating interview questions in order to identify new and emergent issues.

The main difference between grounded theory and other research approaches is its specific development of theory, suggesting a constant interaction between the stages of data collection and analysis of data (Smith, 2000; Myers and Avison, 2002). Glaser and Strauss (1967) suggested that a researcher using grounded theory should approach a research setting without preformed ideas. A long period of time is required to collect data from the outset and without any theory in mind. However, in some contexts this might be difficult; for example, Allan (2003) states that there must be an agenda for a research interview held in industrial and commercial organisations, where busy personnel expect to have an agenda for meetings and a researcher is required to clearly identify their topics.

There is a debate between researchers wishing to employ the grounded theory method regarding their different styles of applying it (Fernandez, 2004, pp.110-119; Smith and Bryant, 2000). A researcher's academic background and experience, as well as the

characteristics of the project, may predispose them to choose one grounded approach over another. Onion (2006, pp. 8-9) highlights the main differences between a Glaserian approach and a Straussian approach, to help other researchers to avoid conflict by providing a useful tool in the selection and description of the most appropriate approach, as shown in Table 3.4-2.

Glaserian Approach	Straussian Approach
Beginning with general wonderment (an empty mind).	Having a general idea of where to begin.
Emerging theory, with neutral questions.	Forcing theory, with structured questions.
Development of a conceptual theory (Abstraction of time, people and place).	Conceptual description (description of situations).
The theory is grounded in the data.	The theory is interpreted by the observer.
Inductive method.	Inductive-deductive method.
The researcher is passive, exhibiting disciplined restraint.	The researcher is active.
Data reveals the theory.	Data is structured to reveal the theory.
Coding is less rigorous, a constant comparison of incident to incident, with neutral questions and categories and properties evolving. Take care not to 'over-conceptualise', identify key points.	Coding is more rigorous and defined by technique. The nature of making comparisons varies with the coding technique. Labels are carefully crafted at the time. Codes are derived from 'micro-analysis, which consists of analysis data word-by-word'.
Two coding phases or types, simple (fracture the data then conceptually group it) and substantive (open or selective, to produce categories and properties).	Three types of coding are, open (identifying, naming, categorising and describing phenomena), axial (the process of relating codes to each other), and selective (choosing a core category and relating other categories to that)
Regarded by some as the only 'true' Grounded Theory Methodology (GTM).	Regarded by some as a form of qualitative data analysis (QDA).

Table 3.4-2 Grounded theory variants

There are some similarities between the Glaserian and the Straussian approach in qualitative research, such as theoretical sampling, phenomenology, theoretical

saturation and constant comparison, because all assist the researcher to understand the research problem, cover data related to the research, the code data, develop and emerge theory (Glaser and Strauss, 1967; Strauss and Corbin, 1990).

### **3.5 Grounded Theory Techniques**

There are various techniques that can be utilised in qualitative research in the case of both Glaserian and Straussian approaches; i.e. theoretical sampling, phenomenology, theoretical saturation and constant comparison. All these methods assist the researcher in terms of understanding the research problem, covering data related to the research, coding data, and developing an emerging theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990).

#### **3.5.1 Theoretical Sampling**

Theoretical sampling is associated with the new data to be collected, and explains where it can be found to ensure a theory can be devised and subsequently direct the researcher to gathering further samples (Glaser & Strauss, 1967; Strauss & Corbin, 1998; Douglas, 2003; Strauss & Corbin, 1990, p.176).

Charmaz (2006) argues that theoretical samples are best used when concepts have emerged. Data collection is initiated with professionals, experienced in the phenomena under investigation, which helps them to develop concepts and meaning. Theoretical sampling is used to generate more data to confirm and disprove original categories.

#### **3.5.2 Theoretical Saturation**

Strauss and Corbin (1990, 1998) state that data collection continues until no new concepts, new categories or incidents are generated. In other words, when theoretical saturation is reached with theoretical sampling. The process of data analysis can be

achieved when all categories are saturated (Glaser, 1978, pp. 124–126; Glaser & Strauss, 1967, pp. 61–62, 111–112; Strauss & Corbin, 1990, p.188). In the context of grounded theory, sample size continues to be expanded by the researcher until the data gathered from interviews is found to be repetitive (Glaser & Strauss, 1967; Strauss & Corbin, 1998; Douglas, 2003; Goulding, 2002; Locke, 2001; Jones & Noble, 2007). Thus, the basis of analysis in grounded theory research depends on concepts that emerged during the process of data analysis, meaning that sampling is based on concepts with a verified theoretical significance affecting evolving theory (Bloor & Wood, 2006).

### **3.5.3 Constant Comparison**

Charmez (2006) states that the core element of grounded theory is constant comparison, being a process through which variation in categories is identified by continuously comparing instances of data labelled under a particular category with other instances of data within the same category; this helps to examine whether such categories are appropriate and workable (Urquhart, 2001, 2013). In other words, the constant comparative method is supportive of the theory that is subsequently generated. In addition, memos are an important step, employed between coding and writing the researchers' reflections and annotations of the data (Charmaz, 2012).

### **3.5.4 Memos**

Memos should be dated and linked to places in field notes, case analysis discussion, case summaries, codes and documents, etc. (Charmaz, 2014). According to Glaser (1987) the memo is defined as "... the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding... it can be a sentence, a paragraph

or a few pages... it exhausts the analysts momentary ideation based on data with perhaps a little conceptual elaboration” (pp. 83-84).

Having described the essential features of the five main strategies used in IS, i.e. quantitative and qualitative research, and assessed some of the major criticisms of them; it is now possible to move on to a consideration of the techniques used for data collection in the current research.

### **3.6 Data collection methods**

This section will outline the different data collection methods employed to support qualitative research methods, such as interviews, questionnaires and observations. For example, it may not be possible to obtain participants’ thoughts or perceptions about the adoption of EPS by observing them. The method of data collection must be suited to the nature of the research questions.

#### **3.6.1 Questionnaires**

A questionnaire is defined by Oates as “A set of questions (sometimes called items), assembled in pre-determined order; respondents are asked to answer the questions, thus providing the researcher with data that can analysed and interpreted” (2006, p.219).

Questionnaires are often associated with a survey research strategy and one of the more popular survey methods is the postal questionnaire, which involves sending self-completed questionnaires to the addresses of suitable participants within a particular area (Denscombe, 2003, pp.7-8; Pickard, 2013). Denscombe (2003) also identifies a number of research situations that would lead to the ‘right kind’ of questionnaire survey. One of them is a case in which the investigation requires information from a

large number of respondents within a particular area over a relatively flexible time period, gathering results by testing, posting, collecting questionnaires and then analysing the data (Denscombe, 2003, p.145).

A questionnaire can be designed and evaluated by experts to generate two types of data: factual data (for example, date of birth, number of children, etc.) and opinion (for example, what the participants think about a research problem, an information system, etc.). Although both kinds of question may appear within a single questionnaire, the researcher must also determine the kind of data each question will gather (Oates, 2006, pp.222-226). Questions can also be classified into open questions (open-ended), which allow the participants to decide what kind of answers to give, and closed questions (close-ended), which force the participants to select from multiple-choice answers that are pre-defined (Oates, 2006, pp.222-223).

### **3.6.2 Interview**

Interviews can be classified in two ways: according to their form that is, whether they are structured, semi-structured or unstructured; or according to the method of administration; for example, face to face, telephone and Internet interviews. Denscombe (2003, pp.166-167) illustrates the distinction between structured, semi-structured and unstructured interviews.

In the case of structured interviews, Denscombe (2010) explains, the level of control over the format of questions and answers is similar to that in questionnaires - that is, they include a list of questions conducted face to face in an ordered style with predetermined answer options. An intention to achieve standardisation supports the choice of a structured interview, given that participants receive identical questions and a range of pre-coded answers, meaning the provision of quantitative data that is analysed

relatively easily using any kind of statistical method. Moreover, regarding semi-structured and unstructured interviews, the order of questions is flexible, to give the interviewees the opportunity to speak freely about the investigated issue and therefore enhance discussion and deep insights into the topic.

The unstructured interview allows interviewees to develop their ideas regarding the topic being investigated without a strict format. Denscombe (2003, pp. 8-9) reports that the most popular form of interview is the face to face interview, in which questions are asked and answered by direct contact between the researcher and respondent. The response rate in this form of interview would in fact be arguably higher than that of other types, with candidates carefully selected according to gender, age, and cultural background.

The qualitative approach is used to explore issues, understand phenomena and answer questions in a context-specific setting, a "real world setting where the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2002, p. 39, as cited in Aguirre *et al.*, 2014). It seeks out the why, not the how of the subject, through analysis of unstructured information, such as interview texts, recordings, e-mail messages, notes and feedback forms, pictures and videos; unlike quantitative research, which relies upon numbers or statistics to reach conclusions (Hoepfl, 1997).

The semi-structured interview is the most adequate tool and is appropriate for the purposes of this research; it allows participants to express their opinions, concerns and feelings about factors and barriers that might affect the adoption of EPS. Moreover, the order of questions can vary depending on the nature of the conversation. Additional questions may be needed to explore the research questions. The nature of the questions

and the discussion that follows means that any data collected will be recorded by tape, digitally or noted by hand.

### **3.6.3 Observations**

Gorman and Clayton define observational studies as those that "involve the systematic recording of observable phenomena or behaviour in a natural setting" (2005, p. 40). However, observation is a complex research method, requiring the researcher to play a number of roles, and use a number of techniques to collect data. The most significant distinction for a practitioner-researcher is between participant and non-participant observations. Participant observation has been particularly successful in social sciences, as it seeks to understand the culture and process of groups being investigated in cases where a researcher would normally not be permitted access. Denscombe notes that: "A classic definition of participant observation spells out the crucial characteristic of this approach, and the things which distinguish it from systematic observation." (2003, p. 200). Non-participant observation, by contrast, means that the observer attempts to observe people without interacting.

This kind of data collection method, involving observing or recording a participant's actions may not be suited to the purposes of this research, because the objective of the research questions is to investigate and explore factors and barriers that might affect the adoption of EPS in Libya. It considers how to overcome those barriers, rather than observing the actions or behaviour of participants.

### **3.7 Summary and conclusion**

The aim of this chapter was to provide information concerning quantitative and qualitative research methods, research methods and data collection methods. It suggests



and provides a justification for an appropriate interpretative paradigm, research methodology, and data collection techniques that will be applied within this study.

## 4 The design of pilot study and Empirical research

### 4.1 Introduction

This chapter discusses the main issues pertaining to the design of the pilot and full study. In relation to the context of the current work, it considers all issues and factors discussed and explained previously, to help determine a suitable sample size for the purpose of this research, as explained in section 4.5.1 of the pilot study and 4.5.5 of the full study. The analytical procedure was performed in parallel with data collected during the pilot study stage as illustrated in 4.5.2 and the full study is explained in more detail in chapter 5, in sections 5.4, and chapter 6, in specific 6.2.1 to 6.4. It is based on a Straussian approach, which encompasses three stages of coding, including open, axial and selective. This chapter begins by providing definitions of the term ‘pilot study’ and discussing its processes. It is then followed by sections 4.3 and 4.4, which highlight and provide information related to stakeholders who chosen for the purpose of the research. After the interview questions are reviewed, and based on the results of the pilot study, the researcher amended and enhanced their clarity to cover all the important issues raised when conducting the pilot study as explained in section 4.5.3. Before illustrating the main issues of relevance to the pilot study, it is first necessary to define related concepts, in particular category coding and protocol, as defined by Strauss and Corbin.

*Concepts: Conceptual labels placed on discrete happening, events and other instances of phenomena.*

*Category: A classification of concepts. This classification is discovered when concepts are compared one against another and appear to pertain to a similar*

*phenomenon. Thus, the concepts are grouped together under a higher order, more abstract concept called a category.*

*Coding: The process of analysing data.*

(Strauss & Corbin, 1990, p.61).

*Protocol: This term is used to imply a broader set of procedures and queries than the classic instrument. (Yin, 2011, p. 102)*

## **4.2 Pilot Study Definition**

A pilot study or pre-test gathers preliminary information intended to fit the proposed research instrument (Merriam, 2014; De Vos, 2002, pp. 409–418). It allows essential adjustments to the research instrument in advance of a full-scale inquiry, as well as verifying feasibility and improving quality and efficiency (Jairath *et al.*, 2000; Prescott & Soeken, 1989; Van Teijlingen & Hundley, 2002, p.1). In other words, a pilot study can reveal any shortcomings in design or test procedures proposed in earlier studies so that issues can be addressed before proceeding with a large-scale investigation. A good research strategy requires cautious planning, which can be a benefit of a pilot study (Bryman, 2001, pp.247–248). In this research, the pilot study investigates and explores those factors affecting the adoption of EPS by telecommunication companies in Tripoli-Libya using interviews. These will be subsequently refined as necessary before the full empirical study is conducted.

Having offered a definition of the term ‘pilot study’ it is necessary to explain what does mean the stakeholder and who are they, the following sections 4.3 and 4.4 will highlight and provide the information related to stakeholder who are chosen for the purpose of this research.

### **4.3 What is a stakeholder?**

It is important at this point in this study, to explain the meaning of ‘stakeholder’ in the research context. The Standard Research Institute (SRI) defined stakeholders in 1963 as: “Those groups without whose support the organization would cease to exist”. Freeman (2004) argues that the stakeholders are people who play an important role in the success of an organisation. Sangle (2010) argued that the capability to manage groups of stakeholders is strongly linked to satisfaction with corporate social responsibility. Academic researchers prefer to use Freeman’s (1984) definition; he defines a stakeholder as “Any group or an individual who can affect or is affected by the achievement of the organisation’s objectives”. Friedman (2006) claimed that this definition is more appropriate and balanced than the SRI one. Friedman is supported here as his adoption of the SRI definition in regards to defining a stakeholder. Therefore, it is important in the following section to identify the stakeholders chosen for the purpose of the current research.

### **4.4 Who are the stakeholders?**

As mentioned previously in section 4.3, stakeholders include individuals and groups that affect and are affected by the work of an organisation. In this section, it is necessary to identify the major groups of stakeholders pertinent to this research. Moreover, the common means of differentiating between diverse types of stakeholders is to consider classifying the groups of people who have a relationship with the organisation. According to Friedman’s (2006) definition, the main groups of stakeholders are:

- Customers;
- Employees;
- Local communities;

- Suppliers and distributors; and
- Shareholders.

The researcher identifies the stakeholders for the purpose of this research as follows: customers (Libyan individuals), telecommunication companies (staff and top management), banks (local Libyan and international banks), sellers, the Libyan government and intermediate companies (e.g. Visa, MasterCard and other credit cards). The respondents were drawn from all these stakeholder groups, and every respondent as assigned a different code for the purpose of data analysis, to make it easier for the reader to understand and follow, as shown in the following Table 4.4-1.

Administration of the branches of Bank of Republic (staff)	(RES99)
Customer 1	(RES91)
Customer 2	(RES93)
Customer 3	(RES106)
Customer 4	(RES107)
Customer 5	(RES108)
Customer 6	(RES109)
Customer 7	(RES114)
Customer 8	(RES115)
Customer 9	(RES116)
Department of Information Technology (staff)	(RES296)
Department of Information Technology(staff)	(RES196)
Deputy of Director of Administrative Affairs at the Libya Telecom & Technology Company	(RES111)
Director of Administrative Affairs at the Alamadard Aljadid of Mobile Phones Company	(RES113)
Director of business commercial	(RES92)
Director of Financial Management and Accounting	(RES94)
Director of Human Resources	(RES89)
Director of Information Management at the Ministry of Communications	(RES105)
Director of Information Technology at the Prime Minister's office	(RES102)
Director of Islamic banking, at the Bank of Republic	(RES100)
Director of the Department of Information Technology	(RES95)
Head of central network Unit	(RES90)
Head of Finance Department Administration of the branches of Bank of Republic at the Libya Telecom & Technology Company	(RES112)

Head of Information Technology unit at Libyana Mobile phones company	(RES101)
Head of web service unit	(RES88)
Head of Web Services Department in Commercial Administration at the Libya Telecom & Technology Company	(RES110)
Undersecretary of the Ministry of Communications	(RES104)
Web service (staff)	(RES87)

Table 4.4-1 References for each respondent

#### 4.5 Interview protocols for the pilot and empirical study

In line with the research design human interaction was crucial to data collection; thus, the researcher had to consider research ethics. The researcher applied the following guidelines prior to initiating the pilot study:

- |  |
|--|
| <ul style="list-style-type: none"> <li>• Ethics approval was obtained from the Faculty’s Human Research Ethics Committee (see Appendix A).</li> <li>• The time, date and place of the interviews were arranged with the participants.</li> <li>• The respondents were shown an official letter obtained from the university declaring that data to be collected was for academic purposes.</li> <li>• The aims of the research were conveyed to the respondents.</li> <li>• A brief introduction about the research was given to the respondents</li> <li>• A digital recorder was used with the permission of respondents.</li> <li>• A set of questions was used during the interviews (see Appendix C for organisations and Appendix D for customer interviews).</li> <li>• The Arabic voice dialogue was converted into Arabic text and then translated into English.</li> <li>• The transcription and translation processes involved two professionals (Arabic and English native speakers) who verified the meaning of both versions.</li> </ul> |
|--|

Table 4.5-1 Guidelines prior to starting the pilot study

The next section will describe the pilot study and what was expected to be derived from it.

##### 4.5.1 Sample size of the pilot study and its process

An important factor to take into account before starting this research was to choose a sample whose members could respond to the interview questions and who had experience of EPS. This meant it was necessary to include individuals and senior managers from different departments within telecommunication companies, government

and banks. In an attempt to investigate and explore the factors affecting the adoption of EPS in Libya, this research, at the MPhil stage, utilised a pilot study across telecommunication companies in Libya in September 2010. The researcher interviewed seven people (face-to-face) in their offices during the pilot process. Some members of sample worked for different companies within the communications sector. Those that were employed by the same company worked in different departments. Three out of seven participants were customers of the telecommunications service. The remaining four were senior managers employed by national Libyan mobile operator companies. These were the Director of Administrative Affairs (The Alamar Aljadid of Mobile Phones Company); the Head of the Finance Department; the Head of the Web Services Department in Commercial Administration; the Deputy of Director of Administrative Affairs of the Libya Telecom & Technology Company.

The sample was suitable for this research for two reasons. First, the study explores different attitudes from both the organisational and customers' perspectives, while at the same time addressing the effects of economic, socio-organisational, technical, and political factors and the interrelationship between them and their mutual impact; as well as the influences that may lead to the adoption of EPS in Libya. Secondly, Libya is in the process of developing and enhancing its telecommunications sector, which in turn will affect its national economic development. These issues provide impetus to analyse, explore, and investigate the socio-organisational, technical, political, and economic factors affecting the adoption of EPS in Libya, and importantly the relationship between these factors. By doing so, the successful adoption of EPS will direct decision makers in Libya to facilitate EPS adoption.

The process of data analysis in pilot and empirical studies is guided by grounded theory techniques, and the development of codes, as explained and discussed in chapter 5. The following section highlights the pilot study analysis and the relationship between the factors emerging from the pilot study, and those found in the literature.

#### **4.5.2 Pilot study analysis**

According to Batista Nunez *et al.*, (2010), the pilot stage of a study should be considered in the research design, specifically when collecting information and creating categories that reflect the context to support the further development of theory building. The pilot study should inform the research processes, primarily focusing on the phenomenon to be addressed. This means, open coding and axial coding in the pilot study should result in emergent categories that explain the context, in a manner consistent with the data analysis method, as explained in section 5.45.4. On the other hand, open coding determined the main procedures and categories that support the understanding and development of integrated theoretical explanations for the phenomenon being studied. In this case, the pilot study also facilitated the identification of initial categories for use in the design of the interview scripts for the next stage of the empirical study (see section 5.4.2).

As mentioned in section 4.2, the aim of the pilot study is primarily to test and refine the research questions. However, the data analysis procedures were also piloted, allowing the researcher to identify and describe the codes emerging from the transcriptions. The process of data analysis is guided by grounded theory techniques, and the development of codes as explained and discussed in chapter 5.



During the development of grounded theory procedures and techniques, as explained in chapter six, it became noticeable that there were socio-organisational, political, technical, and economic factors affected EPS adoption in Libya. It is useful to analyse the pilot study data in relation to the literature, to review these considerations. Customers' attitudes toward the adoption of EPS influence economic factors and their sub-categories via other variables. For example, age-grading especially for young people, is influenced by the amount of knowledge they obtain (Al-Mabrouk & Soar, 2009). Moreover, this factor (age-grading) is indirectly influenced by economic factors, in response to standard of living and internet penetration, and also in terms of the quality and availability of employment, income, quality of education level, cost of goods, economic and political stability, etc. (Baptista, 2000; Mahadevan & Suardi, 2012). Furthermore, customer awareness of the use of EPS is affected by customer's degree of experience using it (Amedu, 2005; Ayo 2001; Central Bank of Nigeria Website, 2010; Wellenius *et al.*, 2004; Al-Mabrouk & Soar, 2009). Resistance to change amongst staff may arise because of lack of experience, and have a significant influence altering top management attitudes toward telecommunications companies. Resistance to change could also influence economic factors (Ginige *et al.*, 2001).

Staff will express different views and opinions about EPS, and it is recognised that this may affect other factors, such as, cooperation between the government, banks and the customer, which in turn may be influenced by economic factors. This means that cooperation will not occur if institutions have no experience or awareness of EPS (Simpson, 2004; Mann, 2004; Rosen, 2001; Zuhlunda *et al.*, 2011).

Research has shown that in the absence of factors related to social change, companies will not offer EPS as the only means of payment on their websites, as customers are concerned with security (Abukhzam & Lee, 2010; O'Mahony *et al.*, 2002; Swaminathan *et al.*, 1999; Rose, 1999; Swatman, 1997; Havinga *et al.*, 1996). In addition, customers who refuse to utilise such a system or accept its role often do so because of social and economic factors related to acceptability. Furthermore, customer attitude (as a category) (see chapter six for data analysis) is affected by the existence of convenience and ease of use when adopting EPS, which is in turn directly affected by economic factors (Davis, 1989; Djamasbi *et al.*, 2010; Ullah *et al.*, 2013; Abukhzam & Lee, 2010; Wright, 2002). Table 4.5-2 explains the respondents' codes.

<p>P1: The Head of Web Services Department in Commercial Administration at the Libya Telecom &amp; Technology Company.  P2: The Deputy of Director of Administrative Affairs at the Libya Telecom &amp; Technology Company  P3: The Head of Finance Department at the Libya Telecom &amp; Technology Company  P4: The Director of Administrative Affairs at the Alamadard Aljadid of Mobile Phones Company  P5: A customer  P6: A Customer  P7: A Customer</p>
--

Table 4.5-2 Respondents' codes (pilot study results)

Table 4.5-3 (below) summarises factors that emerged from the pilot study, and where concepts were systematically linked by an on-going analysis of the codes with those in the literature review.

Literature factors		Pilot study' finding	
1) Economic factors	Source	Participants' response	Source (Participants number )
Perceived benefits	(Kurnia & Johnston, 2001; Sangjae, 2006; Agarwal et al., 2009)	Perceived benefits from adopting the EPS	(P2, P4, P5, P6, and P7)
Cooperation with External Entities	(Simpson, 2004; Mann, 2004; Rosen, 2001; Zuhunda et al., 2011)	The cooperation must be between commercial banks, the state, telecommunication companies and companies who are responsible for delivery the systems.	(P1, P2, P3, P5, P7)
Cost of Internet	(Baptista, 2000; SMEDAN, 2009)	Internet access prices	(P1, P2, P3, P4, P5, P6, P7)
Mutuality of Stakeholder Benefits	(Oh & Kurnia, 2006; Shalaby, 2006)	Any application across the internet will contribute to increase the number of customers. It will contribute to the increase of corporate income by increasing the number of customers; the micro-projects support the major ones	(P5, P6, P7)
Emerged from pilot study	Standard of Living		(P6)

<b>2) Socio-organisational Factors</b>	<b>Source</b>	<b>Participants' responses</b>	<b>Source (Participants number )</b>
Resistance to Change	(Ginige et al., 2001; Zuhunda et al., 2011)	Change management, identifying the reasons for resistance to change and the degree of resistance	(P1, P6)
Awareness of EPS	(Amedu, 2005; Ayo 2001; Central Bank of Nigeria Website, 2010; Wellenius et al., 2004; Al-Mabrouk & Soar, 2009)	Spread awareness among people; lack of a plan for the present situation; awareness about Islamic transaction process	(P2, P5, P6, P7)
Demography	(Al-Mabrouk & Soar, 2009)	Participants' practices and international experience; knowledge and background about EPS; understanding the new technology; education level	(P1 P2, P3, P4, P5, P6, P7)
<b>3) Political Factors</b>	<b>Source</b>	<b>Participants' responses</b>	<b>Source (Participants number )</b>
Legal framework and laws	(Alev & Vincent, 2004; Adam, 2008; Azab et al., 2009)	Lack of a legal framework and laws; lack of creating laws and regulations	(P1, P2, P7)
Political power	(Vatiero, 2009; Ihugba et al. 2013; Wellenius, 2004)	Lack of political support	(P1, P2, P3, P4, P5, P6)

<b>4)Technical and System Quality Factors</b>	<b>Source</b>	<b>Participants' responses</b>	<b>Source (Participants number )</b>
Security	(O'Mahony et al., 2002; Havinga et al., 1996; Swatman, 1997; Abukhzam & Lee, 2010)	Lack of security; fraud from hackers	(P1, P2, P3, P4)
Trust	(Abukhzam, 2010, p.2; Swaminathan et al., 1999; Rose, 1999)	Lack of trust; afraid of the EPS	(P1, P4)
Reliability of the EPS	(Turban, 2002; Hunaiti et al., 2009)	Lack reliability of EPS; companies are still using cash payments	(P1, P2, P3, P4, P5, P6)
Acceptability	(Kousaridas et al., 2008; Amedu, 2005; Worthington et al, 1995)	Lack of online services, EPS is not adopted in Libya; availability is one of the factors that assist in accepting EPS; post-coding does exist in Libya, lack of technical infrastructure and system quality issues	(P1, P3, P4, P6, P7).
Ease of Use	(Davis 1989; Djamasbi et al., 2010; Abukhzam & Lee, 2010)	Ease of handling this kind of service at any time, which provides service to all customers at any time ; the electronic payment system will facilitate the payment process without using cash payment, and simply using this service at any time and or , any place	(P2, P3, P7)
Accessibility	(Coopers & Zmud, 1990; Ullah et al., 2013; Abukhzam & Lee, 2010; Libyan Economic Forum, 2008)	Lack of communication between a service companies; availability the	(P5)

		service	
Convenience	(Wright, 2002; Cheng et al., 2011; Fung et al., 2014)	Bank of Commerce and Development is one of the banks which gives the Almadar's Mobile Phone Company staff the use of pre-paid cards by phone, that means they can use this service at anytime and anywhere, Using the electronic payment system will allow the customer to buy online at any time with confidence	(P2, P3, P5, P6)

Table 4.5-3 Pilot study findings

The researcher reviewed the underlined words from the respondents' excerpts specifically to refer to certain concepts. For example, the respondents referred to the steps the company would consider taking to ensure acceptance of EPS. For example,

*“Telecommunication companies must follow the Ministry of Communications’ guideline, which means that there should be a link between enacting laws and regulating the system.” (RES110, 20+).*

Political support was extracted as a code for the above concept, as a result the security code taken from the sixth respondent's response as follows.

*“At the moment, in spite of problems there are new modern methods of protection available; it is possible to have this system with greater safety and security.” (RES109, 40+).*

Throughout this process, data was broken down and codes assigned. The researcher then grouped these into categories, as shown in chapter five, according to their properties and dimensions. For example, each category has many properties; i.e. under the category ‘customers’ attitudes’, experience and knowledge are included as codes, each of which can be further broken down into different dimensions. Meanwhile, the dimension of experience might be represented as people with experience relating to the use of EPS and its application. For example:

*I have bought tickets online from international airlines using my Visa card.*

As mentioned in chapter six, analysis of the collected data covers every subcategory (codes) linked to other categories through the paradigm model in a set of relationships denoting casual conditions, phenomena, contexts, intervening conditions, action/interactions and consequences, through the frame of generic relationships. The final step in an analysis involves creating a core category by implementing a paradigm model and validating relationships with literature.

The following section provides an overview and justification for the full study the light of the pilot study findings.

#### **4.5.3 Refining the interview questions**

After the interview questions had been reviewed based on the outcomes of the pilot study, the researcher amended and enhanced their clarity to cover new factors (See appendix H and I). These new factors were standard of living (see Q8 in appendix C and D), the current political situation in Libya (see Q13 in appendix C and D) and stakeholders (see Q10 in appendix C and D), as shown by the following question.

*Q8) How can the adoption of an E-payment system within telecommunications companies affect the standard of living in terms of the quality and availability of employment, income, quality of education, cost of goods, economic and political stability and others? Please explain.*

*Q10) Explain the role of:*

*A) Cooperation among stakeholders (customers (Libyan individuals), telecommunication companies (staff and top management), banks (local Libyan and international banks), sellers, the Libyan government and intermediate companies (e.g., Visa, MasterCard and other credit cards) in the case of an E-payment system adopted in Libya.*

*B) Who is/are the stakeholder/s expected to receive benefits from the adoption of an electronic payment system in Libya?*

*Q13) In your opinion, how does the political unrest in Libya since February 2011 affect the adoption of an electronic payment system in terms of political, social, economic and technical factors?*

Once the interview questions have been duly amended a comprehensive review of the research was undertaken before conducting an empirical study. Pilot testing of the interview questions is a significant procedure and the participants were informed of its purpose and importance. Pilot testing also serves to ensure the resulting data is fit for analysis. Finally, the researcher made some further modifications to the interview questions before they were formally distributed to the research participants for the empirical study. The research sample for the empirical study was composed of customers and staff employed by the telecommunications companies, banks and the



Libyan Government, based in Tripoli. The researcher followed various important procedures prior to starting the interviews, as shown in section 4.5.

#### 4.5.4 Justification of interview research questions

When preparing to conduct in depth interviews to gather rich information to strengthen the research findings, it was necessary for the researcher to justify the proposed interview questions. The following tables explain the reasons for the interview questions in reference to the research questions, and the answers expected from the respondents:

- **Customer Questions:**

Customer Representatives Questions	Interview prompt	Related research questions
1) What does the term E-payment system mean to you?	To reveal the different attitude of customers about knowledge among individuals in regards to use EPS.	Part of Sub- research question RQ 1.
2) Have you had the opportunity to use an E-payment system? If “yes,” please explain, how and where? If no, please explain why not?	To reveal the different attitude of customers about the experience among individuals in regards to use EPS with knowledge of how to use their credit or debit cards for online transactions.	Part of Sub- research question RQ 2.
3) In your opinion, what can telecommunications companies in Libya do to encourage their customers to use an E-payment system service? Please explain.	To reveal the different attitude of customers about what the steps and procedures that should do by telecommunication companies to encourage the individuals to use EPS	Part of Sub- research question RQ 3.
4) In your opinion, what methods must be taken into account by telecommunications companies/banks/governments when they are dealing with consumers who prefer to use a cash payment system? Please explain.	To reveal the different attitude of customers what the procedures and methods that should do by telecommunication companies to let the individuals know about the benefits of the use EPS rather than use cash payment.	Part of Sub- research question RQ 3.
5) How can Libya’s social and	To reveal the different attitude of	Part of Sub- research

culture affect the adoption of an E-payment system?	customers about the social influence on of the use of EPS and the degree to which show the importance of the use of individuals or the government system of EPS.	question RQ 3.
6) What features of an E-payment system are important to you? Please explain.	To reveal the different attitude of customers about what are the significant characteristics of using EPS.	Main research question, and part of Sub-research question RQ1.
7) In your opinion, how can telecommunications companies and their customers benefit from adopting an E-payment system? Please explain.	To reveal the different attitude of customers about to find out what are the individuals' views and opinions that may effect on the management of the companies in regards how to benefit that obtained from the adoption of this service to prior to the adoption of electronic payment system in order to clear to them about how to benefit from the adoption of this service.	Main research question, and Sub-research question RQ 3.
8) How can the adoption of an E-payment system by telecommunication companies affect standards of living in terms of the quality and availability of employment, income, quality of education, cost of goods, economic and political stability and others? Please explain.	To reveal the different attitude of customers about how the standard living as a factor can play a role on effecting on the use EPS from different attitude of customers.	Sub- research question RQ 3.
9) How will the E-payment system be accepted in the future? Please explain.	To reveal the different attitude of customers about the methods or procedures that lead to the adoption of the EPS	Sub- research question RQ 2.

<p>10) Explain the role of:</p> <p>A) Cooperation between stakeholders and customers (Libyan individuals), telecommunication companies (staff and top management), banks (local Libyan and international banks), sellers, the Libyan government and intermediate companies (e.g. Visa, MasterCard and other credit cards) in the case of an E-payment system adopted in Libya.</p> <p>B) Who is/are the stakeholder/s expected to benefit from the adoption of an electronic payment system in Libya?</p>	<p>A) To reveal the different attitude of customers about how the stakeholder working together for their common/mutual benefit in order to work in competition for benefits of the system</p> <p>B) To reveal the different attitude of customers about the types of stakeholders who have a relationship with the organisation and getting benefits from adoption of EPS.</p>	<p>Part of Sub- research question RQ 4.</p> <p>Part of sub-research question RQ1.</p>
<p>11) Do you consider the prices for the use of internet access affect the adoption of an E-payment system? Please explain.</p>	<p>To reveal the different attitudes of customers about in regards to the impact of Internet access, in which reflect its affect to adopt EPS.</p>	<p>Sub- research question RQ 3.</p>
<p>12) How can there be political support for legislation and policies for the adoption of an electronic payment system?</p>	<p>To reveal different attitudes of customers about the availability of government support for organisations in order to adopt the required technologies in terms of the impact of government support. In addition, how the current situation of the legislation and policies can be able to support adoption of EPS.</p>	<p>Sub- research question RQ 2.</p>
<p>13) In your opinion, how does political unrest in Libya since February 2011 affect the adoption of an electronic payment system in terms of political, social, economic and technical factors?</p>	<p>To reveal different attitudes of customers about how the revolution of 17th February had impacted on the individuals' lives in general, and more specifically on the overall security of the online payment process.</p>	<p>Sub- research question RQ 4.</p>
<p>14) In your opinion, do you think that when you buy</p>	<p>To reveal different attitudes of customers about the most</p>	<p>Sub- research</p>

products online and pay using an electronic payment system, it is safe and secure in the context of Libya? Please explain	important things that must be taken into consideration when dealing with electronic payments in terms of security and its concerns.	question RQ 3.
15) In your opinion, what are the most significant factors affecting the adoption of an E-payment system in Libya?	To reveal different attitudes what is/are the most important factors that have an effect on adoption of EPS in Libyan context.	Sub- research question RQ 4
16) In your opinion, according to the culture of E-payment systems, how can the Libyan people identify the barriers to the adoption of an E-payment system?	To reveal different attitudes of customers about the level of awareness among Libyan individuals which guide them to consider the obstacles to adoption of EPS.	Main research question, and part of Sub- research question RQ 2.
17) How can the adoption of an E-payment system by telecommunications companies contribute to economic growth in Libya?	To reveal different attitudes of customers about how far the EPS can support and contribute to economic growth in Libya in regards of its benefits and services that will obtain.	Sub- research question RQ 4
18) Do you have any further comments regarding the adoption of an electronic payment system in Libya?	To reveal different attitudes of customers about if they have any comments that need to be concerned.	Main research question and its sub-research questions.

Table 4.5-4 Justification of interview customer's research questions

- **Organisational Questions:**

<b>Organisational Representatives Questions</b>	<b>Interview prompt</b>	<b>Related to research questions</b>
1) What does the term E-payment system mean to you?	To reveal the different attitudes of organisational respondents regarding knowledge and the use of EPS.	Sub- research question RQ 1.
2) Have you had the chance to use it? If “yes,” please explain, how and where?  If no, please explain why not?	To reveal the different attitude of organisational respondents about experience among individuals in regard to use of EPS and knowledge of how to use their credit or debit cards for online transactions.	Part of Sub- research question RQ 4.
3) In your opinion, what can the	To reveal the different attitudes	Main research

telecommunications companies/banks/governments in Libya do to encourage the use of an E-payment system service? Please explain.	of organisational respondents about what the steps and procedures they think telecommunication companies should follow to encourage the individuals to use EPS.	question, and Sub-research question RQ 3.
4) In your opinion, how can management within telecommunication companies / banks or government influence their staff toward adopting an E-payment system?	To reveal the different attitudes of organisational respondents regarding what the procedures and methods the management of telecommunication companies should apply to influence staff toward the adoption of EPS.	Sub- research question RQ 3.
5) What features of an E-payment system are important to you? Please explain.	To reveal the different assessment of organisational respondents about the significant characteristics informing use.	Main research question, and part of Sub- research question RQ1.
6) In your opinion, what kind of methods must be taken into account by telecommunications companies/banks / government when dealing with consumers who prefer to use a cash payment system? Please explain.	To reveal the different attitudes of organisational respondents about what procedures and methods should be pursued by the management of telecommunications companies / banks / government to let individuals know about the benefits of using EPS rather than cash payment.	Main research question, and part of Sub- research question RQ 3
7) In your opinion, what are the factors that could assist the management of telecommunications companies / banks / government to adopt an electronic payment system? Please explain.	To reveal the different attitudes of organisational respondents about what are factors can move the management at telecommunications companies / banks / government, toward adoption of EPS.	Main research question, and part of Sub- research question RQ 4.
8) How can the adoption of an E-payment system by telecommunications companies / banks / government affect the standard of living in terms of	To reveal the different attitudes of organisational respondents about how the standard of living can play a role as a factor effecting the use EPS, according to the different attitudes of	Sub- research question RQ 3.

quality and availability of employment, income, quality of education, cost of goods, economic and political stability and others? Please explain?	customers.	
9) What steps can the company consider to ensure the E-payment system is accepted?	To reveal the different attitudes of organisational respondents about the methods or steps that ensure the adoption of EPS is accepted.	Main research question, and sub-research question RQ 4.
10) Explain the role of:  1) Cooperation among stakeholders in the case of an E-payment system adopted in Libya.  2) Who is/are the stakeholder/s that expected to receive benefits from the adoption of an electronic payment system in Libya?	To reveal the different attitudes of organisational respondents about how the stakeholders work together for their common/mutual benefit, in order to work in competition to benefit the system.  To reveal the different attitude of organisational respondents about the types of stakeholders who have a relationship with the organisation and attain benefits from adoption of EPS.	Sub- research question RQ 4.  Part of sub-research question RQ1.
11) How does the cost of Internet access affect E-payment system adoption in Libya? Please explain?	To reveal the different attitudes of organisational respondents in regard to the impact of Internet access, which reflects it's affect to EPS adoption.	Sub- research question RQ 3.
12) Explain the role of the government in the adoption of an electronic payment system process?	To reveal different attitudes from organisational respondents about the role of the government in implementing required technologies in terms of the impact of government support.	Sub- research question RQ 3.
13) In your opinion, how does political unrest in Libya since February 2011 affect the adoption of an electronic	To reveal the different attitudes of organisational respondents about how the revolution of 17th February impacted on individuals'	Sub- research questions RQ 3 and RQ 4.

payment system in terms of political, social, economic and technical factors?	lives in general, and more specifically on the overall security of the online payment process.	
14) How can government support become beneficial to telecommunications companies / banks for the adoption of an electronic payment system?	To reveal different attitudes held by organisational respondents regarding the methods used by the government to offer beneficial support for telecommunications companies / banks in moving toward the adoption of EPS.	Sub- research question RQ 3
15) In your opinion, do you think that when telecommunications companies buy their products online and pay using electronic payments, it is safe and secure in the context of Libya? Please explain.	To reveal different attitudes among organisational respondents about the most important things to consider when dealing with electronic payments in terms of security and related concerns.	Sub- research question RQ 3.
16) In your opinion, what are the most significant factors that affect the adoption of an E-payment system by telecommunication companies?	To reveal the different attitudes of organisational respondents about what is/are the most important factors that have an effect on the adoption of EPS in the Libyan context.	Main research question, and Sub research question RQ 4.
17) In your opinion, according to the culture of an E-payment system, how can telecommunications staff / banks / government consider the barriers to adoption of an E-payment system?	To reveal the different attitudes of organisational respondents about the level of awareness among Libyan individuals that guided them to consider the obstacles to adoption of EPS.	Sub- research question RQ 3.
18) How can the adoption of an E-payment system within telecommunication companies enable Libyan people to take more control of their online transactions, and how can the	To reveal different attitudes of organisational respondents regarding how to control the online payment process when using debit cards or credit cards, since this is associated with their	Sub- research question RQ 3, and RQ 4.

adoption of an E-payment system within telecommunication companies contribute to economic growth in Libya?	ability to regularly manage accounts, and exert greater control via the Internet. In addition, to reveal the different attitudes of organisational respondents regarding how far EPS can support and contribute to economic growth in Libya, conveying its benefits and services.	
19) Do you have any further comments regarding the adoption of an electronic payment system in Libya?	To reveal the different attitudes of organisational respondents regarding any comments with which they need to be concerned.	Main research question and sub research questions.

Table 4.5-5 Justification of interview organisational research questions

Having explained and justified the proposed interview questions. The following section will highlight the sample size for the full study, and will be followed by a justification, helping the researcher to determine a suitable sample size for the purposes of this research.

#### 4.5.5 Sample size for the full study

The main key to grounded theory is to generate enough data for codes pertaining to the specified phenomenon to emerge (Glaser & Strauss, 1967; Strauss & Corbin, 1998). It is crucial to acquire a suitable sample size to create a sufficient data set (Auerbach & Silverstein, 2003, as cited in Milutinović and Nikolić, 2014). In this research, the researcher took into account protocols to be followed to ensure a sufficient number of participants were interviewed. Clear concepts, codes and categories assisted the researcher to explore factors affecting the adoption of an E-payment system in the telecommunications sector in terms of political, social, technical and economic influences.



The question of what constitutes a suitable sample size for this research was answered by the use of the notion, “theoretical saturation” (Glaser and Strauss, 1967; Strauss and Corbin, 1998). Here the researcher continued interviewing participants, thereby increasing the sample size, until no new concepts emerged (Douglas, 2003; Goulding, 2002; Locke, 2001). Some authors, such as, Glaser and Strauss (1967), and Strauss and Corbin (1998) claimed there are no set number of interviews routinely required to achieve theoretical saturation. Morse (2000) and Sobal (2001) argue that sample size depends on the research question. Thus, Strauss and Corbin suggested narrowing the focus of the research questions at the outset, or after three or four interviews (1998). In addition, the initial few interviews can be used to direct one to the core of the phenomena. The researcher can therefore reduce the number of interviews by narrowing the focus (Kwortnik, 2003, Strauss & Corbin, 1998). Morse (2000) claims that another factor can identify sample size, namely, the experience or knowledge of the researcher. In other words, researchers with more experience and stronger interviewing skills will require fewer participants. This is because participants can be more successfully encouraged to share the requisite data (Morse, 2000; Strauss & Corbin, 1998). Typically, experienced researchers are able readily to encourage participants by generating a conversational atmosphere during an interview (Strauss & Corbin, 1998).

Some studies suggest factors to consider when determining a suitable sample size. For example, Patton (2002), Schensul *et al.*, (1999), LeCompte and Schensul (1999), Bernard (1995), Morse (1995), Miles and Huberman (1994). Guest *et al.*, (2006, p.61) point to seven studies that provide guiding principles when selecting actual sample sizes. Bernard (2000, p.178) feels that thirty to sixty interviews is an acceptable sample size for most ethnographic studies. Bertaux (1981, as cited in Van Esch, Patrick & Van

Esch, Linda, 2013) argues that fifteen participants are sufficient for phenomenological studies, thirty to fifty participants for grounded theory and ethnographic studies and one hundred to two hundred participants for studies involving qualitative ethnology, are suitable sample sizes. Creswell (2013) argued that twenty to thirty participants are suitable for a grounded theory study. Whereas, Kuzel (1992, p. 41) claimed that twelve to twenty interviewees are sufficient for data sources, and six to eight for a homogeneous sample. Romney *et al.*, (1986) and Graves *et al.*, (2014) recommend samples sizes of sixty to one hundred and twenty participants for correlative analyses in quantitative studies. Following a literature review of guidelines for qualitative research in the field of health science, Guest *et al.*, (2006) reported that after analysing thirty interviews responses, 80 (73%) out of a total 109 codes were identified after the transcripts of the first six participant's responses were analysed. A further twenty codes emerged in the next six interviews. The remainder of the codes emerged from the next six transcripts. Therefore, clearly, all full codes emerged in the first twelve interviews (see Figure 4.5-1).

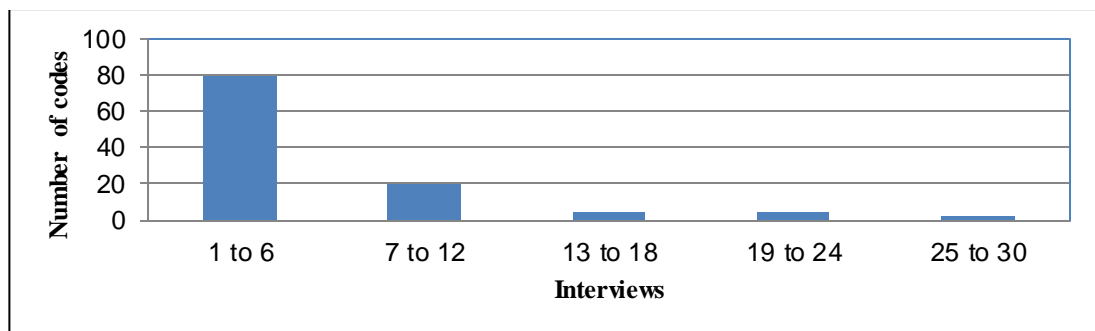


Figure 4.5-1 Code creation over data analysis

(Source: Guest *et al.*, 2006)

The factors that identify sample size, therefore, are based on the concepts of theoretical saturation (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Ryan and Bernard (2004) demonstrated that saturation point is reached by understanding the research questions,

the researcher's experience and the number of sets of data (transcripts) reviewed. In contrast, Guest *et al.*, (2006) (see above) suggested that a sample of six interviews could provide sufficient codes to assist the development of theory and elicit useful interpretations. Therefore, during the empirical study, the researcher will consider all the issues and factors discussed and explained during this section, to help him determine a suitable sample size for the purpose of this research.

#### **4.6 Summary and conclusion**

This chapter discussed the main issues associated with the design of the pilot study and the full study. It offered definitions for the term 'pilot study' and discussed the processes involved. It was then followed by sections 4.3 and 4.4, which highlighted the information related to stakeholders chosen for the purpose of this research. Justification for selecting the sample size was provided based on all the issues and factors that helped the researcher to determine a suitable sample size for the research, as explained in section 4.5.1 in the pilot study and 4.5.5 in the full study. After the interviews, the research questions were reviewed based on the results of the pilot study, and the researcher amended and enhanced their clarity to cover all the factors explained in section 4.5.3. Furthermore, a data analysis was conducted by the researcher in parallel with data collection during the pilot study (section 4.5.2), and based on the same grounded theory techniques in a specific Straussian approach, as explained in more details in chapter 5. Finally, the chapter concluded by offering a justification of the interview questions.

## **5 Data analysis**

### **5.1 Introduction**

This chapter provides a thorough overview of the analytical procedures applied to the data collected in response to the research questions. This chapter has discussed the grounded theory particularly Straussian approach in depth. The researcher discussed and justified the manual analysis in section 5.3. Moreover, section 5.4 presents the explanation regarding the main differences and similarities between a Glaserian approach and a Straussian approach as it explained in more details in section 3.4.6. It was then appropriate to consider how the Straussian approach was chosen to fulfil the purpose of this research. The chapter ends by discussing and highlighting the features and procedures used by the Straussian approach by supporting with examples from the participants' answers. By the end of this chapter, a clear understanding will be provided of the theory and procedures applied and the proposed approach.

### **5.2 Analysis procedures**

The analysis initially involved analysing the transcription, which is in Arabic, and then moved on to translating the concepts that emerged into English, as is explained in this chapter.

The second step in the analysis process addressed the collected data, which was examined line by line, sentence by sentence, and incident by incident, to identify and conceptualise important underlying factors and events contained in the data (Strauss & Corbin, 1998). The researcher considered that respondents would use phrases and words that highlighted an issue or event of interest or importance to the research. This event or factor is sometimes mentioned again in reference to the respondents' responses to similar words. This process is called coding, and the short phrases used to describe

important issues are called a code (Strauss & Corbin, 1998). Strauss and Corbin (1998, pp. 65-68) explained that coding is recommended when analysing data word by word, and that this requires “coding the meaning found in words or groups of words”.

Examples are given below to identify the words regarded as essential to the investigation, and the selection of words in the coding process, to address the research questions by performing appropriate coding analysis for qualitative research (Miles & Huberman 1994). In other words, the words in the transcripts judged to be important were highlighted and given to researchers so that they could continue with subsequent interviews based on techniques of theoretical saturation.

After the complete set of study data was collected, the researcher initiated the process of coding and categorising the data, to reflect on the different issues represented, as explained in section 5.4.1. The Straussian grounded theory approach applied a three stage coding procedure: open coding, axial coding and selective coding (as will be discussed in 5.4.1, 5.4.2, and 5.4.3). The results for the coding at each stage guide the subsequent stage (Jones & Alony, 2011, p.9).

The following section 5.3 justifies the decision to perform a manual analysis of the collected data in the current research, instead of using a qualitative data analysis software tool.

### **5.3 Manual justification analysis**

Marshall *et al.*, (2013), and Lee and Fielding (1996) found that the median sample size in qualitative studies is about 40; thus, enabling the use of software where ‘representativeness’, in a statistical sense, is not considered a critical component of the sampling quality. In this research, 28 interviewees holding different positions were

interviewed. These included individuals who were both consumers and organisational personnel (bank, government, and telecommunications companies).

According to Nissan and Schmidt (1995) as cited in a study conducted by Hunter *et al.*, (2005), words have multiple meanings when collocated with other words. Some words, phrases and lines of sentences in a text require analysis, therefore making it difficult to attach meaning to single words. Coffey and Atkinson (1996, as cited in Halkier and Jensen, 2011) stressed that there are no software packages that can accomplish an analysis on their own, and that there is ‘... no great conceptual advance over manual data sorting’ (p.64). The procedure for using a software package includes coding the text; however, the process of computer coding does not differ considerably from the manual method. However, the coding process differs from analysis, and therefore the data is considered to be best analysed manually.

Scott *et al.*, (2002) stated that data can be analysed using software packages, but it was felt that the approach filters the data, leading the researcher to fail to appreciate some of its wealth. This view is supported in Bazeley and Jackson (2013), who claimed that only prescribed analysis can be undertaken using computer software. They also agreed that manual coding increases the researcher’s familiarity with their data (Scott *et al.*, 2002). This is a significant consideration for this research, as the researcher has been able to identify and understand the issues and factors expressed in different forms by reading each of the respondents’ responses individually, applying the constant comparison technique.

In the manual analysis, an important factor increasing the difficulty of using a computer package, was the way in which issues or events are expressed in words, as various types

of speech act as factors affecting understanding. These include adages, clichés, colloquialisms, figures of speech, and various terminology such as institutional terms and acronyms (Hunter *et al.*, 2005, p.64). As suggested by Blismas and Dainty (2003, as cited in Hunterl *et al.*, 2011), coding and analysis require intensive input by the researcher regardless of the mode used to achieve them. However, the use of computer software allows limitless manipulation of data without altering the original data set; thus, the capabilities to handle data increase the rate at which data can be viewed and retrieved at any time. This provides considerable advantage over the manual method. One of the restrictions placed on the use of computer software packages for encoding text documents was that there is only small proportion of data is visible at any single moment, which makes it very difficult to conduct data scanning.

The researcher intended to use NVIVO as a computer software package to analyse the interviews, but was unable to do so as the interviews in Libya were conducted in Arabic, which NVIVO does not support. There was no justification for expending time and effort to translate twenty eight interviews from Arabic to English. In addition, literal translations would not provide precisely the same meaning. Consequently, the researcher analysed the data collected in Arabic manually to overcome these problems / difficulties, and to insure consistency.

Having discussed and justified the manual analysis, the following section 5.4, discussed the Straussian Approach Procedures used in the current research for data analysis purposes.

## **5.4 Straussian approach procedures**

Having reviewed the discussion regarding the main differences and similarities between a Glaserian approach and a Straussian approach, as explained in section 3.4.6, it is appropriate to consider how the Straussian approach might fulfil the purpose of this research. Importantly, this approach is open to application of all kinds of literature before the research study is begun, in contrast with the Glaserian approach, which requires the gathering of data from the beginning of the study period, without any theory in mind (Locke, 1996). Furthermore, the Glaserian should follow the principle that theory emerges from a neutral question, whilst Straussian technique utilise a structured question, placing greater emphasis on establishing a theory (Strauss and Corbin, 1998).

Interestingly, in relation to subjectivity, it should be anticipated that each person would hold different views and experiences concerning those factors that potentially affect the adoption of EPS in Libya. The basic meaning of grounded theory is the reading and re-reading of textual data, with the aim of extracting concepts and establishing any interrelationships within categories. Moreover, the ability to understand variables and their relationships will contribute to the sensitivity of the theory; a number of things, including reading from literature and the use of established techniques to improve sensitivity, influence this (Strauss & Corbin, 1990; Charmaz, 2006; Strauss, 1987; Glaser, 1992). Markedly, the features and procedures used by the Straussian approach will be highlighted in the following sections.

### **5.4.1 Open coding process**

The first step in theory building is conceptualising. It is an abstract means by which to represent of an event, incident, or action that a researcher identifies as being important



or significant in the data. At this stage, the transcript (raw data) has been broken down, examined and coded by the researcher. The open coding process is applied to examine the data without restraint in its scope and without the use of any filters. Thus, all data is considered, allowing the researcher to concentrate on, and conduct a deeper examination of respondents' responses, that may lead to uncovering data of interest. Strauss and Corbin (1998, p.103) stated that a concept is a phenomenon that has been labelled. The researcher becomes familiarised with the data through open coding and is then made aware of all the issues related to interpreting the respondent's responses by applying codes to the text (i.e. labelling).

Many open codes were evident from the responses made by respondents concerning the investigation of factors impinging on the adoption of the EPS in the Libyan telecommunications companies. This can be done by asking several questions, such as, 'What is this?', 'What does it mean and represent?', 'What are the major codes of the inaugural address and how are these codes put forward?' These questions assist the researcher to utilise a process of constant comparison (Strauss & Corbin, 1967). Constant comparison compels the researcher to reflect on the data and commence cross referencing using memos, to support this (Glaser, 1978, p.83). The researcher / analyst must be aware of how to maintain the close connection between categories and data. He compares data coded in the same way (same category) to develop theoretical elaborations which emerge using theoretical memos. For example, respondents from an organisation made reference to the steps the company could consider taking time to ensure acceptance of the E-payment system:

*By following these Steps:*

•*Telecommunications companies must follow the ministry of*

*communications guidelines, which means that there should be a link between enacting laws and regulating the system.*

- The Libyan telecom and technology company has a big data centre to host a variety of websites.*

- To promote such a service within the universities. (RES110, 20+)*

Numerous open codes emerged from the organisational respondents' responses, regarding the steps that should be taken by the company to ensure that the E-payment system is accepted; one of these concerns was to stress that action should be followed by political support. This was emphasised when the researcher asked the respondent:

*'What steps can the company consider to ensure the E-payment system is accepted?'*

The respondent answered this by saying:

*"One of the successful methods guiding the adoption of this system is what the customer needs, and there are other issues related to the technical issues, such as security, safety, and trust. Therefore, these standards have confirmed the stability of this system over a long timeframe." (RES113, 30+)*

Therefore, the researcher found that when open codes are used to break the data down to begin with, it is logical to abstract data using a descriptive approach. So, the first code extracted from the respondent's excerpt was, "Telecommunications companies must follow the ministry of communications guidelines, which means that there should be a link between enacting laws and regulating the system". This excerpt means there should be political support. By using this code the researcher attempted to frame the important

codes immediately, aiming to describe what he drew from the respondent's transcript. The lack of regulation is another code that emerged from the same excerpt. The emergence of the remainder of the open codes arose by applying similar guidelines, generally abstracting with an analytical open codes insight. Indeed, many interesting open codes emerged. The researcher has tabulated all the open coding extracted from both perspective (organisational and consumer) in Table 5.4.1, to make them understandable and clear.

Open coding stage (consumer perspective)		Open coding stage (organisation perspective)	
<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Customer experience</li> <li>• Customer skills</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived benefits</li> <li>• Cooperation</li> <li>• Mutuality of Stakeholder Benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Staff experience</li> </ul>	<ul style="list-style-type: none"> <li>• Security</li> <li>• Trust</li> <li>• Reliability to EPS</li> <li>• Technical infrastructure</li> <li>• Acceptability</li> <li>• Ease of Use</li> <li>• Accessibility</li> <li>• Convenience</li> <li>• Post coding</li> </ul>
<ul style="list-style-type: none"> <li>• Social influence</li> <li>• Resistance to change</li> <li>• Customer awareness</li> <li>• Age</li> <li>• Education level</li> <li>• E-payment system/culture</li> <li>• Customer needs</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of Internet</li> <li>• Standard of living</li> <li>• Commercial awareness among customers</li> <li>• Withdrawal of control</li> <li>• Marketing business wariness</li> <li>• Feasibility studies for E-payment system</li> <li>• Islamic banking</li> <li>• Competition</li> </ul>	<ul style="list-style-type: none"> <li>• Social influence</li> <li>• Resistance to change</li> <li>• Staff awareness</li> <li>• Age</li> <li>• Education level</li> <li>• Change management</li> <li>• Ease of communication between companies and consumers</li> </ul>	<ul style="list-style-type: none"> <li>• Change of management</li> <li>• Availability of the service</li> <li>• Training courses</li> <li>• Availability of electricity</li> </ul>
	<ul style="list-style-type: none"> <li>• Security</li> <li>• Trust</li> <li>• Reliability to EPS</li> <li>• Acceptability</li> <li>• Ease of Use</li> <li>• Accessibility</li> <li>• Convenience</li> <li>• Post coding</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived benefits</li> <li>• Cooperation with external entities</li> <li>• Mutuality of Stakeholder Benefits</li> <li>• Cost of Internet</li> <li>• Competition</li> <li>• Withdrawal of control</li> <li>• Islamic banking factor</li> <li>• Banking infrastructure</li> <li>• Marketing business</li> <li>• Standard of living</li> </ul>	<ul style="list-style-type: none"> <li>• Instability of political situation</li> <li>• Governed by a single person</li> <li>• Cooperation between government, banks and telecommunication companies.</li> <li>• Political power</li> <li>• Legal frame work</li> </ul>

Table 5.4-1 Open coding extracted from both perspective (organisational and consumer)

As illustrated in the table above, based on both the attitude of consumers and the organisational employees, adoption of EPS in the Libyan context was found to influence by certain factors.

#### 5.4.1.1 Discovering categories

During the course of this research, the researcher identified twenty nine codes from consumers and thirty seven from organisations, as illustrated in Table 5.4.1. These codes were then linked into groups, as explained in Figure 5.4-1. Once the researcher had identified particular phenomena in the data he began to group all the codes around the data. The process of grouping codes that appear to be relevant and represent the same phenomena is called categorising. The phenomena or central idea represented by a category is given a conceptual name, which is necessarily more abstract than that give to the codes grouped under it.

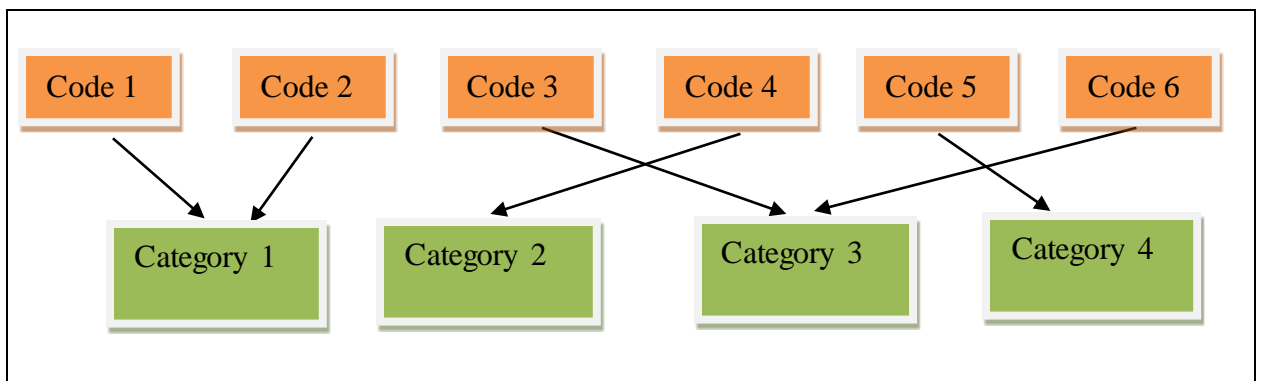


Figure 5.4-1 Open coding workflow

After gathering all the open codes from the respondents, the researcher was exposed to dimensions of the research subject, as covered in the research questions (see section 1.5).

### **5.4.1.2 Saturation**

The researcher continues to assign codes to new concepts until no new ones could be found. In this way it is possible to share meaning between the codes and the text until saturation occurs. This involves the researcher looking over the data repeatedly, considering the codes in relation to other codes with different emphases, and other events and instances that represent each category, and the different perspectives of respondents. After continuous rigorous comparison and further sampling the researcher stops when no new concepts or information is illuminated, and there is no further insight offered into each category. This means that the researcher stops coding when theoretical saturation occurs. At that stage, the researcher analyses the codes to identify similarities and reassemble the data into categories based on their properties, as well as considering the data relating to the location of each property. For example, the researcher recognised different codes in the consumers' responses, such as "knowledge", "customer experience", and then found "customer skills", he also asked what these codes share in common, and devised the concept of consumers' characteristics as the category name (see Appendix F, and G).

### **5.4.1.3 Naming categories**

The naming of categories is crucial because the name of a category lends meaning to the concept codes (Urquhart, 2013, p.103). It is relatively easy to choose a name for a category that has significance to the researcher, but it may have little significance to the audience of the research (Urquhart, 2013, p.103). Understanding this is essential, because the names of the categories' will affect how people make sense of codes and the theory; therefore it is beneficial to check codes with other researchers, before settling on the names of categories (Urquhart, 2013, p.103). The researcher / analyst

should then look at the lists of codes, and select broader and more abstract names as headings. For example, the concept technical concern is more comprehensive, linking a list of codes such as “security”, “trust”, “reliability to EPS”, “technical infrastructure”, “acceptability”, “ease of use”, “accessibility”, “convenience”, and “post coding”. These broader, more abstract labels may serve as headings for classes of codes sharing similar characteristics. All categories include many different codes that represent concepts; furthermore, the researcher creates these categories from codes and then links them to each category (see Appendix F, and G), summarising all the open codes from the respondents (at consumer and organisational level) linking them to categories.

#### **5.4.1.4 Developing categories based on properties and dimensions**

Properties and dimensions are significant characteristics in terms of developing categories; they also form the relationships between categories and subcategories (Strauss & Corbin, 1990, pp. 69–70). Notably, the way in which categories are established can be effectively highlighted by the investigator during this stage of coding. Once a category is identified, the researcher/ analyst can start to develop it, focusing on its specific properties and dimensions. For example, “knowledge”, “customer experience”, and “customer skills”, act as codes that share consumers’ characteristics because they have individualised attributes. The researcher chose the word “characteristic” to compare like events, assessing instances against themselves and other events in the textual data. The researcher also observed and noted that these codes had certain traits in common; i.e. what the individuals have or have not experienced skills and knowledge that might affect adoption of EPS in Libyan context.

Furthermore, it was important to the researcher to select a category through identification of its particular characteristics. The researcher was also interested in how

these properties diverge along dimensional ranges. For example, the experience level of each individual or consumer might be high or low, affecting attitudes to adoption or rejection of E-payment services. Through delineation of properties and dimensions, the researcher was able to differentiate a category from other categories improve its precision. For example, when assessing the concepts in each category such as, a category of “consumer characteristic” with individuals’ attributes, the analyst wants to know what attributes distinguish each. Is it high quality or low quality of skills, or experiences and knowledge that the researcher needs to identify? Note that when an analyst / researcher groups data into codes according to certain definite characteristics or attributes, this should be able to provide the researcher with an understanding of each event, instance, or individual that fits the code completely.

#### **5.4.2 Axial coding process**

Following the open coding stage, Strauss and Corbin recommended an axial coding stage. This requires the relating of categories to subcategories according to their properties and dominations (Strauss and Corbin, 1990, p.124). It seems that categories dissect and interconnect. As the researcher mentioned previously, in chapter four, a category is a phenomenon, which is an event, an issue or something that happens and is identified as significant to respondents. Procedurally, axial coding involves the following basic tasks, as stated by Strauss (1987): Firstly, codes must be dimensionalised by specifying their associated properties. Secondly, the researcher or the analyst identifies the most important categories, in particular which open codes need to be elevated or otherwise combined to form those categories. Thirdly, a decision must be made regarding which of these codes might be properties of other categories. The codes need to be dimensionalised by laying out their properties. The researcher or the

analyst assesses which categories might be the most important, and which open codes need to be elevated or otherwise combined to form those categories, as well as which of these codes might be properties of other categories. Furthermore, the process of analysis will be easier to understand and more accurate if a paradigm model is used, as explained and discussed in section 5.4.2.1.

During the axial coding process, the researcher forges a relationship between categories and subcategories at a dimensional level. This is illustrated by the fact that all the codes listed in Table 5.4-1 are qualified dimensionally. For example, the categories were identified during the open coding process, and some of these were found to be relevant to fixed phenomena, such as consumer or staff experiences, instability and political status in Libya, etc. Other categories return to the conditions that relate to these phenomenon. Every category has properties that can be dimensionalised by offering further specifications to the category. For example, the code “consumer experiences” has general properties, such as a degree of experience and duration of experience, which has a specific dimension based on these properties. This dimension has relevance to the development of theory. Axial coding subcategories, or codes in the case of the current research, are linked / related to categories through a paradigm model. This model, however, is used to forge the relationship between codes and categories in the axial coding process, as will be explained further.

#### **5.4.2.1 The paradigm model**

The paradigm model plays an essential role at this stage for reassembling data that has emerged through open coding. The paradigm model comprises six components: causal conditions, phenomenon, context, intervening conditions, action/interaction strategies and consequences, as clarified in the following subsections (Pandit, 1996; Strauss &



Corbin, 1998; Goulding, 2002), and as shown in Figure 5.4-2. Essentially, a paradigm model enables the researcher to consider data and its relationship within categories (Strauss and Corbin, 1990). Through the paradigm model, subcategories can be linked to categories within the current research, as will be explained later in this section and in section 6.3.

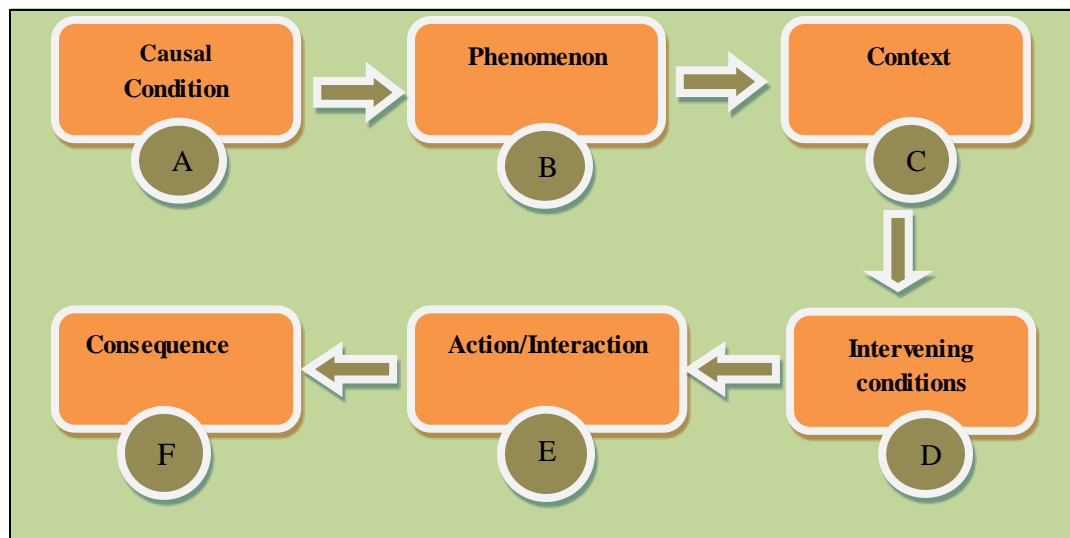


Figure 5.4-2 Paradigm model

Adopted from Strauss and Corbin, 1990, p. 99.

- a) **Causal conditions:** Conditions explaining events, incidents and situations or occurrences that affect phenomena (Pandit, 1996; Strauss & Corbin, 1998).
- b) **Phenomenon:** The central idea and a set of actions or interactions concerned with actions and interactions, and the way in which these are related (Strauss & Corbin, 1990, p.96).
- c) **Context:** A specific set of properties and conditions relating to a phenomenon (Strauss, 1987).

**d) Intervening conditions:** The general structure or condition that impinges upon strategic actions/interactions (Strauss and Corbin, 1990).

**e) Actions/Interactions:** Examined by the questions ‘how?’ and ‘by whom?’ These are strategies or routines devised to manage and handle events, problems or issues in response to phenomena under specific conditions (Pandit, 1996; Strauss &Corbin, 1998; Goede & Villers, 2003).

**f) Consequences:** Outcomes or results of actions and interactions that can be identified to understand phenomena (Pandit, 1996; Strauss &Corbin, 1998; Goede &Villers, 2003).

Four categories emerged at the axial coding stage process. These are: customer attitude, the benefit of EPS adoption, organisation attitude and political issues. As explained in section 6.4, some of the categories that emerged from open coding have similarities in regard to their properties. These guide the researcher to adopt a paradigm model to ascertain the link between each category and other related codes or subcategories. The concept can then be refined to reduce repetition. The analyst then continues to perform continual comparisons in order to validate the interpretation of categories and their subcategories or codes. Also, it should be noted that it is not possible to code around a category without introducing the concepts, codes, and ideas that evolved from the open coding stage process.

Analysts can use a framework during axial coding to demonstrate a relationship between concepts and codes. This is very important here, because it will assist the researcher in thinking through potential relationships. The analyst / researcher is looking for evidence to support the relationships, watch for evidence of other properties of categories and dimensions for each event that the researcher codes. For example, in

regard to the code “knowledge”, the researcher would comprehend the existence of other properties besides those the researcher/ analyst has already uncovered during open coding stage process. Moreover, as the researcher compares each incident, he would then seek to uncover the location of each property dimensionally. For example, one of the respondents from an organisation recommending the telecommunications sector in Libya was required to encourage consumers to use the E-payment system by adopting the following steps: Firstly, find secure methods that can be followed in order to make the process of transaction more secure; secondly, telecommunications companies in Libya should provide a secure e-service to assist consumers in performing transactions online instead of using traditional payment methods (cash and cheques). Thirdly, telecommunications companies should facilitate and deliver their service to assist consumers to work towards boosting the company’s revenue. The respondent pointed out:

*The telecommunications sector will take the following steps to accrue more benefit:*

- *Work to find safe ways to transfer money or process the electronic payment system.*
- *Provide direct service to provide a service for electronic payment instead of cash.*
- *Facilitate and deliver services to customers, which will work towards boosting the company’s income (RES112, 40+).*

The above example shows that the respondents recommended the telecommunications companies follow steps to support adoption of an E-payment system based on the ability to fulfil technical requirements.

In the aftermath, along with examples from additional respondents as mentioned in Appendix (E), the codes were re-formed and re-sorted into a single category including other codes with the same properties in each category, and noting the dimensional location of each event or incident. However, the researcher, in axial coding, developed fundamentals for selective coding. The categories emerged in axial coding as explained in Figures (5.4-3, 5.4-4, 5.4-5, and 5.4-6) having evaluated their properties, dominations and allied paradigmatic interrelationship in order to enhance richness and density (Strauss and Corbin, 1990, p.117). The following figures show the axial coding categories:

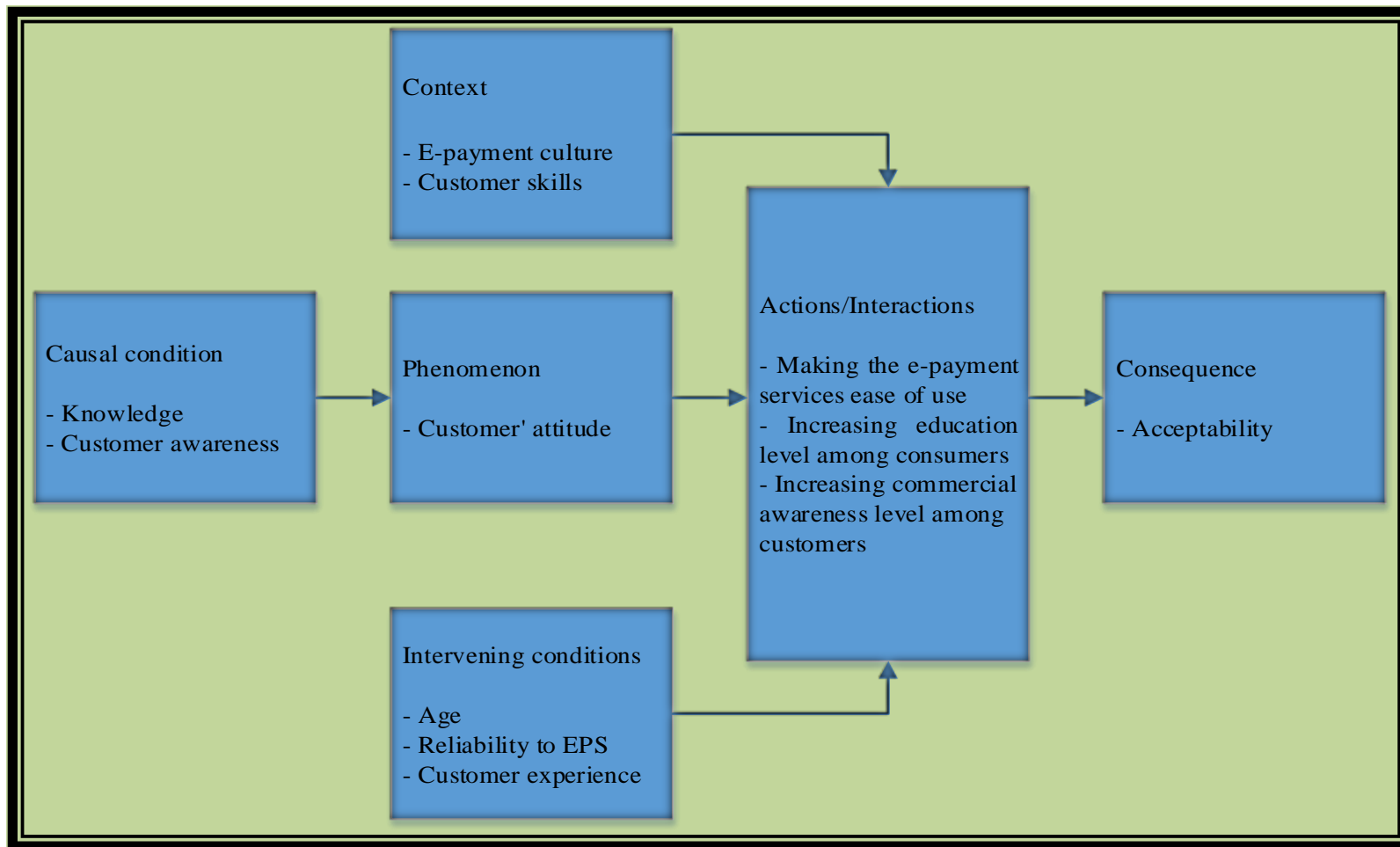


Figure 5.4-3 Customer's attitude category in axial coding

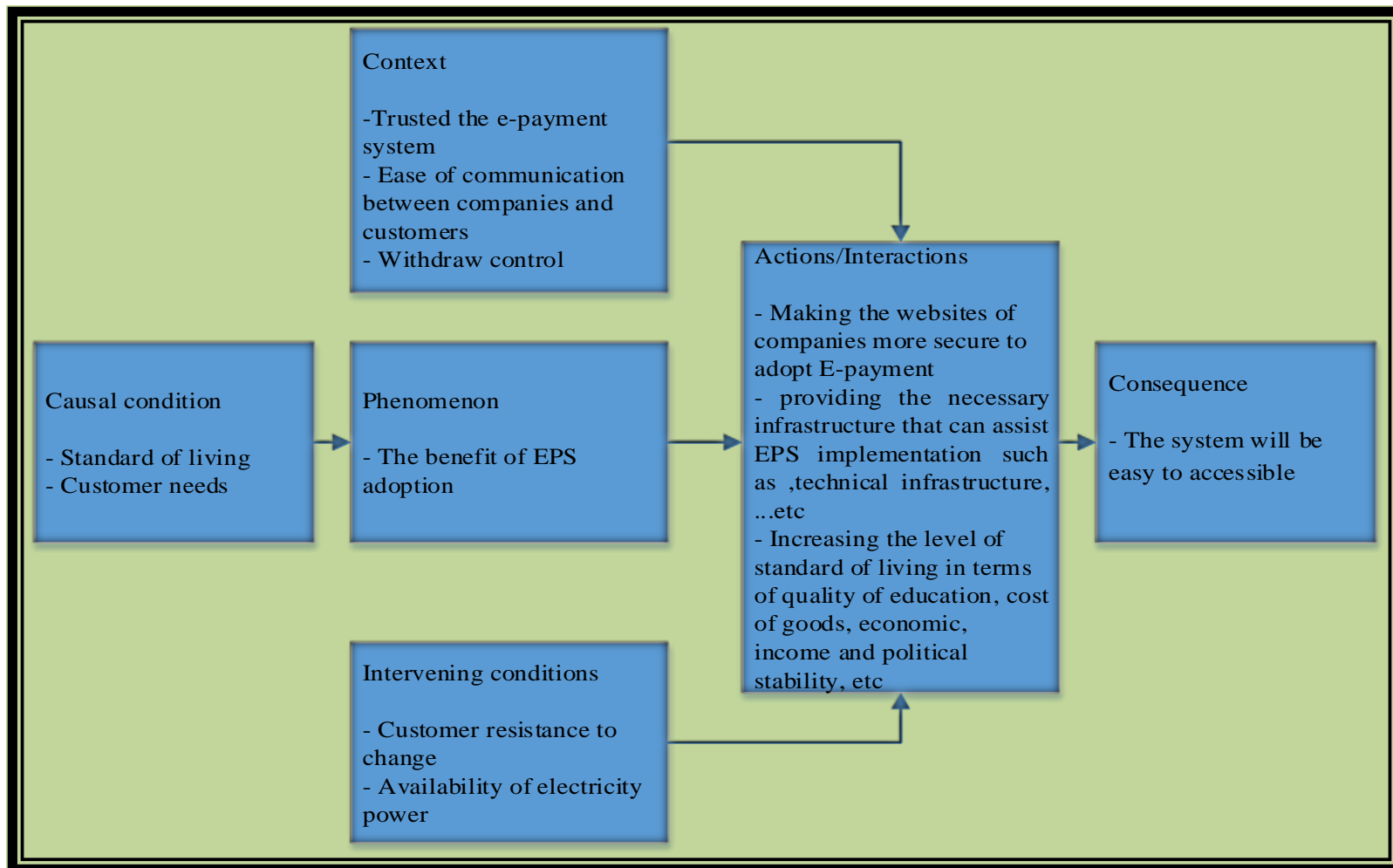


Figure 5.4-4 The benefit of EPS adoption category in axial coding

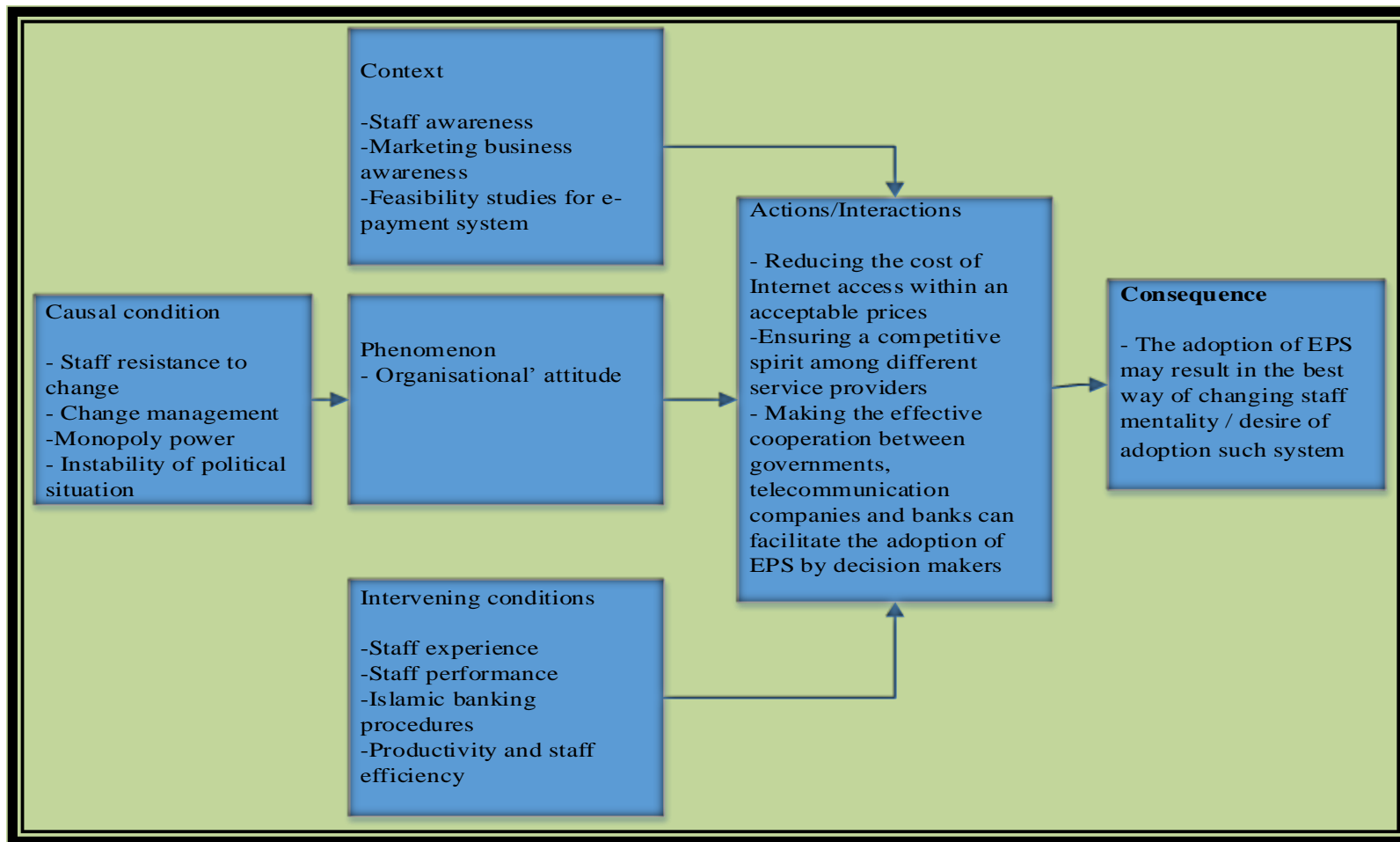


Figure 5.4-5 Organisational attitude category in axial coding

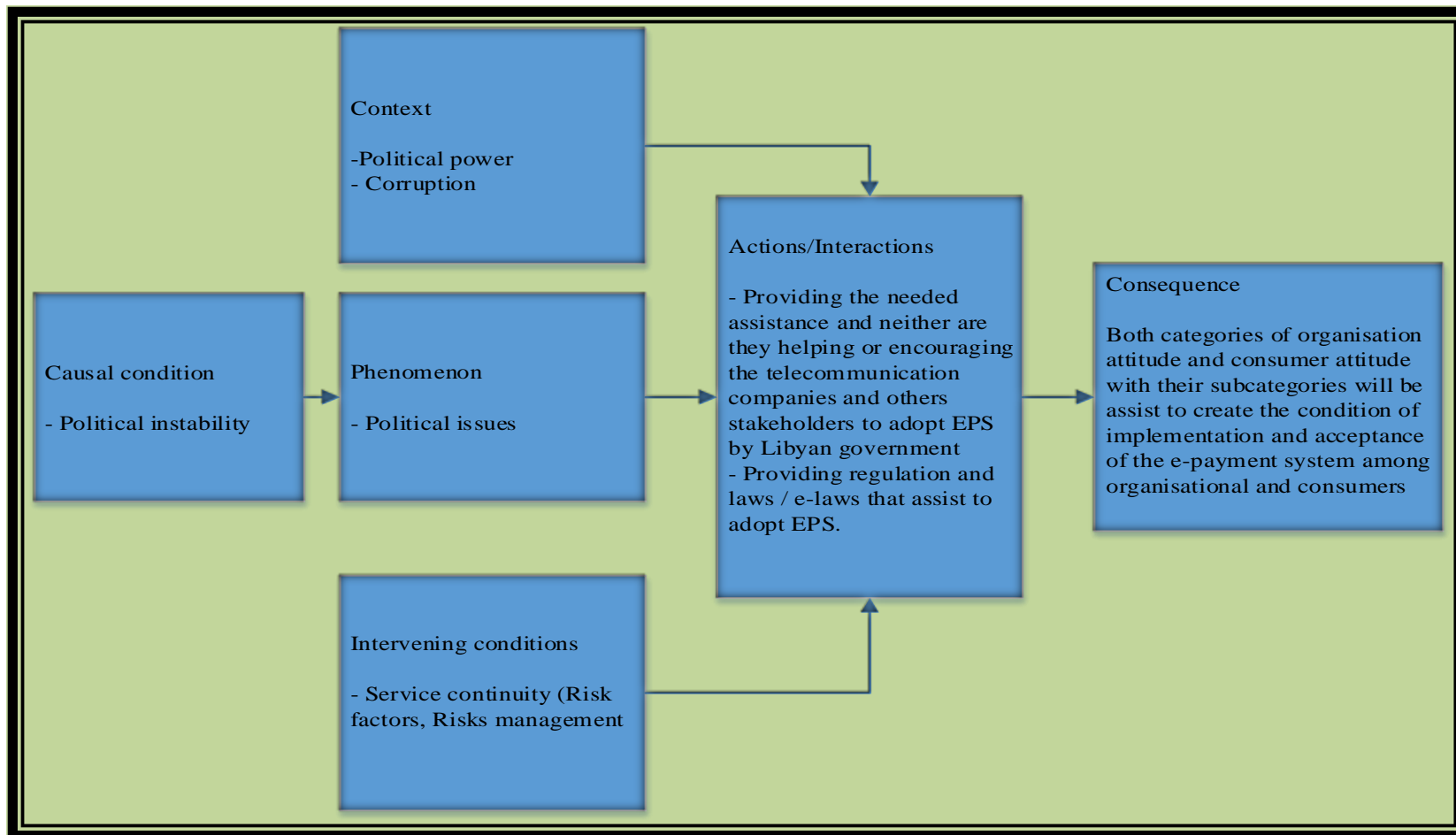


Figure 5.4-6 Political issues category in axial coding



Having identified the axial coding categories (for more explanation see section 6.3), it became obvious to the researcher that he could begin systematically to reassemble, group and link findings to establish a core coding framework as explained in the following section.

### **5.4.3 Selective coding**

In the open coding stage, the researcher / analyst explored categories and their properties, in particular seeking to identify how these categories vary dimensionally (see section 5.4.1). In the axial coding, categories were systematically developed and linked to their subcategories or codes based on a paradigm model (see section 5.4.2). However, the researcher was expected to have begun to uncover the possible relationship between major categories, reflecting their properties and dimensions. Furthermore, he started to refine and integrate theory. The selective coding process commenced to denote the final step in the data analysis. That encompassed several technical steps, through which this was accomplished, facilitating and selecting a core category. The first step included explaining the storyline, making use of diagrams, and reviewing of memos by hand to achieve the integration and establishing the theory. It is very important to formulate a descriptive story about the central idea or study phenomenon. The second step that can be used to facilitate identification of core categories relates to subcategories around the core category through implementation of the paradigm model, which is the same process as explained in section 5.4.2. The third step involves relating categories to their properties and dimensional levels, and the final step involves validating their relationship with literature. All these steps are discussed in depth in section 6.3.

### 5.4.3.1 Criteria for selecting core category

Similar to the other categories the core category must be developed in accordance with its properties. If a researcher tells the story perfectly it would then identify key properties. Based on discussion of the story line, the decision at the central heart of phenomenon or integration process. The central category or core category represents the important subject of the research (Strauss and Corbin, 1998, p.147). It consists of all the results of the analysis combined into a few words that illustrate and clarify the main factors effecting adoption of EPS in the Libyan context. The researcher / analyst identified the central idea in the data collected for the current research. He selected important factors as primary issues, which would support initial analysis as it would be reflected by the majority of respondents (see section 6.4), as important events, issues, or aspects requiring focus. In addition, the researcher adopted economic issues as core categories to be related to other categories. A core category can be developed from a list of existing categories, or the researcher could study the relevant categories to evaluate how each category tells a part of the story, although none of them can capture it completely (Strauss and Corbin, 1998, p.146). Listed below are the criteria that Strauss and Corbin (1998) identified when selecting core categories:

- 1. It must be central; that is, all other major categories are able to relate to it.*
- 2. It must appear frequently in the data. This means that within all or almost all cases, there would be indicators pointing to that concept.*
- 3. The explanation that evolves when relating the categories is logical and consistent. There is no forcing of data.*
- 4. The name or phrase used to describe the central category should be sufficiently abstract.*
- 5. As the concept is refined, the theory grows in depth and explanatory power.*

*6. When conditions vary, the explanation still holds, although the way in which a phenomenon is expressed might look somewhat different (p. 147).*

Table 5.4-2 Criteria for selecting core category

(Adapted from Strauss and Corbin (1998, p.147))

When the researcher moves on to develop a theory, the techniques for forging a relationship between the core category and other categories should be started by application of the paradigm model. We may also ask, how these categories arranged in terms of a relationship based on a paradigm model, and how are they fit into the story line. To answer this, the researcher returned to the categories that are emerged during the axial coding stage: consumer' attitude, the benefit of EPS adoption, organisational' attitude, political issues, and then began to group all them systematically. They are grouped according to their properties and dimensional ranges in regard to the chosen codes.

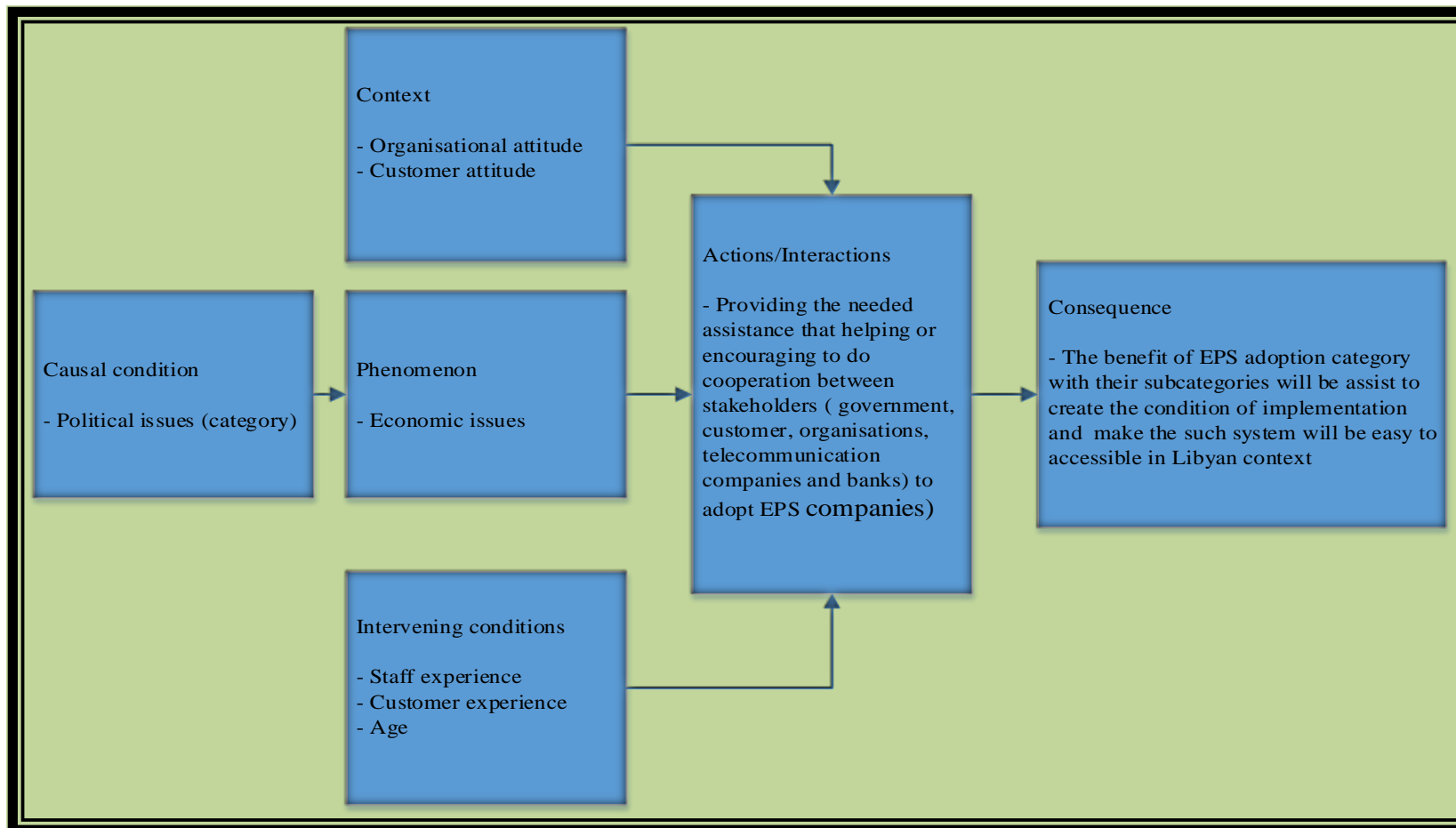


Figure 5.4-7 Economic issues “Core category “

Interestingly, the researcher found that the data for each emerged category related, not only to the board at conceptual level, but also at the properties and dimensional level.

Having identified, core categories for the current research, as illustrated and discussed, the researcher began to validate the theories that emerged against the data, completing the groundwork by establishing the theory either diagrammatically or narratively, as discussed later in section 6.4.

## **5.5 Summary and Conclusions**

The chapter discussed the results that emerged from the collected data. The factors that emerged from the perspectives of consumers, and organisational employees, were illustrated in sub-section 6.2.1 and 6.2.2. While undertaking the data analysis procedures, the researcher identified twenty nine codes from consumers and thirty seven from organisations, as illustrated in Table 5.4-1. After gathering all the open codes from the respondents, the researcher was exposed to all dimensions of the research subject as explained in section 5.4.1.1. The researcher then grouped the data into codes according to certain definite characteristics or attributes, this provided an understanding of each event, instance and individual that fits the code fully. Axial coding is the process of linking emerged codes together, through the use of a paradigm model as explained in section 5.4.2 based on their properties and dimensions. The researcher identified the axial coding categories, he then explained the steps that followed when building on grounded theory, including the storyline, and relating categories to their properties and dimensional levels through the implementation of a paradigm model, which is the same process as explained in section 5.4.2.1, and the final step that involved validating their relationship with previous literature. All these steps are discussed in depth in section 6.4.

It was therefore concluded that the chapter discussed grounded theory, in particular the Straussian approach, in depth. It also offered an explanation of the main differences and similarities between the Glaserian approach and the Straussian approach (see section 3.4.6). It was then appropriate to consider how the Straussian approach could fulfil the purposes of this research. The chapter concludes by discussing and highlighting the features and procedures used in the Straussian approach, and supporting with examples from the participants' answers. The next chapter will discuss the findings from the data analysis in more detail. It will also discuss the factors that affect the adoption of EPS in Libya from both perspectives (consumers and organisational), and in terms of *socio-organisational, economic, political, and technical factors*.

## **6 Findings and Discussion**

### **6.1 Introduction**

This chapter describes the three procedures adopted for data analysis, with the assistance of different diagrams, which establish the relationship between the different factors which emerged from the study. The factors that emerged are presented in the context of Libya and based on two perspectives, namely consumer and organisational perspectives, as discussed in Chapter five and summarised in Table 5.4.1-1. In addition, a further detailed explanation of the emerged factors will be provided later in this chapter. This will be achieved by linking established factors with the knowledge gained from the review of existing literature. Additionally, the reasoning underpinning the interrelationship between the emergent factors will be explored.

In the context of the current work, the analytical procedure is based on a Straussian approach, which encompasses three stages of coding, including open, axial and selective, as discussed in sections 6.2 to 6.3. The codes that emerged in the open coding stage are compared with each event and incident, and related to relevant phenomena to establish similarities and differences between them. Similar events are coded and grouped into a single category, to establish the specific dimensions of each attribute in association with a given category. Analytical techniques were discussed in Chapter 5 (e.g. section 4.5.45.4) and will be used to make the above comparisons until no new data emerges. In other words, the constant comparison technique works in tandem with theoretical sampling and theoretical saturation with a view to attaining data saturation. The other aspects of the Straussian procedures entail axial and selective coding, where the categories are re-categorised based on a paradigm model, as discussed in section 5.3

and 5.4.3. Once the researcher has completed the data analysis grounded theory (core category in selective coding stage) will be discussed.

In the sections that follows, three procedures adopted for data analysis purposes are presented, with the aim of establishing a relationship between various factors, and providing clearer insights into the phenomenon under investigation. Furthermore, an in-depth discussion of the factors that emerged from the full study, from consumers and organisational perspectives, will be presented in sections 6.2 and 6.2.2. Once the categories are identified (open coding stage) the researcher develops these based on their specific properties and dimensions, showing how these categories vary dimensionally in accordance with those properties. The findings analysis section encompasses three main sub-sections, including open coding, axial coding and finally selective coding. This in turn allows the development and analysis of categories relative to their properties and dimensions. In the sections that follow, analysis of findings from the field work carried out in Libya, from both an organisational and customer perspective is presented.

It is important to highlight unrest within Libya in regard to the war that began in the eastern region in mid-February 2011, which then slowly spread across the country. In particular, it has been noted that unrest in Libya had economic, political, social and technical implications. During the course of this research, the researcher investigated the role potentially played in regard to changing Libyan telecommunications staff and their customers' perspectives in terms of the impact of these factors upon the adoption of an electronic payment system (see discussion in section 6.2.2.4). Finally, the findings of the current research introduced three additional factors, in which there was a strong contribution strengthening the current research (post coding, standard of living, and



unstable political situation in Libya), as discussed in sections 6.2.2.1.4, 6.2.2.2.10, and 6.2.2.4.2.

## **6.2 Findings from both organisational and consumer perspectives**

The factors that emerged from the Libyan context from the perspectives of consumers and organisational employees are discussed in sub-sections 6.2.1 and 6.2.2. The data analysis introduced in this research depends on the proposed research questions and the aims the researcher wishes to achieve. The aim is to investigate and explore the question: *What are the social, economic, political and technical issues regarding the adoption of an E-payment system in Libya from both perspectives of consumers and organisational?* In addition to this, it aims also to explore the interrelationship between these factors and their impact on each other, as well as the influences potentially leading to the adoption of EPS in Libya. This can be achieved by the researcher immersing himself in the field of investigation and respondents answers to interview questions.

### **6.2.1 Open coding process from the consumer perspective**

As explained in section 5.4.1 four categories emerged during the open coding stage. This included the consideration that certain events share common characteristics with other properties, hence there is a need to separate them from the others. The researcher can use these common properties to group data within same category (Strauss and Corbin, 1990, pp. 69-70) as will be discussed in the following sub-sections, with regard to the research questions (see section 1.5) and based on the consumer's perspective.

#### **6.2.1.1 Consumer characteristics (e.g. knowledge, experience, skills, and age)**

Consumer knowledge, experiences and skills are factors that were revealed by the participants' responses. Consumers have basic information about the meaning of EPS

and some of are equipped with knowledge of how to use their credit cards for online transactions. Their level of knowledge is influenced by their experience, as established from their responses to the interview questions. For instance, based on questions relating to whether they had had the opportunity to use EPS, the respondents spoke about their experience and practice of the use EPS in Libya, using Libyan Amman Bank cards for buying goods worldwide. A consumer said:

*Yes, inside Libya, through the use of the cards of bank of Amman, and the FEDEX (Company who provide a physical address at any country) delivery system then the consumer can get the goods purchased via the company's address in Libya. (RES90, 30+)*

Another respondent from a consumer group expressed his experience of the use of EPS, with an international visa debit / credit card issued from outside Libya, saying:

*Yes, several times internally and externally through the international bank account, and sometimes using friends' addresses, or the addresses of global companies such as DHL, FedEx in Libya to order online. (RES110, 20+)*

The imports from the above two responses clearly indicates that lack of knowledge among consumers hinders them to make use of EPS services. However this factor led the researcher to think more deeply about the knowledge they have, prompting questions, such as “is the lack of knowledge attributed to lack of experience?”; “Is the lack of knowledge influenced by education level?”, “Does knowledge affect the age of the consumer?” The lack of experience in dealing with EPS creates a lack of skills and practise for the use of the Internet as a means of carrying out online transactions. Based on the above, knowledge and experience revealed from the literature review has a

considerable impact on successful adoption of any given technology service (Al-Mabrouk and Soar, 2009, pp.110-111). This is apparent from the respondent' comments when asked the following question:

*Have you had the chance to use it? If "yes," please explain, how and where? If no, please explain why not?*

This is evident, as indicated by the response from a consumer stated below:

*No, this service is not available in my country. In addition, I don't have any kind of payment cards which means I don't have any skills about how to use it. (RES110, 20+)*

One respondent stated that young people comprise more than 80% of the Libyan populace. Age and number of young people was a factor mentioned by many respondents; it was also closely related to level of education. Young people were found to be motivated to adopt EPS, due to their capacity to understand and accept new technologies and/or any such system, as compared with elderly people, who do not possess sufficient knowledge about how to use Internet services, especially EPS. The following statement from a respondent at the consumer level confirmed this view:

*Young people in the Libyan community comprises more than 80% of those who are able to use the internet and aware about its applications and implications, whilst the percentage of elderly people, around 10% are unaware of online services and therefore they do have not idea about online payment...(RES91, 30+)*

This is line with the findings from the existing literature, which suggest that socio-economic characteristics or population variables such as age are critical factors affecting the adoption of technology (e.g. Stansfield & Grant 2003, as cited in Dahms & Dubey, 2014, Padachi *et al.*, 2008, and Wu *et al.*, 2012). Based on the above, when the researcher reviewed the previous literature, he found the knowledge and experience were revealed as having a huge impact on the successful adoption of technology services (Al-Mabrouk and Soar, 2009, pp.110-111). It was disclosed through a study conducted by Anyanwu *et al.*, (2012, p.462) that most people have no common knowledge about Internet applications and are far from a point where they would adopt information and communications technology (ICT) in their banking. Some stated that they conduct their transactions using traditional payment methods (cash payment), rather than electronic. Salisbury *et al.*, (2001) argued that in the case of the use and adoption of E-payment services, it is probably that consumers have limited knowledge about the distribution of potential outcomes of the use of the Internet as a channel for online transactions when using debit cards.

#### **6.2.1.2 Education level**

In this regard, the level of education played an important role in increasing knowledge among consumers about the use of EPS and the Internet. This shows that educated people are those with the ability to understand the importance and benefits that can be derived from the adoption of EPS, as compared to elderly people who are less well educated about internet use.

Knowledge, experience, education level, skills and customer needs are interrelated with each other, explaining why they are grouped in the same category, 'customer perspective'. In addition, these factors have influenced growing understanding of

consumers regarding the adoption of EPS, with the overall aim of assisting telecommunications companies to improve their service. It can be safely argued that lack of experience might be attributable to resistance to change, as this is corroborated by a respondent considered only why people resist, or find it difficult to adopt new technological services such as EPS. This is evident based on the following comments, as reported by a respondent:

*As usual when any new technology is initiated then, questions are raised namely; can this service be adopted? Any new technology initially faces criticism over time related to sufficient experience, which can assist in overcoming barriers; although there are consistent improvements with regard to Libyan culture, to deal with these new technologies. (RES112, 40+)*

This finding is consistent with that in other studies, such as Ramanathan (2011) as well as the research conducted by the Office for National Statistics (2010), where it was submitted that lack of education can have a considerable influence on the attitude of consumers toward purchasing online. The above results concur with the findings of Özkan *et al.*, (2010) who found that most E-payment consumers were undergraduates and postgraduates

The preceding section explains the open coding process from a consumer perspective, in the sections and subsections that follow an explanation will also be presented from the organisational perspective.

## **6.2.2 Open coding from the perspective of an organisation**

Three categories namely technical, economic and organisational are created during the open coding stage. The factors related to each category will be discussed in the following sub-sections, with regard to the research question (see section 1.5) and based on the organisational perspective.

### **6.2.2.1 Technical factors**

Different types of respondents from different positions within organisations (Government, banks and telecommunications companies) expressed their views regarding those technical factors that impact on adoption of EPS. These factors affect companies' organisational structure and have generated huge concern among the population regarding the adoption of EPS in Libya, especially in relation to the telecommunications sector.

The Deputy Minister of Communications and Informatics confirmed that lack of training courses, due to the lack of technical infrastructure should be dealt with effectively, so as to contribute to increased awareness among people in relation to the adoption of the EPS. This inference is drawn from the statement quoted below:

*If the infrastructures exist, we will open training centres to support system implementation, and make people aware of the system's fitness for purposeful usage. (RES104, 50+)*

And he added:

*Security is the most important elements for all transactions between websites and telecommunications companies; should the following points be considered to ensure EPS is widely approved and accepted:*

*The best way to convince customers is to be definite, because people have no proper knowledge / are unaware about electronic means and the risks associated with them. In addition, setting secured transaction protocols between end-users PCs and the banking system. (RES104, 50+)*

In the same vein, when the Director of Financial Management and Accounting at the Libya Telecom & Technology Internet Service Provider Company was asked the question “what in your opinion can the telecommunications companies, the banking system, and the Libyan government do to encourage the use of E-payment system service?” He stated the following:

*The telecommunications sector will take the following steps to accrue more benefit; firstly, working to find safer ways to transfer money or rather use the electronic payment system, secondly, providing direct services that allow electronic payment instead of using cash, and thirdly, facilitating and delivering services to customers, which will work toward boosting the company's income. (RES94, 40+)*

The majority of respondent from organisations submitted that security issues, trust and reliability relating to EPS are key concerns for online payments, as these are based on the transfer and storage of data that can be hacked if a system is not well secured. They added that the adoption of EPS will be boosted by the use of a secured system for carrying out online transactions through the Internet. For example, the Director of the Department of Information Technology at Libyana Mobile Phones Company said:

*Provide simple things that make the transaction easier for the customer to adopt electronic payment systems in a simple, safe way, and with fewer accessibility problems. (RES95, 30+)*

Similarly, the Director of the Information Technology Department in the Prime Minister's Cabinet, also mentioned that the existence of security issues within companies providing online payments through websites is a very important factor which could positively affect the decisions of consumers, regarding whether to use the website or not. This is supported by his statement as given below:

*In the current situation in Libya it is necessary to provide a security factor before adopting EPS, so that people are less concerned about using online payments. (RES102, 40+)*

He highlighted the role the government can play in reducing security issues when he said:

*When government support is available for such projects (e-commerce and E-payment system), it makes individuals feel safe when using electronic payment system. (RES102, 40+)*

The Head of Business Administration in the Libya Telecom & Technology Company for Internet Service Provider corroborated with the previous respondent regarding security issues, trust and reliability and EPS, which were some of the main challenges that the telecommunications companies faced regarding the adoption of EPS. When he said:



*The telecommunications sector will take the following steps to get more benefits; Firstly, working to find safer ways to transfer money or rather process electronic payments. Secondly, provide direct services for electronic payment instead of cash, and gain / build consumer trust in the service offered. Thirdly, facilitate and deliver services to customers and boosts Company's benefit. (RES92, 30+)*

The significance of the above discussion is that technical factors are among the factors influencing the adoption of the EPS. This improves the attitude of users toward the use and adoption of EPS. This means, if telecommunications companies ensure all the necessary requirements they can also ensure the availability of technical factors affecting the user's attitude towards the final acceptance and adoption of EPS positively. For example, Devi and Malarvizhi (2010) examined customers' perceptions regarding e-banking in India, and their findings disclosed that customers were experiencing technical difficulties when following procedures, and had less of a social relationship with the bank.

#### **6.2.2.1.1 Trust and reliability**

Trust and reliability are linked to security issues and represent an integral part of the online transaction processes (Worku, 2010, pp.2-7). A staff member from the Administration of Republic Bank branches in Tripoli submitted that the adoption of EPS within the telecommunications sector will create trust between consumers and their banks; encouraging them to conduct more transactions online, and consequently boosting their trust in telecommunications companies and using their website facilities for transactions. This is supported by the comment below, which was given by a respondent:

*An electronic clearing system will establish trust between customers and their banks, increasing the volume of exchange / transaction between the former and the latter. From a purely commercial point of view, customers using online payment systems via their banks, increase benefits for banks using this service. (RES99, 40+)*

The importance of the above statement is that if proper security measures are put in place, this would then increase satisfaction and trust among consumers. This assertion is further buttressed by a respondent:

*Provide the simple things that make the adoption of EPS easier for consumers, in terms of simpler methods when using the electronic payment system, including accessibility and security. (RES95, 30+)*

The findings from the review of prior literature regarding the challenges faced when adopting new technologies from both organisational and consumer perspectives are in line with some of the findings in the current work. For instance, Ullah *et al.*, (2013), Abukhzam (2010, p.2), Swaminathan *et al.*, (1999) and Rose (1999) all concurred with the fact that trust is one of the most important concerns regarding the integrity and overall embracing of online transactions. In their work, Kim *et al.*, (2003) also explained the effectiveness of websites and suggested that the overall quality of a website in terms of security and robustness should be enhanced to improve the overall trust and satisfaction of potential users. Equally, the author reported that the reliability of a website and its response time to user queries is essential toward supporting the performance of online transactions. Furthermore, Pavlou and Chai (2002) also supported the argument by affirming that the concept of reliability is the singular most

important factor in the context of online transactions, when shopping via internet and engaging in consumer behaviour. Lee and Turban (2001) found that lack of trust is the most often cited reason for consumers not embarking on online transactions.

#### **6.2.2.1.2 Ease of use and convenience factors**

The researcher has noted that apathy can be a factor limiting the adoption of new technology. This is especially related to online transactions, in regard to the ease of use of technology and personal conviction. The Deputy Minister of Communication and Informatics mentioned in interview, that in order to ensure that customers experience a better quality of service, including ease of use and convenience, thorough guidelines must be followed to ensure a secure system. This explains why when he was asked “in your opinion, what can the telecommunications companies / banks / government in Libya do to encourage the use of E-payment system / service? Please explain your answer.” He responded that all participating actors must work together to achieve greater acceptability and usability. This can be inferred from his words:

*Firstly, provide the service in a simple and convincing way. Secondly, advertise, telling people in a convincing manner how the system works, offer free training so that customers can perform their own online transactions. Thirdly, educate people through the media, give free training, and videos making them aware of the dangers of E-payment systems at the same time. (RES104, 50+)*

According to one respondent, some managers of telecommunications companies are beginning to realise the importance of the impact of ease of use and personal conviction on the adoption of EPS. They have suggested that if elaborate stepwise procedures, in

the form of videos and other multi-media services are provided, this will go a long way to increasing the tendency of users to accept and adopt new technologies. To this end, the director of administration in the Libya Telecoms Company stated:

*When the telecommunications companies consider the barriers facing EPS, they will facilitate EPS procedures, and also reduce the proportion of the monopoly held by some big companies and individuals, in order to provide people with an easy to use EPS system. (RES105, 30+)*

Another respondent from web services department also agreed with the notion that the utilisation of interactive techniques to educate users will facilitate ease of use and accessibility. The respondent suggested some steps to achieve this, as captured in his statement below:

*The telecommunications companies / banks / government in Libya can do the following to encourage the use of E-payment system service; firstly, provide the service through the companies' websites since customers prefer payment from their homes. Secondly, encourage customers from outside Libya to interact with corporate services instead of a single company retaining a monopoly. (RES87, 30+)*

The importance of the above expression is that ease of use is an important factor measuring the user satisfaction strategies in place to ensure this attribute. This will in turn enhance the attitude of users toward the use and adoption of EPS. Similarly, another respondent stated that it is the sole responsibility of telecommunications companies to ensure ease of use for their services including EPS. This suggests that in the context of Libya, if telecommunications companies ensure all the necessary

requirements ease of use will lead to positive attitudes on the part of the users, supporting final acceptance and adoption of EPS. For instance, Harris (2011) submitted that the level of usage of EPS increases for every additional increase in perceived functionality. This assertion is also supported by the work of Davis (1989), whereby it was submitted that ease of use affects consumers' uptake of new technologies by. Similarly, Djamasbi *et al.*, (2010) stated that ease of use has a strong influence on decision making, in particular, whether to accept or reject a new technology, such as EPS. An interesting conclusion was reached by Moore and Benbasat (1991) and Wu and Chuang (2010). This states that most individuals exhibit a strong aversion to a new technology, especially if it requires that they need to acquire a new set of skills to utilise it.

#### **6.2.2.1.3 Accessibility**

Factors pertaining to accessibility can be described if the EPS is made readily available; that is, if people can access it and if it has been ascertained that they can benefit from the service. For instance the Deputy Director of Administrative Affairs at the Libya Telecom and the Technology Internet Service Provider Company stated that if telecommunications companies make all EP services available via the internet, and accessible to people, regardless of whether they are disabled or not, the provision of a PC screen reader, which can enlarge the text on the telecommunications companies websites, then the level of difficulties regarding online transactions will be minimised. This notion is echoed by a respondent here:

*The electronic payment system will facilitate the payment process,  
without using a cash / cash payment system, and simply using this EPS*

service, which is available any time, and anywhere, providing that you have access to a PC and get online. (RES95, 30+)

This view is confirmed by the Director of a central network, who stated that if the availability of the Internet Services in most cities in Libya is high, in terms of quality and standards, this will fast track the adoption of EPS. He issued the proviso:

*Providing the Internet service is democratic in all the Libyan cities, at a reasonable price that is accessible for the majority of the citizens, with a quality service. (RES90, 30+)*

This suggests that the ability to access businesses and services by EPS must also embrace a wide range of concerns, including social and cultural issues, disability and economic interests (Coopers and Zmud, 1990). Putting in place a mechanism to cater for people with disability ensures that they are not discriminated against. Economic concerns relate to cost and affordability (Humphrey *et al.*, 2001). Furthermore, bank opening hours should be extended to support customers with a view to preventing customers from spending more time queuing, because from a cultural perspective, people are not used to long waiting times (Ullah *et al.*, 2013; Abukhzam and Lee, 2010, p.4; Libyan Economic Forum, 2008). Therefore, from the above discussion the researcher affirmed that the ability to access business and e-services provided by EPS includes social and cultural issues, disability, economic interests and social concerns; as some people would prefer simpler business transactions, via which a person can be contacted. In addition, lack of EPS facilities in Libya are due to modern banking, such as, Internet access, EPS service and e-banking, which have not been adopted yet.

#### **6.2.2.1.4 Post coding**

The lack of post coding services (e.g. mail system) and technical support in Libya has a huge influence on the adoption of EPS by telecommunications staff. In other words, the lack of post coding services in Libya makes the adoption of EPS difficult when making online transactions, especially as there is no link between the telecommunications companies and the banks, regarding the addresses of Libyan citizens. This problem is corroborated by a respondent who said:

*In terms of EPS, it will take some investment from the ministry in regard to the standpoint of infrastructure stand point. There is no link between customers and the local Libyan Banks, with the exception of the bank of Amman and the Bank of Commerce and Development. The percentages of Libyan's working in the public sector are very high. A way to improve the mail system, and deliver products safely should be considered, and as those responsible for this department, we should lead the reflection.*  
(RES92, 30+)

Another respondent from the Information System Management department argued that the issue of a delivery system can be resolved through services provision by outlets such as the RMX Company. In this regard, he said:

*The process of electronic payments will be one of motivation to the others in that they accept such a service in Libya. There is no problem affecting the delivery of products, because the RMX Company solved this problem by identifying a virtual place a western country; they also determined the prices for using these services. In addition, another company called Al*

*Yamamah provides the same type of service as that delivered by the RMX Company. (RES196, 40+)*

Post coding is a new factor, which has not been revealed in previous studies about Libya; it is significant though, especially as it relates to delivery and mailing system services. The lack of such services makes the adoption of online transactions inconvenient. This is essentially due to the long wait time between the online transaction and final delivery of the ordered products.

#### **6.2.2.1.5 Availability of EPS**

The Director of the Department of National Payment System at the Central Bank of Libya stated, local banks should embrace new platforms such as the National Payment System with a view to improving overall banking activities. He suggested that as a first step, the use of such platforms should be introduced to commercial banks. This would reduce public apathy and fast track the adoption of EPS. This is evident from his statement:

*When the electronic payment system is activated, then customers will be able purchase online anytime and anywhere around the world. This availability of online transactions at anytime and anywhere, might lead consumers to evaluate staff performance by making complaints through the Department of Human Resource Management. This in turn will encourage staff, motivating more consumers to adopt the electronic payment system (EPS). (RES99, 40+)*



He explained that increasing the availability of such systems would potentially allow individual users to embrace their usage of online transactions at all times, provided they have access to internet connectivity.

Poor penetration of internet connectivity in Libya has greatly hindered the adoption of new technologies based online, and this in turn has affected the online experience of users. The implication of this lead to loss of interest in online transactions, endangering the acceptance of technologies such as EPS. In essence, for a technology based online to be adopted and widely accepted there must be technical infrastructure available to power internet services. The websites on which transactions will be carried must be secured and campaigns embracing such technologies must be rigorously carried out. With all these factors in place, the adoption and implementation of EPS will be successful. The Director of the Islamic Banking sector, at the Republic Bank in Libya gave a clear example of how the lack of technical infrastructure affects the deployment of online services, when he said:

*The telecommunications sector does not have a sufficient infrastructure, even where it used adequately. (RES100, 50+)*

The findings in the current research conform with what has been reported in the literature, in regard to factors affecting the adoption of new technologies. For instance Laudon and Traver (2002), and Laudon *et al.*, (2010, as cited in Nor *et al.*, 2013) submitted that online transactions can help companies to: increase production flexibility by ensuring the timely availability of components from suppliers; improving the quality of products through increased cooperation between consumers and suppliers; reduce quality issues; increase opportunities for collaborating with suppliers and distributors;

and create more transparent pricing mechanisms, so that consumers can compare prices. Similarly, Medvinsky and Neuman (1993, 1995), as cited in a study conducted by Peterson and Howard (2012), concluded that the successful operation and adoption of new technology, such as online payment systems, is dependent on the availability of technical infrastructure and an efficient functioning of enterprises responsible for deploying the technology. The researcher suggested that the availability of an EPS environment may have influenced individuals, whether customer or organisational attitudes toward the adoption of EPS. While many studies have previously studied EPS in the west, they have nevertheless provided a solid basis for predicting consumers' intention to adopt (Rouibah, 2012).

#### **6.2.2.1.6 Availability of electricity**

A respondent stated that as far as he was concerned, the availability of electricity is central to ensuring telecommunications companies in Libya can provide uninterrupted EPS services. This is summarised below:

*Electricity must be provided to ensure continuity in online services, including E-payment services. (RES100, 50+)*

This submission is consistent with findings in other related work; especially as reported in Mishra (2008), which lack a robust telecommunications infrastructure and irregular supply of electricity, that might otherwise hinder the implementation and adoption of online services such as EPS in the Libyan context. The researcher found, through respondents' responses, that telecommunications companies cannot rely on utility power during situations of unrest in Libya. They are unable to give people the reliability or power quality that individuals need to operate their transactions smoothly. Even a

short outage or power quality event can cause serious chaos for individuals, organisations and businesses.

In the preceding sections the open coding process was presented from an organisational perspective, in terms of technical factors. In the sections that follow, the open coding process from the organisational perspective, as it relates to economic factors will be presented.

#### **6.2.2.2 Economic factors**

The findings revealed from the respondents, based on economic perspectives, regarding the adoption and implementation of EPS within the Libyan communication sector, include: perceived benefits, cooperation with existing entities, mutuality of stakeholders, cost of Internet adoption, standard of living, marketing businesses, awareness, withdraw control, feasibility studies for EPS implementation, Islamic banking services and competition. These are important economic factors in the adoption of EPS in the Libyan communications sector. In the subsections that follow, a brief description of each attribute is presented.

##### **6.2.2.2.1 Perceived benefits**

The respondent expressed views about the influence of these factors toward adoption of EPS. These results will be established through the respondent's responses. For instance, when the researcher sought to establish how perceived benefits impact positively on the adoption of EPS in the Libyan communication sector, a respondent from the Libya Telecom & Technology Internet service provider said:

*The companies can provide limiting offers; this gives them a reference for buying online, they used to get a bounce and spread awareness among people. (RES92, 30+)*

Another respondent from the Libyan Mobile Phone Company argued that the revenues of such companies will increase following adoption of EPS. Additionally, the adoption of EPS will contribute to the national revenue overall.

*When the system makes is easier for people to adopt this system, and the company distributes profits, this will, in turn increase the economic revenue of the country. (RES95, 30+)*

The importance of the above expression is that the perceived benefits derived from the adoption of EPS can significantly encourage telecommunications companies to roll out services and in turn could then encourage users to embrace these services. This assertion is in line with findings by Lee (2009) and Zhe *et al.*, (2006), which concluded that perceived benefit factors significantly enhanced the rate at which online services are embraced, implemented and adopted.

#### **6.2.2.2.2 Cooperation with existing entities**

The cooperation with existing entities is another factor related to economic factors. Effective cooperation between governments, telecommunications companies and banks facilitate the adoption of EPS by decision makers. The Director of Islamic Banking at the Republic Bank in Libya echoes this view, stating that the existence of cooperation between individual entities would increase the degree of trust among stakeholders regarding the adoption of such a system. Thus, this factor can be understood to play a role in encouraging potential users to embrace new technology.

*When a customer obtains a bank card, this means he will be in touch with the bank, which increases confidence. This result reveals the customer's desire to deal with the banks electronically, moving away from using traditional methods of payment. (RES100, 50+)*

This clearly suggests that a proper information sharing mechanism between relevant entities (e.g. telecoms companies, bank and government) who have a say in the adoption of technology can contribute to the successful adoption of EPS. This is because the discussion that stems from information sharing will allow individual parties to ascertain each other's needs before deciding on what final action to take. In doing so, different barriers regarding the adoption of EPS could be identified, from which efficient ways to curb such barriers, including regulatory requirements could be determined. This notion was expressed by the Manager of Finance and Accounting in Libya and the Telecom Internet Service Provider Mobile Company:

*The state is the most important link in the creation of cooperation, and then comes the company's role in providing the service, and then the role of individuals, to choose from what is available to them, to feel comfortable that their transactions online are secure and safe. (RES94, 40+)*

The submission above is in line with findings reported by other researchers regarding cooperation between entities. For instance Guo and Wong (2012) stated that an E-payment standard is often required for adopters to follow. The service providers of specialised electronic payments, integrating current payment methods and facilitating close cooperation with stakeholders to clear and settle payments, often apply this.

Baddeley (2004) concluded that the successful adoption of EPS requires universal acceptance through investigation of barriers from an economic point of view; noting that this can only be achieved in cooperation between entities such as corporations, governments and banks. The researcher confirmed the successful adoption of EPS requires universal acceptance through investigation of barriers from an economic point of view. This can only be achieved through cooperation with existing stakeholders, such as telecommunications companies, governments, and banks, as corroborated by (Briggs and Brooks, 2011).

#### **6.2.2.2.3 Mutuality of stakeholders**

The concept of the mutuality of stakeholders have was reported by researchers such as Peha and Khamitov (2004, as cited in Teoh *et al.*, 2013), who sought to guarantee benefits that could be derived from the adoption of EPS.

Based on the perspectives of stakeholders, including consumers, telecommunications companies, banks and government, it emerged that certain conditions, such as the cooperation of a number of different stakeholders could play a significant role in effecting the adoption of EPS. This can be inferred by statement by the Director of Human Resources at the Libya Telecom & Technology Internet Service Provider Company, who said:

*In order to adopt an electronic payment system, it is necessary that there is cooperation between individuals companies, banks, and the government, which then encourages companies to provide infrastructure and encourage customers to adopt EPS in their transactions. (RES89, 40+)*

Another respondent also corroborated the argument that the mutuality of stakeholders is an important factor in the adoption of EPS. From a Libyan perspective, speedy uptake of online transactions using EPS will be enhanced through the creation of companies to manage Visa and MasterCard issuance, with collaborative support from banks. One stakeholder stated:

*Private companies, such as Visa and MasterCard, are expected to receive benefits from the adoption of an electronic payment system in Libya, and the banks should support these companies (Visa, MasterCard), encouraging customers, like individuals and merchants, and regulating the relationships between all government parties.(RES105, 30+)*

From among the stakeholders, the banks are the most likely to derive benefit from the adoption of EPS; or that is the understanding from a Libyan perspective. Some of these benefits include savings in the amount of time spent carrying out business transactions and savings in monetary terms. This can generate increased revenue for the banks. In essence, if all the necessary strategic frameworks regarding the adoption of EPS are put in place, the banks will be most likely to benefit. This view was expressed by a respondent when he said:

*.....there are many important points that should be considered, such as; firstly, cooperation depends on the role of the state and the extent of its support. Secondly, it is necessary for companies, banks, and the government to study the economic feasibility of EPS project adoption, what the opportunities are, the weaknesses, and the potential benefits of project implementation. Finally, banks are one of the most important*

*stakeholders, and most likely to benefit from this system, because of its role in facilitating the procedures of electronic payment, between customers and vendors. (RES90, 30+)*

Previously, some authors have asserted that sharing benefits and costs between stakeholders is a necessary condition for the deployment of EPS. For instance, Johnson and Lee (2006) reported that stakeholders can derive benefit from the adoption of EPS by taking advantage of the system. From the stakeholder perspective, the benefits and costs associated with risk relate to the successful deployment of electronic payments between consumers, merchants and financial organisations and infrastructure providers (Oh *et al.*, 2006, as cited in Raihan *et al.*, 2013).

From the above discussion the researcher was able to confirm an exchange of benefits to stakeholders, indicating that the benefits provided for each member of the stakeholder group must exceed the cost borne by the stakeholders when selecting adoption of the system. When adopting EPS, consumers bear some costs, including transaction fees, the time taken to sign and sometimes also the cost of participation. Traders wishing to use EPS as a means of collecting money from customers (for example, through the company's web page on the Internet) should apply an integrated EPS with regulatory processes, and this may also bear some investment costs.

#### **6.2.2.2.4 Internet cost**

The Internet offers the most efficient and fastest online channel to carry out electronic transactions. This helps make businesses globally accessible and offers some level of reliability. However, the high cost of Internet services can have a negative impact due to the poor level of access among potential users. This in turn affects the benefits of



service providers, such as the Libya Telecom & Technology Internet Service Provider. This is largely due to service providers running at a loss if there are insufficient subscribers to access internet resources. The Libyan government can also play a role by subsidising the cost of internet access and increasing competitiveness among service providers with a view to expanding access to users. On this note, a respondent stated:

*The cost of Internet services in Libya is higher compared to that in neighbouring countries. As a result, few people / families can afford to use the Internet to perform online shopping. (RES112, 40+)*

The Director of Administrative Affairs at the Almadar Aljadeed Mobile Phones Company argued that the high cost of Internet access related to Internet service connection charges and associated subscription tariffs, but suggested that other avenues could be explored to take advantage of the E-payment system. He said:

*Internet prices are still high, but with an E-payment system it is possible to rely on other means, such as mobile phones. (RES113, 30+)*

But the head of web service department at the Libya Telecom & Technology Internet Service Provider claimed that the hosting fees for websites with sufficient bandwidth were within acceptable margins, as compared to the price of using the Internet itself:

*Yes, prices are reasonable for hosting websites, but the prices for the use of the Internet are still high compared to the common citizen/ Libyan's income.*  
(RES110, 20+)

The arguments above are also in accordance with the findings of Mahadevan & Suardi (2012), who stated that lack of an adequate infrastructure and the high price of internet

connectivity in most developing countries is responsible for the low adoption rate of EPS.

#### **6.2.2.2.5 Marketing business**

In the course of this research, a trend was observed, whereby the majority of telecommunications companies are more concerned with the overall intentions of consumers regarding the adoption of online transactions. To this end, it can be safely argued that establishing solid marketing business awareness, can, to a great extent, influence the adoption of EPS decisions and payments via the Internet. For example, the director of business administration in Libya Telecom stated:

*In terms of any company, if they adopt EPS, they will do so over the longer term, until they legalise the regulations for online transactions.*

*This depends on the spread of business awareness among them, and reduces resistance. (RES92, 30+)*

Additionally, authors including Guttman (2003, as cited in Kumaga, 2010), Kalakota and Whinston (1997) highlighted factors that could hinder the user's experience regarding the adoption of EPS. Briggs and Brooks (2011) argued that the role of regulatory bodies in the design and development of an effective market is necessary for the development of electronic payment systems in Nigeria, stating this was a key issue. In recent times, the Nigerian government has reported the development of a payment system by stakeholders, in particular financial institutions; while regulatory bodies have played negative roles (p.3). From the above discussion the researcher identified some of factors including marketing strategy, publicity, the reputation of the bank's anchoring a system of trustworthiness for the company deploying the system, the background

technology behind the system, the comfort of the user, and the ease of use, especially as it relates to user interface.

#### **6.2.2.2.6 Feasibility studies of EPS adoption**

It is important to carry out a feasibility study, as this is a factor affecting the acceptance and adoption of EPS. The purpose of a feasibility study is to ascertain if the EPS is economically fit for purpose, with respect to its design, implementation, testing, integration, maintenance, and optimisation. The widespread implementation of EPS across Libya could serve as a basis for its acceptance. Important feasibility factors would include cost benefit analysis, market share and availability of necessary requirements, which would then all assist in the adoption of EPS (Nasri, 2011; Turban *et al.*, 2000).

An important factor highlighted by a member of staff at the Libyana Mobile Phones Company, regarding the need for feasibility study before full scale implementation of an EPS, pertains to the possibility for a potential change in the financial situations affecting telecommunications companies. This is important because a deteriorating financial situation could affect the implementation of EPS. For example, were the telecommunications company to experience loss of market share or consumers, or monopoly, these would then be important factors hindering the adoption of EPS. The following response from a respondent offers a clear understanding of the importance of feasibility factors:

*Before adopting / implementing EPS in Libya, the companies involved must clearly assess economic feasibility, identify the advantages and*

*disadvantages, in order to avoid problems that may arise, and to insure successful EPS implementation. (RES94, 40+)*

The Director of Information System Management for the Libyana Mobile Company agreed with the previous respondent, when he observed that to embark on feasibility studies regarding the adoption of E-payment system is an essential precursor to the full implementation of an EPS project. In addition, the implementation plan should be specified, evaluating the capability of companies before the overall project execution. For example, some responsible individuals argue that:

*Telecommunications companies must provide a suitable social and economical environment for E-payment, before starting the use of electronic payment through the use of mobile phones. Furthermore, the Libyan population must have an adequate level of education, if they are to be able to follow / adapt to this new technology, and at the same time measure companies' ability to adopt the system. (RES95, 30+)*

The factors presented above are in line with findings presented in other related works. For instance, Nasri (2011), and Turban *et al.*, (2002), reported that the implementation of EPS must be done following evaluation of the economic situation regarding its design, operation, maintenance and upgrade, before final acceptance is ascertained. The authors also concluded that acceptance and widespread use by consumers are essential elements of economic feasibility. The success of electronic banking services is being restricted by the problem of technological feasibility. That is, the extent to which technology (bandwidth availability and information reliability, tractability, and security)

will be able to exponentially sustain increasing demands worldwide (Dahlberg *et al.*, 2008) as cited in (Harris, 2011).

Therefore, the researcher affirmed that before telecommunications companies start to perform a project or a plan to implement EPS, a variety of dimensions should be identified to estimate the plan's capability. In other words, EPS feasibility studies, prior to the adoption of EPS, are crucial for uncovering the strengths and weaknesses of all current payment systems; they can help decision makers to measure the benefits of adopting such a system.

#### **6.2.2.2.7 Withdrawal control**

People manage their bank account(s) in different ways, and so different types of control over such accounts can be put in place. Some people give consent or approval to one of their friends or relatives to manage transactions on the Internet, while others manage their finances independently. For the user of online payments, it is noteworthy that can exercise control over their accounts and expenses via online banking services. One of the respondents who was asked about the withdrawal control factor, claimed that the main issues pertain to how to control the online payment process when using the debit cards or credit cards, since this is associated with their ability to regularly manage accounts, and exert greater control via the Internet. For example, the director of a business department at the Libya Telecom Company stated that;

*Using a debit card means that the money is in your account; preferred standard of living will affect how much you spend. If you consider standard of living, the standard and quality of life will effect what people need and how they manage their accounts. (RES92, 30+)*

The point above regarding the withdrawal control factors emerged from the respondents' answers, which are consistent with what is reported in previous literature. A consumer can control their expenses by withdrawing money following electronic access to a source website (a bank may issue electronic cash or the issuer may be a private vendor, such as PayPal) and provides proof of identity, such as a digital certificate issued by a certification authority, or a combination of a credit card number, and a verifiable bank account number (Shittu, 2010, p.54, as cited in Wisdom, 2012). Therefore, the researcher can confirm that people can control their expenses by withdrawing the amount they need and can then effectively manage their accounts. In addition, the standard of living for each individual in the Libyan context effects how much the person might spend. For example, if individuals consider their standard of living, the standard of their quality of life will effect what those people need and how can they manage their accounts.

#### **6.2.2.2.8 Islamic banking**

The recent development of an EPS to support online banking in Islamic contexts generates unprecedented challenges; these are affected by Islamic rules and legal dilemmas. The primary concern of many respondents, in the Libyan context, was that the introduction of EPS within the banking system should comply with Islamic financial rules. This also has an impact on the use of debit and credit cards.

To assist Islamic banking providers to manage EPS implementation while observing Islamic finance principles / rules, one of the respondents highlighted a number of relevant issues, including the Islamic banking rules, terms and conditions and methods of payment. He stated that:

*The banks have to provide customers with a simpler, easier and safer E-payment system to use, and above all easy accessibility to the Internet. They should make sure that a minimum standard exists, so that people will be willing to use their new payment system with Islamic financial rules. (RES95, 30+)*

A director of human resources agreed, adding that the telecommunications companies must follow the Islamic financial rules in their transactions:

*In this respect, the Libyan government should do the following; Firstly, entrench a culture of payment, because people trust the government more than the companies; secondly, train Libyan citizens to use EPS through multimedia, and create awareness of potential dangers related to the use of this new technology; thirdly, follow / abide by Islamic financial rules when companies are adopting an electronic payment system. (RES89, 40+)*

The Director of Islamic Banking at Republic Bank agreed, supporting the previous respondent's views and adding:

*High class / high standard citizens (high income citizen) would not mind their expenses being regulated or monitored through their debit and or credit cards. However, they are not ready to use these cards, because they do not follow Islamic financial rules and regulations, related to interest in general, and particularly those requiring interest to be paid on transactions. (RES100, 50+)*

Based on the findings in this research, and the information gathered from past work, such as Chong and Liu (2009), Council of Islamic Bank (2005) and Haron (2001), it has been observed that the inclusion of Islamic banking principles based on Islamic Shar'ia Law play a significant role in the development of the economic situation in Libya. For instance, Hamed and Berger (2012) reported that the implementation of Shar'ia compliance is seen as an important factor in Islamic banking, as this can have an effect on the use of debit and credit cards. However, a Shar'ia compliant E-payment system would be an important consideration, not just for Muslims in Libya, and in other Muslim countries but also those living in non-Muslim societies worldwide, that would also benefit the national economy.

#### **6.2.2.2.9 Competition**

The findings of this research revealed that, the lack of EPS adoption may also be attributable to the lack of competition between the telecommunications companies and Internet Service Providers. Competition gives consumers more options, allowing them to choose between companies and select offers that most meet their needs. This includes a best quality service, more secure transactions, and Internet accessibility with low pricing. For example:

*Foreign companies, by adopting electronic payment systems invest in infrastructure (Internet), to have their businesses online, enabling country's to experience economic growth / progress.(RES99, 40+)*

In the same vein, another respondent, reporting from an organisational stance, argued that the revolution of the 17th February played a significant role in encouraging international companies, especially telecommunications companies to become more



competitive. This was clearly stated by the Director of the Information System Management department in the Prime Minister's cabinet, who gave an example, explaining the impact of the revolution on telecommunications companies:

*The Revolution of the 17 February 2011, contributed to a change of mentality and concepts; such that projects were monopolized by certain companies due to the non-existence of open-competition between companies. Thus, I felt that the revolution would affect the adoption of digital projects, and the evidence is that the number of Internet users has increased following the revolution; therefore we can conclude that there has been a revolution in informatics. (RES102, 40+)*

Based upon the facts that emerged above, and the views stated in the literature review, such as by Chavosh *et al.*, (2011), competition between companies or banks can play a central role in both developed and developing countries, supporting the adoption of new technologies such as e-commerce and E-payment. Furthermore, the growing adoption of e-commerce within the economy has encouraged many banks to suggest payment services dedicated to electronic transactions, which has resulted in increased competition OECD (2006), Heng (2007), and Jackson (2006). Based on the above explanation the researcher sought to enhance the efficiency of payment services as an easier means of operating the economy. Therefore, competition and innovation are principal drivers for efficient payment markets over both the short and long term. In addition, competition between telecommunications companies can overcome the monopoly, which may turn affect these companies

#### **6.2.2.2.10 Standard of living**

To understand the meaning of the phrase ‘standard of living’, it is necessary to define its scope. Standard of living, as defined in the Investopedia dictionary is “the level of wealth, comfort, material goods and necessities available to a certain socioeconomic class in a certain geographic area” as cited in Gupta and Agrawal (2011, p.2). The standard of living includes factors such as income, the quality and availability of employment, class disparity, poverty rate, quality and affordability of housing, hours of work required to purchase necessities, gross domestic product, inflation rate, number of vacation days per year, affordable (or free) access to quality healthcare, quality and availability of education, life expectancy, incidence of disease, cost of goods and services, infrastructure, national economic growth, economic and political stability, political and religious freedom, environmental quality, climate and safety. Standard of living is closely related to quality of life (Ovat, 2012, p.129). Standard of living affects an individual’s ability to use EPS, based on the quality of their employment, income, education level, economic and political stability, etc. (Cvrilje and Ćorić, 2010). This means that personal income plays a significant role in an individual’s willingness to adopt an E-payment system.

The researcher found, based on responses from both types of respondents (consumers and organisational) that an increased level of standard of living, will eventually lead to a rise in the quality of education, cost of goods, income and political stability, etc., all of which can affect the attitude of customers and encourage them to adopt EPS. This is because their acquisition of knowledge enables them to change their way of thinking, thereby increasing their tendency to adopt such a system, as affirmed by (Ozkan *et al.*, 2010). This means that personal income level is significantly influenced by the

mentality of people toward the use of the Internet, and also increases their tendency to adopt a new technology such as EPS. In addition, electronic payment will provide the Libyan people with better access to services, which will increase and improve their overall standard of living.

It is observed, from most of the respondents' answers, as shown below, that peoples' attitude have a huge influence on their willingness to adopt online payment. This suggests that individuals estimate the amount of money they can set aside for their online transactions in order to keep pace with their standard of living. This behaviour directly affects consumer's attitude toward EPS, in that their way of thinking is differs completely from other people who manage their expenses differently with regard to their standard of living. For example, the impact of this factor is clarified through this consumer's answers:

*The standard of living of individuals plays a big role in decision making, relating to the desire of to adopt modern payment methods, such as the electronic payment system. This kind of impact is clear among certain classes of individuals, and depends on the level of a person's monthly income, their control over their expenses, and their internet purchase buying pattern. (RES94, 40+)*

Moreover, standard of living is influenced by economic factors, in terms of the level and the availability of employment (SMEDAN, 2009). This is evident from the response of the following respondent, who said:

*...standard of living will affect on how much I can spend. If you consider the standard of living, the quality of life will effect what people need and how they can manage their accounts. (RES92, 30+)*

Another respondent from consumer level added:

*The capital level per inhabitant plays an important role in the advantage obtained from using the Internet, especially when price is considered unreasonable compared to other options. (RES106, 20+)*

The consideration of standard of living appears to be a novelty of this research, as it emerged as a new factor from people's responses. Based on a recent journal paper, the researcher introduces standard of living as a new factor contributing towards the adoption of EPS (Elbasir & Howley, 2013). In fact in the Libyan context, living standard was not particularly relevant as one of the economic factors affecting the adoption of EPS. This fact is a further contribution of this research. In addition, the novelty in this work lies in the fact that key findings were based on the use of grounded theory analysis, emphasising the perceived benefits of the adoption of EPS in the Libyan context, as discussed in Chapter four.

Having explained the open coding process from an organisation's perspective, regarding economic factors, the next section (and its subsections) will detail the open coding analysis based on the organisational perspective.

### **6.2.2.3 Socio-organisational factors**

There are some factors revealed by respondents from telecommunications companies', regarding their perspective toward EPS adoption. A respondent mentioned two such factors, namely staff experience and staff awareness. Through employment of an open

coding process, it appears that these factors have an impact and influence on the respondents' attitudes toward the adoption of EPS. These influences will be explained in the next section.

#### **6.2.2.3.1 Staff experience**

Discussion with staff with international experience regarding the use of EPS outside Libya has suggested that the use of EPS for online transactions is easy to understand, as the process is relatively simple; this encourages consumers to adopt EPS for online payment. For example, the Deputy Director of the Ministry of Telecommunications and Informatics said:

*.... I used it a lot abroad and I experienced no problem like the ones I face whilst using my card for online transactions within the state. In fact, advanced technology is facilitating the process of E-payment system abroad. (RES104, 50+)*

The low level of experience among many respondents, who are stakeholders in Libya, is attributed to the low level of awareness of the use of Internet as a method of online transaction to buy products. Thus, Libyan EPS users are less experienced compared to other EPS users outside Libya. Due to this lack of experience, some members of staff are also reluctant to support the adoption of EPS until the telecommunications companies provide simple to follow information facilitating the procedures for adopting EPS. For example, the following respondent pointed out the importance of practical experience with the use of EPS:

*No, I have used it before; but there is a lack of EPS services in Libya, which does not allow me sufficient experience when dealing with online*

*transactions... now we citizens are facing many difficulties obtaining bank cards. The banks are favouring only businessmen or businesswomen, who have in their view more experience using the Internet and are more suitable users of EPS. (RES94, 40+)*

The views expressed above are further buttressed by two respondents who have had the opportunity to use their debit cards (issued from two different local banks (i.e. Amman Bank and Commercial and Development Bank)), to make payment via the Internet for hotel bookings and other online transactions, using their company address in Libya to receive delivery of their products.

*Yes, I have a debit card issued by the Amman Bank and Commercial and Development Bank, and these cards allowed me to make a hotel booking outside of Libya. I have experience enough to use EPS locally, if the country adopts it. (RES296, 40+)*

Many respondents suggested that the remainder of the local banks in Libya need to learn from the experience of other banks, such as the Amman Bank and the Commercial and Development Bank, with a view to ascertaining the associated benefits that comes with the adoption of EPS. This apathy on the part of those banks that are yet to embrace the use of EPS is attributed to a lack of cooperation with banks who have adopted EPS.

This notion is echoed by one respondent who said:

*Yes, I have Visa card and a MasterCard from the Amman Bank and I used both of them inside and outside Libya for hotel bookings for instance. I can state that we are lucky and can benefit from the experience of Amman Bank when dealing with online transactions, which other*

*financial institutions do not have the need to establish a system. (RES100, 50+)*

This response supports the previous respondent:

*Yes, to book a hotel outside of Libya, because I have got a debit card from Amman Bank and I hope that the rest of the Libyan banks will benefit from the same experience of Amman Bank, and create the conditions for their customers to benefit from the same type of system. (RES102, 40+)*

The assertions expressed above further confirm the reports in previous studies mentioned in the literature review. For instance, Hernández *et al.*, (2010) stated that frequent Internet users, either consumers or organisations, have sufficient experience online to engage in online transaction. Moreover, Abrazhevich in (2004) investigated the relationship between user experience, e-commerce and EPS in the context of real time use and usage over a given period, and established that user experience has a huge impact on the use and adoption of EPS. Additionally, researchers including Guttman (2003) and Egger (2003) have reported that user (staff or consumers) experience regarding the adoption of EPS can be influenced by various factors, such as marketing, publicity, the reputation of the bank, trust of the company's operating the system, the technology behind the system, and the ease of use of the user interface.

The researcher considered that the influence of attitude upon intention to buy online decreases as users acquire more products via the Internet. This is because more experienced user's base their behaviour more on their experiences than on attitude. The results reveal that previous experience with the Internet is important for both initial and

repeated purchases, as it allows users to feel more confident when interacting with telecommunications companies' websites.

#### **6.2.2.3.2 Awareness**

This factor involves highlighting the importance of adopting EPS by increasing awareness among staff of access to useful and necessary information. Lack of awareness affects the willingness of telecommunications companies' staff to develop an E-payment system, since they are unaware of the benefits that come with the adoption of EPS. This suggests that if telecommunications companies were to put an effective plan in place to increase awareness of EPS among staff, then their likelihood of convincing additional people to use them would increase. One respondent stated:

*It is necessary to provide and expand awareness among traders, individuals and all stakeholders. In this way, awareness will spread among all individuals, helping the government to adopt this system.*  
(RES100, 50+)

Another respondent affirmed that increased awareness among staff could influence EPS adoption, by saying:

*I have some experience dealing with the Commercial and Development Bank. In this institution the service has improved, because they contribute to educating people, in addition there exists an agreement between the Almadar Aljaded Mobile Company and the above mentioned bank, to provide an E-payment service.* (RES101, 20+)

The researcher found, through the responses from one interviewee, that awareness among companies' staff members could be increase by rewarding them; including



presenting special benefits or bonuses to them, offering them free training courses when they choose to adopt EPS. This is clearly indicated by the response from the head of the Libyan central core network Telecom and Technology Internet Service Provider Company, he affirmed:

*Providing additional features to electronic payment system users, will be more effective / attractive than giving cash to encourage them to adopt the electronic payment system. (RES90, 30+)*

He added:

*Individuals should be encouraged by the government to provide a special service, in order to encourage them to buy online using E-payment system. (RES90, 30+)*

In addition, by comparing the responses of respondents and reviewing the literature, Yaqub *et al.*, (2013) claimed that the reason for the slow adoption of E-payment in Nigeria is a lack of awareness of the benefits of the system. Furthermore, the report issued by BNM (2010) confirms the effect of lack of awareness on the availability of E-payment facilities (e.g. security concerns and preference for cash) as causes for not adopting E-payment. Consequently, it was found by the researcher that when aiming to improve the functioning of online transactions it is important to develop an understanding of people and increase awareness of their roles by ensuring that transactions are not misused. Thus, these findings are consistent with the previous literature which confirms the impact of awareness and experience on the adoption of EPS among potential users.

### 6.2.2.3.3 Resistance to change

In general, people act in accordance with their impression of expected results in cases of new or changed practices in the context of business. If they see a threat to their current practice, they may react with opposition and resistance. Therefore, when a number of functions are made available on the Internet, employees can become afraid of losing their jobs, which leads to little enthusiasm for the application of EC (Dakela, 2011). This in turn will generate more concern among stakeholders, about increasing awareness among staff before EPS adoption. This is evidenced through the response of the following respondent;

*Provide the service in an easy and convincing way, through: firstly, advertising, they have to tell people and show them how the system works. Secondly, convince people to buy without cash and remove all barriers to E-payment. Thirdly, run an awareness campaign, educating people via the media. (RES104, 50+)*

The Director of Business Commercial of Libya Telecom and Technology Internet Service Provider Company recommended that his company reduce the resistance to change, by adopting legislation and regulations for online transactions. For example, in the following excerpt, the respondents suggested important procedures that could be adopted to assist in reducing resistance to change, as it affects EPS adoption; he said:

*In terms of legislation, it will take a long while to see any legislation being put in place, with regard to online transaction. Therefore, companies will have to be patient, before seeing it happen. Further, it will depend on the effort put into creating awareness among staff and*

*customers of the benefits of EPS, and the necessity to reduce resistance to adoption of this new technology. (RES92, 30+)*

In addition, during interviews with different stakeholders, it was found that managers who have experience can reduce resistance to EPS adoption among staff. This included, for example, minimising the risk of system failure, reducing or avoiding the problems faced by system users, and advocating an aggressive marketing strategy (i.e. the establishment of a strong marketing department), in the hope of convincing people of the benefits that attend the adoption of EPS. For example:

*The banking system should have administrators who are willing to introduce an electronic payment system, with government support. In addition, a marketing strategy should be activated in the banking sector, persuading customers of the importance of new technology to households, businesses, and the country as a whole, finally raising awareness through an aggressive marketing strategy. (RES99, 40+)*

The respondent's answers have been compared with those found in the literature and no contradictions were found between what respondents had said and what has been reported. Worku (2010), for example, argued that the resistance to changes in technology among customers and staff is due to: Lack of awareness on the advantages of new technologies, lack of trained employees in organizations, individuals being resistant to new mechanisms of payment, and fear of risk taking. AlGhamdi(2012) stated that some barriers were encountered in the rapid implementation of e-businesses in the market of Saudi Arabia, due to the lack of online transactions, shortage of employees' skills for implementation, and adoption of e-business systems. The

researcher affirmed that it is clear that lack of awareness among staff will have a negative effect on their willingness to adopt EPS, leading to a lack of communication between the stakeholders and consumers. In addition, resistance to change has increasingly been prominent among organisational dynamics, and when resistance is from staff this can cripple an organisation.

#### **6.2.2.3.4 Ease of communication**

The lack of communication between consumers and telecommunications staff was revealed by this research, and was mentioned by many interviewees. The lack of convergent interests between them, i.e. possessing the ability to understand consumers' need and to avoid poor quality of communication, affect the relationship between companies and their customers (Harris, 2011). The existence of poor communication is also attributable to staff being unaware of the importance of communication as a significant factor which can lead to consumer satisfaction and increase their willingness to ask for more services, such as EPS (Sumanjeet, 2009). For example, the following respondent recommended some steps to follow to overcome the lack of communication between stakeholders; he mentioned:

*Lack of a new banking reality in Libyan society, the common Libyan mind-set, is the reason why these institutions would rather deal with their customers using traditional banking methods; and to overcome this problem the banks should; Firstly, Spread Awareness of new banking methods such as electronic banking systems. Secondly, advertise these new technologies with free training delivered online and onsite. Thirdly, change the way they communicate with customers (Go to consumers and explain to them the benefit of the system - Send out leaflets explaining*

*EPS and how to use it. Fourthly, provide more ATMs in different areas around the country. Fifthly, increase security around ATMs (CCTVs, Private security guards, etc.)(RES99, 40+)*

The defects in communication strategy have affected staff's skills. Effective communication on the part of the staff is an essential requirement to ensure drive toward the successful adoption of online payment services. This opinion is echoed by respondents, who stated:

*The propaganda campaign expressing the advantages of using E-payment services, should be clarified, so that everything is clear from the outset. Hence staff should speak about EPS, highlighting its importance and the advantages gained by using this service. (RES296, 40+)*

Effective communication does not occur naturally; bank staff need to take the lead and make it happen. Even for consumers speaking the same language, things might be difficult, because they have different educational levels, and are from different cultural and religious background, although Islam is dominant. Moreover, staff expectations, determination, and understanding of EPS adoption may also lead to problems at initiation with regard to communication, motivation leading to staff to work harder to solve issues, finding different methods to deliver better communication, address consumers' needs and point these out. One staff member said:

*When a customer faces problems, such as being unable to contact the company or e- service provider as he wishes that will be a source of a problem and become a big issue. In fact it creates conflict, causing these customers to become reluctant to adopt any type of system advertised or*

*implemented by these companies; especially electronic payment systems.*

*(RES94, 40+)*

Based on findings from previous studies, interesting findings have emerged in line with the current research. For instance, Harris (2011) submitted that the level of usage of EPS increases for every additional increase in perceived functionality. Above Wu and Chuang(2010) argue that most individuals exhibit a strong aversion a new technology, in particular if it requires that they need to acquire a new set of skills to make it accessible. Therefore, the researcher claimed that simplicity in facilitating online transactions, flexibility, and ease of use, are considered to be essential business needs that can make the adoption of EPS easier, faster, and more accurate compared with the traditional cash payment system.

#### **6.2.2.3.5 Cooperation with existing entities**

Many respondents consider lack of cooperation with external entities to be another factor leading to concern, since this can hugely influence the adoption of EPS. Cooperation between banks, governments and telecommunications companies is an interesting requirement noted by the researcher in reference to the adoption of EPS. Online payment systems will most likely be implemented and adopted by all, only if the different parties involved all agree to work together, to facilitate and increase the degree of trust between participating stakeholders. The following respondent highlighted their view regarding the importance of cooperation and collaborative support with existing entities as a factor that might affect EPS adoption, when he said:

*As Governmental support does not exist to achieve fair cooperation between all the parties, support could have helped to achieve and*

*measure benefits from the adoption the electronic payment system. In fact support from the government should ideally be in line with the-government service objectives that is to help the Libyan people. (RES196, 40+)*

The important points to note from the above, is that important information should be shared between all the relevant stakeholders in order to clarify the obstacles that threaten the adoption of EPS in Libya. Identification of such obstacles would assist companies in communicating the benefits that attend the adoption of EPS. In addition, all the participating stakeholders need to be aware of other factors that may include political, economic, social and technical issues that could influence or hinder implementation of the e-system. A manager at a telecommunications company stated:

*There must be legal legislation known to all stakeholders, and the factors affecting the development of the infrastructure should be identified. In addition, banks should be linked to each other to make them ready to accept the electronic payment service. (RES105, 30+)*

By identifying obstacles, and encouraging wider stakeholder engagement, stakeholders who are deriving benefits from adopting EPS will be identified. This could in turn encourage faster uptake rate of EPS. This is obvious from this respondent's disclosure, as stated below:

*I can see from my position as a deputy of minister for the communication and informatics ministry, that there are multiple stakeholders in Libya, who expect to attain benefit from the adoption of electronic payment system, such as banks and telecommunications companies, individuals*

*and the government and Visa and MasterCard companies. As far as I am concerned, many stakeholders might benefit from adopting the EPS, and they are as follows; Government, Telecommunications companies, and Banks.(RES104, 50+)*

The views expressed by the respondents above are consistent with those suggested in the literature, with respect to the adoption of EPS where researchers such as (Briggs and Brooks, 2011) claimed the best form of arrangement to work together to ensure the timely and cost efficient sharing of information is critical, and therefore will seek for and apply it. The regulation of this arrangement, aims to reduce uncertainty and divergence and to ensure the importance of maximum cooperation between stakeholders (p.5). Therefore, in this research the majority of the interviewees emphasised the importance of cooperation and effective stakeholder engagement as encouraging the adoption of EPS. In addition, EPS implementation may be expected to gain universal acceptability in the Libyan context through effective collaboration between institutions, such as recognised companies (telecommunications companies), governments and banks.

#### **6.2.2.4 Political and legal issues**

Given the necessary support on the part of the Libyan government, to ascertain either the positive or negative impact of adoption of EPS, was non-existent, it follows that the government does not necessarily have any plan in place to improve communications between its various organisations and other stakeholders (such as telecommunications companies, banks and Visa companies), although it operates a national payment system through the Central Bank of Libya. To this end, it could be safely argued that the



adoption of EPS is influenced by certain political and legal issues. Some of which are highlighted in the following section.

#### **6.2.2.4.1 Government's responsibility and political support**

The results of the current research established that the lack of political will and support might influence the adoption of EPS. In fact, the responses from respondents, such as company staff members indicate that the Libyan government has not provided the necessary assistance to support adoption, and neither is it helping or encouraging telecommunications companies and others stakeholders to adopt EPS. For instance, the Director of Central Strategies Studies at Republic Bank said:

*Whenever the government wishes to adopt EPS, they will take a firm and strong political decision, and make sure that everything is done right to activate the E-payment system. (RES99, 40+)*

This view is also supported by another respondent, who commented on how political will and support is critical to the adoption of EPS he said:

*It is supposed that the availability of political support for the adoption of electronic payment system is necessary in order to; firstly, direct families to control their expenses based on purchases' statistics. Secondly, legislate for E-commerce laws, which do not exist in Libya. Thirdly, monitor the rights of individuals by reviewing contracts for online buying and selling. (RES100, 50+)*

The important information gained from the above quotation, is that there is as yet no well-established relationship between government and key stakeholders in the EPS business. Even in those instances where such a relationship exists, it appeared to be

relatively weak, leading to discouragement and lack of motivation regarding EPS adoption. This assertion is further echoed by another respondent, who pointed out that:

*Of course, anytime there is a problem involving the seller and purchaser, these should be resolved by a third party. However, EPS has not yet implemented any legislation to deal with this. In fact any activity of this type (online business), requires legal statements, so as to resolve legal matters and protect customers' interests and privacy. Of course politicians should endeavour to ensure people's privacy is maintained, and that corresponding legislation that penalises online criminals, such as hackers, crackers, cyber-criminals, etc. is introduced. (RES104, 50+)*

Similarly, the Deputy Minister of the Libyan telecommunications and informatics ministry argued that the successful adoption of EPS will largely depend on the implementation of the E-Libya project (i.e. E-payment, E-learning, E-government etc...); he submitted that:

*.....to ground the rules as a government, build infrastructure and make Libya ready for any kind of online transaction, now we need to prepare ourselves to start e-Libya. (RES104, 50+)*

Another respondent further elaborated on the views of the Deputy Minister when he stated:

*Government support should exist; the country needs more support to achieve this big project related to EPS implementation in Libya. In fact, the country is expected to show greater support to the electronic payment*

*service, to help citizens believe and have faith in new technology, which in turn should be in line with e-government services. (RES196, 40+)*

The views expressed above are in line with what is documented in the literature; for example, the work of Vermaet *al.*, (2012), where the importance of political will and support, as well as governmental responsibilities toward the acceptance of new technologies, such as EPS was extensively discussed.

Another decision maker, from a mobile phones company, revealed that responsibility on the part of the government can be fulfilled through the creation of a new banking system, civil registry and civil state system; whereby, every citizen would obtain his national identity or national insurance number. This national number is then an essential element assisting in keeping track of all transactions, including government services and functions. The embrace of standard and unified identification parameters will simplify implementation procedures and increase transaction speeds, whilst facilitating the exchange of information between various government agencies. The civil registry system can assist the government to meet the requirements stated as central to achieving EPS adoption in Libya. This notion is highlighted by one respondent:

*In the past there was no governmental support, but now there are some indicators showing the support in the system in the form of a civil registry system, and Civil Status linked to the personal bank accounts for individuals possessing a national insurance number (NIN). However if this support had not been made available by the government, it would have been difficult to measure the real benefit of boosting the cooperation*

*between the enrolment procedures and the banks' provision services.*

*(RES88, 30+)*

Other researchers, including Verma *et al.*, (2012), Chau & Jim, (2002), echoed the views presented above regarding the influence of government / political support on the adoption of EPS, especially in other developing countries such as Nigeria. Additionally, Molla and Licker (2005) also argued that issues such as government support for organisations to adopt required technologies, information systems (IS), organisational readiness, and top management support are valuable when discussing factors that may encourage or discourage the adoption of ICT- initiatives, such as e-business payment systems, in the developing world.

#### **6.2.2.4.2 Instability political status in Libya**

The impact of political unrest in Libya on the attitude of organisational staff, and decision makers toward the adoption of EPS in the telecommunications sector is significant. This unrest was vocalised by most of the respondents, who described how the revolution of 17th February had impacted on their lives in general, and more specifically on the overall security of the online payment process. They argued that it was not clear enough or fair to them to make an assessment of the revolution's influence and give their comments at the present time, as it may take months (or even years) to sense the real impact of the revolution, not only on telecommunications companies, but on all the government sectors. This point was highlighted by the head of the human resources department in Libya Telecom & Technology Internet Service Provider Company, when he said:

*The impact of the revolution is not immediately clear, it was assumed that it would educate and develop the new government's electronic payment system culture and spread awareness [of technology] among the people. (RES89, 40+)*

The head of web services in Libya Telecom & Technology Internet Service Provider Company agreed that the revolution of February 2011 affected all the organisational systems in Libya, including the final contracts issued by the ministry of communication and informatics and international companies, regarding the development of telecommunications systems, as implied here:

*The revolution of 17 February affected all sides in Libya, and we hope it can contribute to the development of the telecommunications sector, and to respect for the opinion of Libyan citizens. (RES88, 30+)*

One respondent from the banking sector argued that the revolution had had a limited positive impact on the attitudes of customers and staff of telecommunications companies, when he said:

*The Revolution of 17 February affected several things in many ways, including the desire of many people to use the Internet. In addition, the political and government decision-makers have since thought about e-projects, including e-government. Thus, the revolution has changed many things for the better. (RES99, 40+)*

The researcher found that the revolution had influenced all Libyans, and especially young people, as it pertains to the use of the Internet and the adoption of EPS. In fact, the revolution has had a positive impact on the population, to the extent that the

understanding, desire and consideration they have for the Internet and its applications has increased (Miniwatts Marketing group, 2012). According to the Director of Business Administration at Libya Telecom & Technology, and an Internet service provider, stated that the percentage of Libyan people using the internet has increased seven times since the political unrest. This increase is largely led by educated people, and they influence their families and friends regarding the use of the internet and its applications, constituting a critical change in the overall mentality directed towards technology adoption. This was clearly indicated based on the response from the head of the Libyan business administration at LTT, when he said:

*Unrest is a situation affecting everyone from the EPS factors stand point.  
The revolution motivated a new generation of citizens, and new educated people. (RES92, 30+)*

The Deputy Minister of the Ministry of Communications in Libya corroborated the head of the Libyan Business Administration, saying:

*.....yes the political support is needed where everything starts, from the top of government, who can give /issue a permit to conduct transactions, knowing that customers will always support them. (RES104, 50+)*

The Head of the Central Unit in Libya Telecoms & Technology Internet Service Provider Company argued that, the effect of the revolution on peoples' attitude toward the use of the internet was quite significant. In other words, after the revolution, Libyan citizens had an increased desire to accept and use the internet, which makes them potential future users of EPS.

*Internet users increased ten times after the revolution, compared to the numbers of users before. In political terms there has been a significant development in people's attitudes, affecting their intention to accept the Internet if implemented or requested. (RES90, 30+)*

In the same vein, one respondent concurred with the previous respondents, thus:

*The Revolution of 17 February changed the extent of awareness among individuals, with the evidence that individuals were using the Internet. Therefore, the company is now seeking to provide more services by providing fibre optic Internet. (RES94, 40+)*

The emergence of the political unrest in Libya, and how this will constitute an integral factor in sensitising people regarding the adoption and usefulness of Internet applications, is another new finding that emanates from this research. This clearly demonstrates how, a situation that is supposedly harsh, constitutes an advantage regarding the embrace and continued adoption of the internet.

#### **6.2.2.4.3 Regulations**

One of the issues raised by respondents was the lack of new legislation and policies on e-platforms, creating a huge challenge in regard to the adoption of EPS. In the case of Libya as a country, and in particular the effect on telecommunications companies, the absence of legislation to safeguard online transactions hinders developmental procedures to enact security measures within telecommunication's websites difficult. This in turn makes it difficult for telecommunications companies to convince people to adopt EPS. Despite the advantages of such as savings in terms of time and effort offered

by adoption of the system, it has not yet been adopted because of the absence of legislation for e-platforms to regulate online payment transactions.

Most respondents commented on the necessity and importance of having requisite legislations to regulate and accelerate the adoption of EPS. The Director of the Department of Information Technology in the Prime Minister's office, mentioned how e-laws could regulate the adoption of EPS in Libya, and explained how the lack of such legislation affects the rights of individuals to protect their online transaction after the adoption of the system:

*Issuing laws and enacting legislation for the regulation of e-services by the government and the Ministry of Communications, should help to resolve matters affecting online transactions, because there is no law dealing with e-services including e-commerce.(RES102, 40+)*

The Deputy Minister of the Ministry of Communications in Libya further explained that EPS has not yet been adopted, and legal experts should be engaged to formulate laws that ensure the safety of people when conducting online transactions, and also to guarantee the protection for their privacy. With effective legislation from the government, electronic crimes could be brought under control. This is evident from the following statement by the deputy minister of the ministry of communications in Libya:

*....Of course, any time there is a dispute between sellers and buyers, this should be solved through a third party. EPS has not been implemented yet, and the legal experts should write laws allowing people to conduct their businesses online, and providing them with security clauses that protect their privacy. Of course, as politicians make sure people's privacy is*



*maintained / saved, we have planned to issue the appropriate legislation to penalise electronic crimes. (RES104, 50+)*

The head of human resources at Libya Telecom & Technology Internet Service Provider Company also corroborated that the availability of E-laws would play an important role in encouraging people to adopt EPS, saying:

*The government should enact laws that protect the rights of citizens, because people / individuals will be more inclined to select an electronic payment system project, only when they see / notice / aware of the government supporting the project. Then their desire / willingness / envy to adopt the e-system will increase. (RES89, 40+)*

It is clearly established, through the responses from the interviewees, that the existence of regulations and E-laws in Libya would make people feel safe and confident about adopting and promoting an electronic payment system. The lack of E-laws, policies and regulations in Libya has led to the absence of technical factors, such as the extent to which a website is secure. People are unwilling to adopt EPS when there are significant concerns for security breaches as clearly indicated by one respondent from the administration of information system at Libyana Mobile Phones:

*.....From the legal perspective, it should be clear that the citizen can get his money back in the event of electronic crimes. Should this not happen, citizens will be reluctant to adopt an electronic payment system. (RES296, 40+)*

Other respondents from the telecommunications companies argued that the lack of legislation and regulation in the field of EPS leads some to monopolise the Internet

service, preventing competition among different telecommunications companies. This was attributed to the absence of laws protecting the rights of individuals and competition, as mentioned by one of the respondents when he stated:

*Open other channels to generate more profits when businesses are dealing with credit card companies to avoid a monopoly, by providing laws that protect the rights of all stakeholders. (RES196, 40+)*

The Head of Strategic Studies in the republic branches in Tripoli clarified that competition is a solution to avoid monopoly, and one that should encourage or accelerate the adoption of EPS. As a result of the absence of e-laws, policies and regulations, barriers can be created, affecting the adoption of EPS in Libya. Providing solutions to overcome some of these barriers could promote investment in EPS, as pointed out by one respondent who stated:

*...the foreign companies, by adopting electronic systems, can operate their businesses via Internet, which in turn will ensure the country's economic progress. (RES99, 40+)*

When the researcher reviewed the extant literature, it was observed that Taddesse and Kidane (2005) submitted that the way and manner in which electronic payment is administered raises legal issues, such as jurisdiction. Legal and regulatory frameworks that build on trust and confidence in technical support are important issue that should be addressed during adoption of electronic payment systems. As was pointed out in a study conducted by Worku (2010), the lack of legal framework informing the adoption of E-payment in developing countries, for example, in Ethiopia, has affected the implementation of EPS. Ethiopia has not yet enacted legislation to manage electronic

payments and e-commerce concerns, such as the enforcement of electronic contracts and digital signatures. Similarly, in China, the lack of institutional transactions and trust related to the weak rule of law is a major obstruction to e-commerce and EPS (Jennifer *et al.*, 2003). In most of North African Countries, there is a lack of legalisation or appropriate laws regarding the deployment of EPS (Adam, 2008; Azab *et al.*, 2009).

In fact, the researcher affirmed, through the research findings, that EPS can increase the number of issues, questions and doubts regarding the legal validity of transactions conducted through electronic means and affect the legal impact of mandatory application in a legal environment based on paper documents. Those requirements, which are documented in current national and international laws regarding use of written documents and manual signatures in international trade transactions, are the major obstacles to the development of EPS at a global level.

In the sections that follow, the relationship between categories and the subcategories that have emerged in the open coding stage of the current research are presented.

### **6.3 Axial coding**

The process of axial coding analysis can be easier to understand when a paradigm model is implemented, as explained and discussed in section 5.4.2. The researcher determined which categories might be the important, and what axial coding needs to be elaborated on, based on the properties of each category as explained in sections 5.4.1, and 5.4.2. Six categories were extracted during open coding, which allowed the researcher to ascertain which the important categories were that emerged during axial coding. Hence, four categories were reported to appear at the axial coding stage:

customer attitude, the benefit of EPS adoption, organisation attitude and political issues.

The following subsection will discuss each category:

### **6.3.1 Customer attitude**

The first category, as shown in Figure 6.3-1, clarifies the ways in which the subcategories interact and are linked with each other, as well as what the categories are related to in reference to the axial coding analysis.

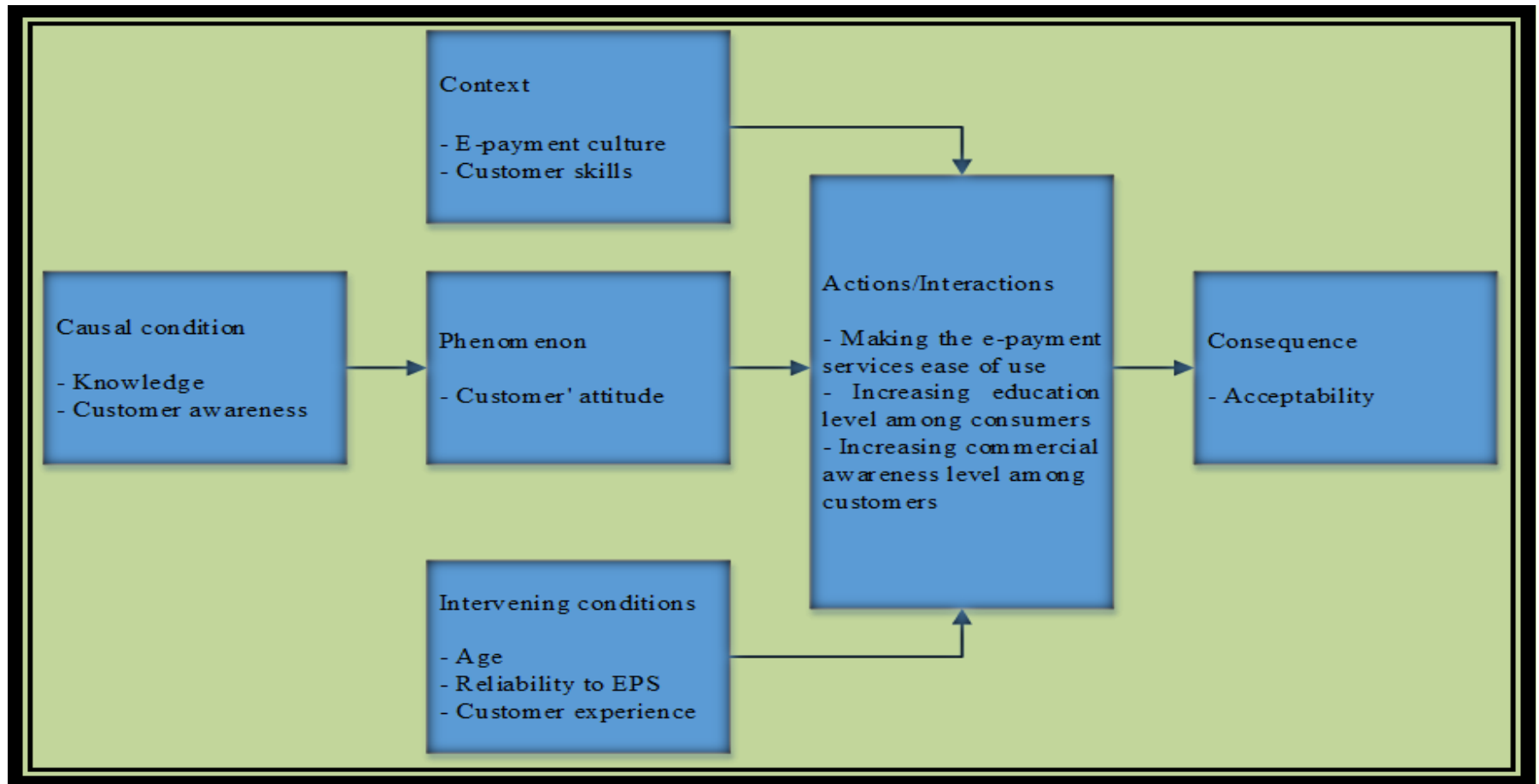


Figure 6.3-1 Axial coding (customer attitudes category)

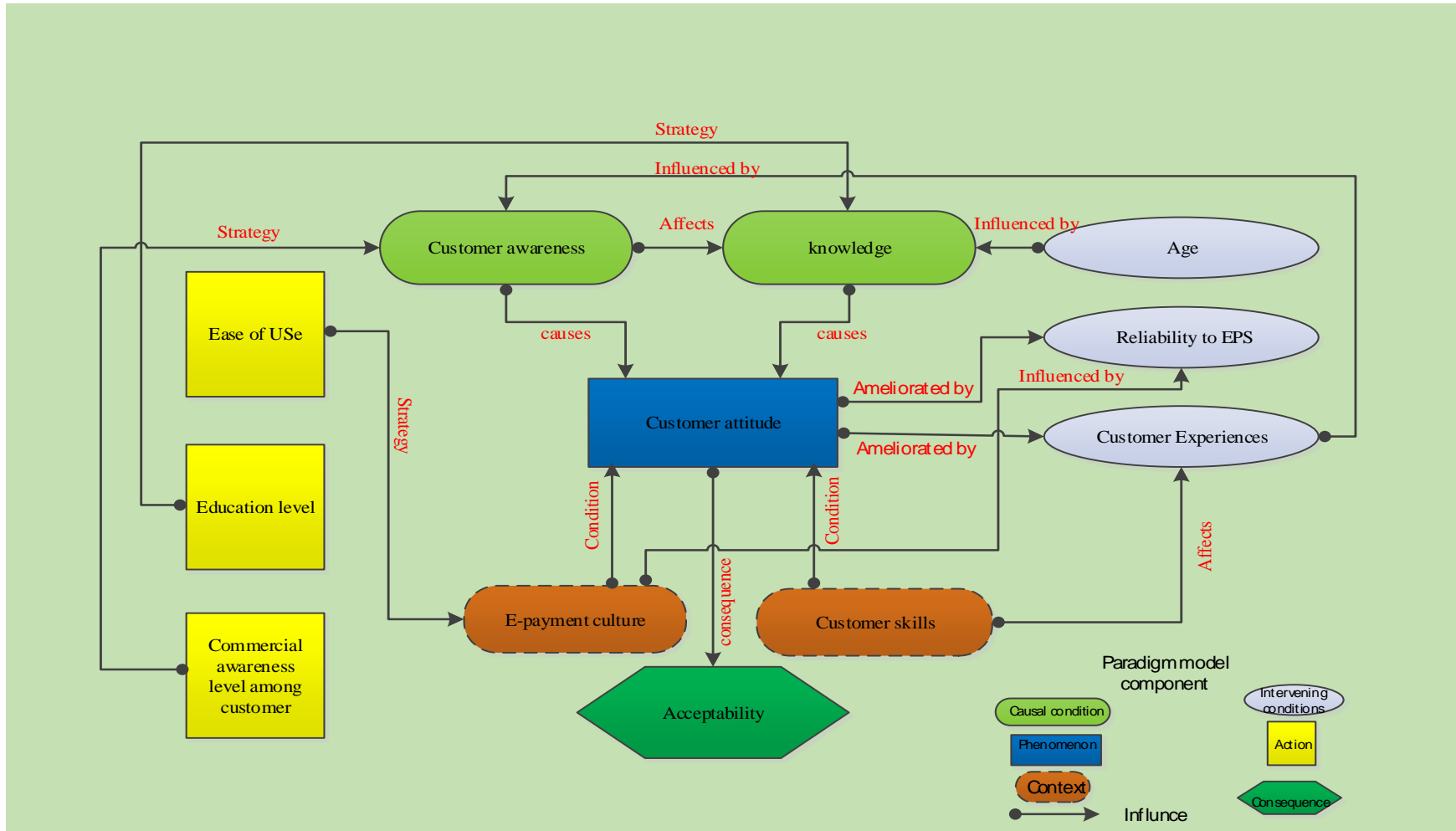


Figure 6.3-2 The relationship between the customer attitudes category and its subcategories

Figures 6.3-1 and 6.3-2 illustrate how connections are made between the 'Customer attitudes' category and its subcategories, or factors identified at the open coding stage. The paradigm model denoted a central notion to explain this phenomenon (Customer' attitude). The occurrence of the phenomenon was developed based on a certain set of conditions: for example customer attitude was chosen as a phenomenon affected by a set of events and conditions, such as knowledge, and customer awareness. This implies that the cause of Libyan customer awareness is linked to the level of customers' knowledge concerning EPS adoption. When the researcher made enquiries of the respondent about background information in regard to the use of EPS, and what EPS meant to them (i.e. what is the impact of awareness on their level of knowledge of the e-system), in order to help the telecommunications companies understand the problems they might face with EPS adoption. All the respondents confirmed that EPS adoption had been influenced by the level of awareness and knowledge they had. This attitude clearly emerged based on responses from consumers:

*One of factors, which can play a main role in EPS adoption, is disseminating awareness based on customers' knowledge level. (RES107, 30+)*

Respondent's attitudes could be impacted on by customer's desires and willingness to adopt EPS. This can be attributed to those respondents with adequate knowledge and sufficient awareness of EPS adoption and Internet usage, thereby influencing their attitude toward acceptance and adoption of such systems. For example, the following consumer's statement confirms this notion:

*Telecommunications companies would take steps to provide awareness among individuals, as many customers are dealing with the Internet as required. Therefore, from my point of view this will happen only when companies experience no difficulties in adopting EPS. (RES112, 40+)*

E-payment culture and customer skills form a background set of conditions related to customers' attitude, in which the availability of the EPS environment may have influenced customer attitude toward adoption of EPS. In other words, when a customer fulfils all the necessary requirements, this helps them make a decision regarding how they perceive the adoption of EPS. This can be inferred from the following statement made by a consumer:

*Neighbours, friends, or if Libya could provide the electronic payment service, in this case personal relationships would be affected by the use of the e-system. For instance by developing and or providing cards that could be used abroad. (RES93, 30+)*

Also the skill sets of customer's influences their attitude. Qualified customers with adequate experience and skills, can more readily appreciate the value of the Internet for carrying out online transactions on secured websites. For example, when the researcher asked how the customer's skills set can affect EPS adoption, one respondent from consumer level gave the following response:

*I have used my debit cards to buy products several times inside and outside of Libya using an international bank account, and sometimes I used my friends' addresses or the addresses of global companies such as DHL, FedEx in Libya, from where I would later on get my products. This*



*experience has made me more confident about using EPS without any difficulty. (RES110, 20+)*

It is evident from the above expression that the respondent possesses enough experience to feel confident using online payment. This experience will in turn improve his attitude toward the adoption of EPS for his online business, which may then effect his decision to adopt EPS when it is made available by telecommunications companies.

Overall conditions relate to the broader structure in which Action and Interactions have been established as factors with a bearing on this phenomenon, including age and reliability to use EPS. These conditions can be measured relative to a consumer's ability to use the Internet and then adopt EPS. The majority of the respondents believe that the age of individuals might have an influence on consumer's decisions to adopt EPS as a means of payment. On the other hand, consumer attitudes and abilities to use the Internet depend on their ages. For example, young people have an attitude, which differs from that of elderly people. Most of the respondents confirmed that young people are happy to adopt EPS, because they are more confident about using the Internet as a mean for online transactions. This was clearly demonstrated when one of respondents said:

*The Libyan population is comprised of 80% young people, who are in fact familiar with the internet; while 10% of the elderly are un aware of the online services such as online payment systems. (RES91, 30+)*

In addition, the system's reliability may also have impacted on consumers' attitude to adoption of the EPS. This is because, if they are aware that the website upon which the online transactions will be carried out is designed to appropriate standards and secure, then the marginal propensity to adopt EPS will be increase. This will, in turn, increase

the subscriber base and facilitate economic growth. This assertion is evident from the responses from the following consumers:

*Any application across the Internet will contribute to increasing the number of customers who believe that the adoption of EPS can help lift the national economy. The adoption of EPS will contribute to an increase in corporate income, by increasing the number of customers, and thus will contribute to economic growth in Libya. (RES11, 30+)*

Grounded theory is an action/interaction orientated method of building theory. In other words, action/interaction has a specific properties (Strauss and Corbin, 1990). There are specific indications in the data intended to direct strategies. These should have process, purpose and be objective - oriented, for example, focusing on ease of use of the EPS, and educational level to show a response to something happening and its effects on the associated phenomenon (i.e. customer attitude); any strategy and action taken is a response that might potentially affect customer attitude. For instance, if the usage of EPS is made easier, this would yield a positive result. In the context of the current research, the consumer can choose to decide to accept EPS when the entire functionality of the system meets their needs. This will encourage realisation that the use of EPS is relatively easy when applied to online transactions. This was evident when the consumer said:

*The electronic payment system will facilitate the payment process via the Internet without using cash payment and will also make services easier to use, whenever and wherever. (RES114, 30+)*

In addition, the level of education of the users of EPS emerged as an integral factor, positively affecting the attitude of customers toward the use of EPS. This is because the level of education has a way of encouraging potential users to appreciate the various uses to which the Internet can be put. This is evident among the younger population, given that the largest segment of the population in Libya is comprised of young people, most of whom are educated and can understand the advantages and benefits associated with adoption and use of new technologies, such as EPS. This is also very clear from the responses of several consumers, as below:

*Educated people, who understand the system, think positively. The main segments of Libyan society are aware of this service (EPS). (RES110, 20+)*

The rising education level among the Libyan people, specifically young people will help increase commercial awareness among customers. That means that educated people can understand the benefits of adopting EPS more fully than non-educated people. This implies that this segment of the population in Libya (i.e. educated people) will also influence their relatives, and friends by explaining to them the benefits of EPS adoption, in terms of increasing business awareness among people. This was apparent in one of the consumer's comments when he mentioned:

*Young people aged (16-45 years) constitute the largest group in Libyan society; there are also businessmen, and businesswomen who are interested in adopting this system. (RES111, 30+)*

All of the above factors will have an effect on successful EPS adoption and will in turn effect customers' attitudes, and their willingness to adopt practices which clarify the

impact of these factors. By applying a paradigm model, the researcher can establish how this influence could affect consumers' intentions to accept and adopt EPS.

### **6.3.2 The benefit of EPS adoption**

The second category, as shown in Figure 6.3-3, clarifies the ways in which subcategories interact and are linked to one another, and with the categories they relate to through axial coding analysis:

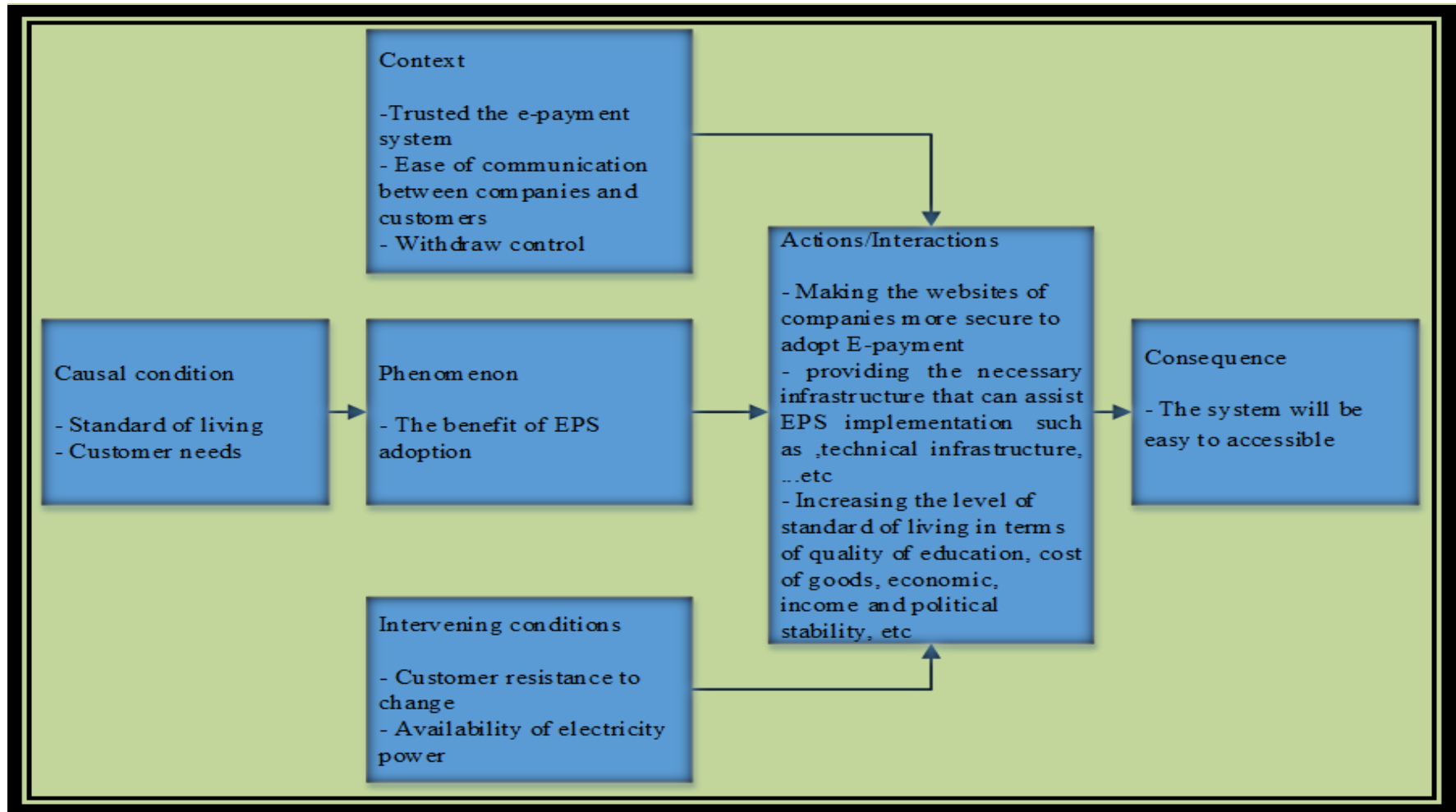


Figure 6.3-3 Axial coding (the benefit of EPS adoption category)

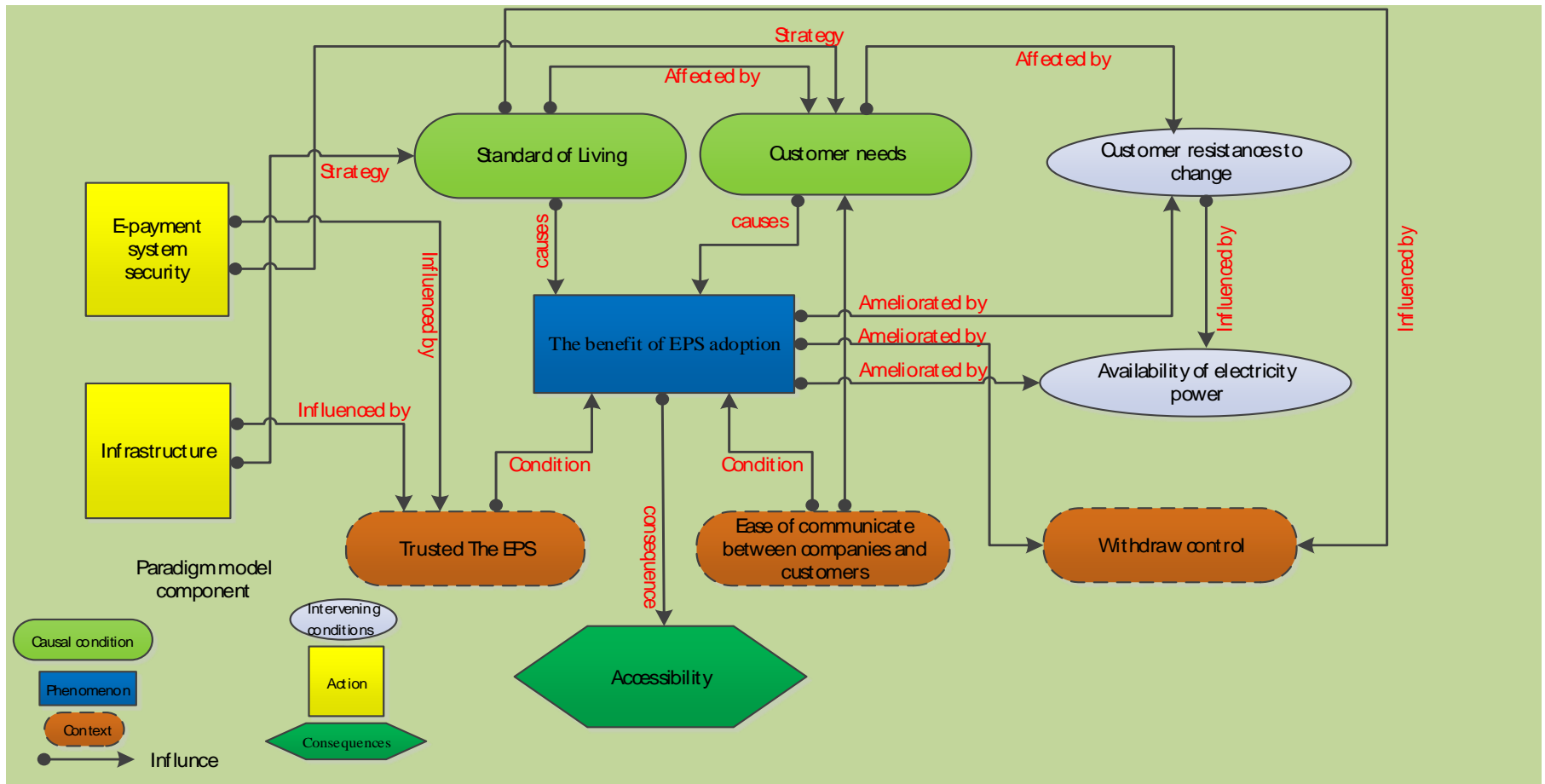


Figure 6.3-4 The relationship between the benefit of EPS adoption category and its subcategories

Figures 6.3-3 and 6.3-4 illustrate how connections are made between the benefits of EPS adoption category and its subcategories, or the factors developed in open coding. The central idea associated with this phenomenon, and identified in this process relates to the key benefits of EPS adoption, while fully applying the process followed in section 6.4.2.

This phenomenon was identified, because of the impact on customers' mentality when dealing with online payments and their desire, or need, to adopt EPS. It is possible to have more than one causal condition, as is the case in this category. Standard of living is a new factor that emerged to enrich the existing literature, with regard to EPS adoption (as discussed in more detail in section 6.2.2.2.10). This new factor played a significant role in terms of responses concerning the phenomenon. The increased level in standard of living, will eventually lead to a rise in the quality of education, cost of goods, economic, income and political stability, etc., all of which can affect the mentality of customers and encourage them to adopt EPS, because their acquisition enables them to change their mentality and access to the system. This means that personal income level will significantly influence users' mentality relative to the use of the Internet and also the adoption of new technology, such as EPS. This was inferred through the following responses from one respondent, who said:

*The level of per capita income plays an important role in the advantage of using the Internet, especially when price is considered unreasonable compared to other means. (RES115, 30+)*

The pressing needs of customers can also stimulate adoption of EPS. When EPS end users realise the abundant benefits associated with using EPS for online transaction, this

will increase their appetite for embracing all forms of new technologies available via the internet. More importantly, if those telecommunications companies responsible for bank rolling the EPS infrastructure can guarantee a high level of consumer satisfaction, this will go a long way to increasing awareness, and the mentality of potential users of EPS will improve considerably. This notion is described and echoed by one consumer who submitted that:

*One of the most successful methods for the EPS adoption is to meet the customer's needs. There are other issues related to technical matters, such as security / safety, and trust. Therefore, meeting these standards can confirm the stability of the system long term. (RES113, 30+)*

Trust (i.e. the extent to which the user has confidence in the implementation and overall adoption of the EPS) is another attitudinal factor that can influence users' adoption. Essentially, trust is a very important factor affecting consumers' mentality toward EPS adoption, as it pertains to the extent to which online transactions are secured, and also assesses whether proper crime reporting mechanisms are in place. The importance of trust is emphasised by one consumer who said:

*There is a fear that the consumer will fail to adopt EPS, due to the lack of secure websites. (RES91, 30+)*

The ease of communication between companies and consumers is another factor to evaluate; it is also crucial to this research. For example, if there is a lack of communication between telecommunications companies and their consumers, this may affect the mentality of consumers and would have the potential to disrupt their plans to adopt EPS. The level of credibility established between telecommunications companies



and their consumers, with a view to facilitating the use of such a system, anytime anywhere, can encourage customer uptake. Likewise, informing consumers of the benefits of adopting EPS can significantly increase the market share and profit. For example, one consumer affirmed:

*Ease of use depends on the availability of infrastructures such as the Internet, any time and everywhere the customer needs it, so as to stimulate the adoption of the electronic payment system. (RES116, 30+)*

In addition to the two factors discussed above, there is another important factor which is withdraw control. It is apparent that from most consumers' perspectives the mentality of consumers is directly related to their desire or willingness to adopt online payment options. In other words, individuals would then estimate the amount of money they might put aside for their online payments in order to maintain their standard of living. This estimation directly affects consumers' attitudes toward EPS. The impact of this factor is clarified by the consumer answers:

*The standard of living of individuals plays a big role in decision making relating to the desire to adopt modern payment methods, such as the electronic payment systems. This kind of impact is clear among certain classes of individuals who depend on the level of their monthly income and their control over their expenses, and buying pattern from the internet. (RES109, 40+)*

Further application of the paradigm model yielded a set of conditions linked to the phenomenon under study. One such condition is termed an intervening condition, which includes factors such as customers' resistance to change, and the availability of

electrical power. These factors are termed intervening conditions, because consumers may resist changing their current form of payment to embrace new forms of payment based on EPS. Rather than making payment in terms of bills, or the purchase of products through the EPS via the internet, payment is still made face-to-face by walking to the companies. This notion is echoed by a consumer who stated:

*It is useful to know the reasons for the individual resistance to a solution.*

*This is expressed in the questionnaires. (RES93, 30+)*

The availability of electrical power also plays a significant role among consumers in regard to EPS adoption. Thus when consumers wish to adopt payment, he / she will ensure that there is a sufficient electricity supply in the given area. In other words, the availability of electricity allows people to use the internet for online transactions via their computer, which is also powered by electricity. Availability of electricity is particularly important, as it ensures the safe and successful completion of online transactions. Lack of a constant supply of electricity might cause data loss which may in turn result in financial losses either on the part of consumers or companies. The importance of a constant source of electricity supply to power all the necessary equipment for online transactions was echoed by a consumer (i.e. a potential customer), when he submitted that:

*.....When the infrastructure and electricity supply are available 24/7, the process of purchasing online will continue. Thus, customers' attitudes toward EPS adoption as mean of payment will depend on the availability of electricity supply and the related infrastructure. (RES91, 30+)*

The extent to which the implementation of EPS is secure, and the availability of adequate infrastructures to ensure its constant and full operation are considered to be based on grounded theory. The phenomenon, considered from respondents' point of view, shows that response or feedback should be taken from telecommunications companies to build secured websites, to increase the level and standard of living in terms of the quality of education, cost of goods, economic, income and political stability, etc. This then can affect the mentality of customers, and provide the infrastructures necessary to complete the successful adoption of EPS. Therefore, if telecommunications companies handle these problems successfully, the mentality and attitudes of consumers will change in regard to EPS adoption. The following consumer suggested that safety and security are essential attributes of EPS implementation based on the consumer's statement:

*If the company adopts a payment service, it is supposed that they would provide a safe and secure system. (RES91, 30+)*

Another consumer added:

*The system must be provided in a simple and secure way, with the infrastructure made available. (RES108, 20+)*

The strategies put forward by the telecommunications companies regarding the adoption of EPS must be robust, so that they can address any implementation/use issues that may arise. In the context of the current research, it could be safely argued that if telecommunications companies have secured websites, and are able to provide the necessary infrastructure to assist EPS implementation, it will be easy for the consumer to access the system, and trust the online services delivered by the telecommunications

companies. A consumer mentioned the following, which corroborates the factors mentioned above:

*The telecommunications companies must provide the quickest means by which to access company's website, rather than walking or driving to their place of work, because the electronic payment system will facilitate the online transaction process. (RES110, 20+)*

### **6.3.3 Organisational attitude**

The third category, as shown in Figure 6.3-5, clarifies the ways in which the subcategories interact and are linked with each other, and which categories they are related to in the axial coding analysis.

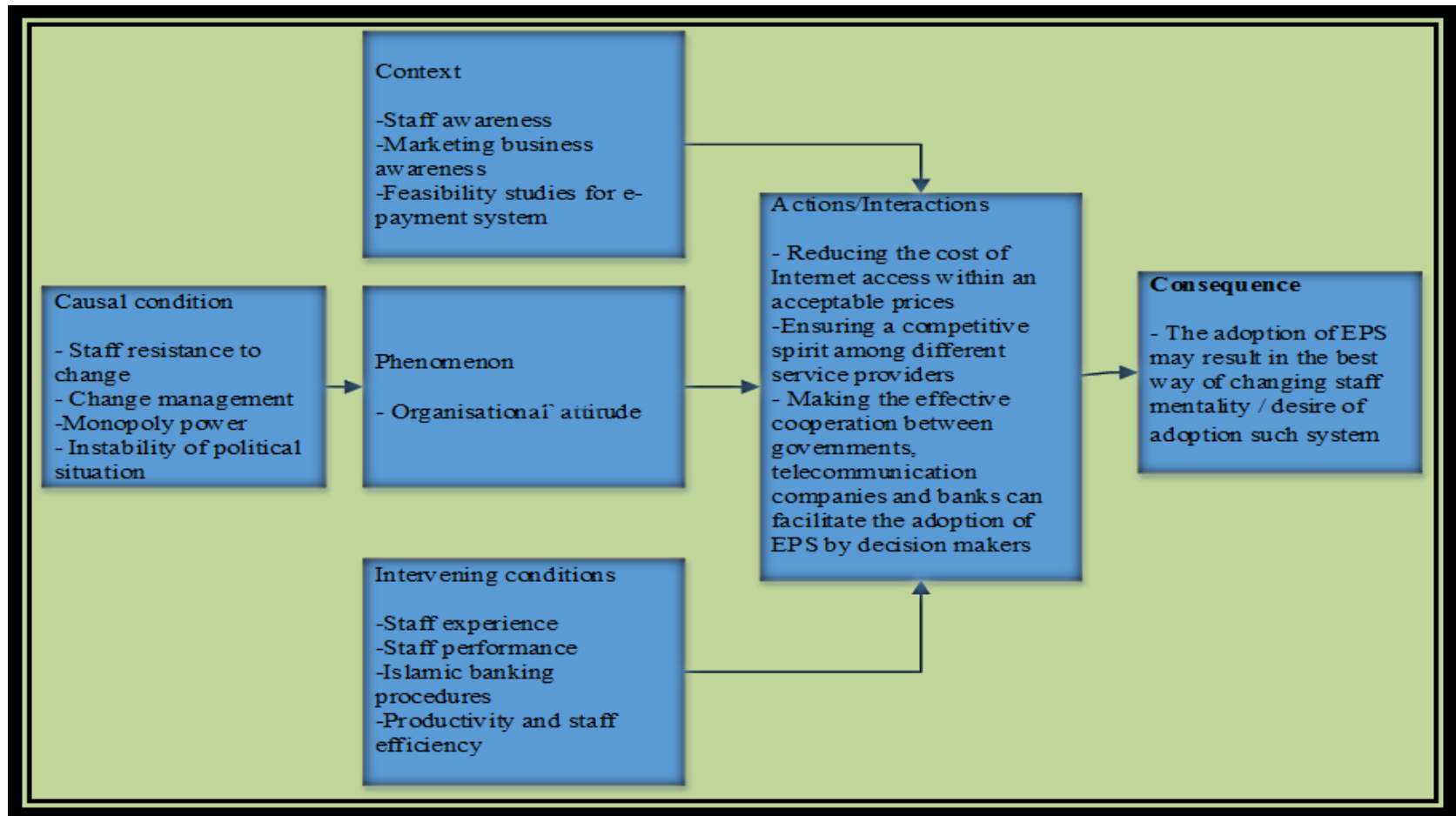


Figure 6.3-5 Axial coding (organisational attitude category)



Figure 6.3-5 and 6.3-6 illustrate how connections are made between the organisational attitude category and its subcategories / factors based on open coding. To identify the central idea (i.e. phenomenon), the researcher followed the same process based on the paradigm model, to define organisational attitude as a central category for this subcategory. This phenomenon was selected because of the influence it has on the attitude of telecommunications companies' staff members when dealing with online payment, and their concerns about the adoption of EPS in Libya. Factors such as staff resistance to change, change management, monopoly of power, and political instability, are attributed to a general lack of awareness on the part of participating stakeholders. To this end, the level of awareness regarding the advantages and probable disadvantages of the adoption of EPS in Libya must be raised. Increased awareness is likely to improve the overall attitude of telecommunications staff towards the adoption of EPS and would also help in identifying other bottle necks affecting the implementation of EPS. This view is expressed below, by two different respondents:

*In terms of any company, if they adopt EPS it will take much longer for them to legalise the regulations for online transactions. It depends on how awareness is spread among people to reduce resistance to change.*  
(RES92, 30+)

*The propaganda campaign - by stating the advantages of using the EPS service – must also clarify things so that they can explain it a way that is understandable for everyone from the beginning, and then speak with staff again about the importance of this service.* (RES296, 40+)

The Deputy Minister at the Ministry of Telecommunications and Informatics argued that training courses for staff could be adopted to increase awareness and reduce resistance to EPS adoption. He stated:

*If the infrastructure is made available, we will open a training centre, to give appropriate lessons to staff and make them aware of the system and finally how to implement it. (RES104, 50+)*

Change management is also chosen as a causal factor under the organisational attitude category. Management must also have a basic aptitude / knowledge to be able to play a key role in positively influencing the mentality of staff, by encouraging them to implement EPS. This means that management style should make a difference by encouraging staff, to team up with EPS adoption staff, considering all benefits are explained, and making sure adequate measures are put in place to provide consumers with maximum security measures. In other words, management should share all relevant information with staff, so as to make them more effective and efficient members of the EPS team. For example, the financial director of Libyan Telecom and Technology Internet Service Provider Company said:

*....directors play a big role in training citizens on how to use the system.  
(RES94, 40+)*

The same idea is also expressed and supported by the director of information system management, in reference to the role of change management, when he said:

*.....they have an influential role. If the administration is conscious of the adoption of the electronic payment system, this will play an influential role in company staff mentality / behaviour. (RES95, 30+)*



The instability in Libya has influenced telecommunications companies. In fact, the majority of the respondents confirmed that the revolution has affected the attitude of the Libyan decision makers, who were formerly planning to introduce and implement specific rules and legislation about infrastructure, to prepare Libya for online payment systems such as EPS. Hence, the Libyan government is considering development of an e-project such as e-Libya. This submission can be inferred from the statement below given by a respondent:

*The Revolution of 17 February affected many factors and changed several things, including the desire of many people to use the Internet. In addition, political and governmental decision-makers are now thinking about e-projects including e-government. Thus, the revolution changed many things for the better. (RES99, 40+)*

Therefore, in general the respondents agree that if the new government plans to adopt new technologies such as EPS system, then the managers and staff at telecommunications companies will become more aware and have greater trust in what the companies are providing. This suggests that the revolution of 17 February has led all Libyan sectors, including telecommunications, banks, etc. to develop and improve their services by adopting e-payment systems.

The particular context comprising a set of factors (staff awareness, marketing business awareness and feasibility studies), for EPS have been assumed as suitable to manage and handle the phenomenon with regard to staff responses, as shown below; lack of staff awareness has also influenced willingness to adopt EPS. In other words, telecommunications companies need to increase staff awareness of activities like

business marketing, with a view to increasing the benefits people, including staff, can derive from adopting EPS. Furthermore, management has to ensure that they work on changing staff member's attitudes and mentalities regarding the use of the internet as a means of payment via websites that are well secured. In this research, the following respondent clarified what he understood from staff / consumers awareness when he said:

*Lack of banking awareness within Libyan society is one of the reasons why people are still not aware of the existence of this new system for dealing with their bank, and to overcome this, management should do the following:*

- *Spread Awareness across the country*
- *Advertise more about this new Product*
- *Find simple communication methods to relate to customers*
- *Provide more ATMs*

He added:

*The most important need is to raise awareness through marketing, by offering more advertisements. This includes illustrating the services provided, such as online sales, explaining how to deal with the service, and what the requirements are that needed to be fulfilled before adopting an e-Service. (RES99, 40+)*

Also the director of Islamic republic bank affirmed that:

*It is necessary to provide expanded awareness among traders, individuals and all stakeholders. In this situation, awareness will spread widely*

*among all individuals, helping the government to adopt the system.*

*(RES100, 50+)*

Therefore, lack of marketing business awareness as regards EPS adoption among staff affected their attitude.

In addition, there is another factor associated with structural conditions, which can have an influence on the attitudes of staff regarding EPS adoption. This factor is a feasibility study for EPS. It is very important, and something that telecommunications companies need to be aware of, because it is crucial for the implementation of E-Systems, and can also serve as indicators of the benefits and advantages that the adoption of EPS can bring to a company. This was made apparent by one of the respondents, who said:

*Before thinking of EPS adoption, the company / management should undertake a feasibility study, including clarifying the economic feasibility.*

*In this way they can understand and comprehend the advantages and disadvantages, in order to avoid future problems that may slow-down or stop successful adoption of EPS. (RES90, 30+)*

Embarking on detailed feasibility studies prior to the implementation and overall adoption of EPS could yield several advantages. This will also help to put into perspective the benefits that come with the implementation of EPS and which help identify areas to be prioritised before embarking on wider coverage and spread. Carrying out a feasibility study will assist in measuring the level of preparedness of potential users, in terms of acceptance or rejection of EPS. In doing so, measures such as customer satisfaction could be ascertained quickly to help shape future directions for planning and expansion. A feasibility study could also assist in ascertaining willingness,

on the part of the government, in terms of their readiness to provide or ensure adequate infrastructural networks to facilitate the smooth implementation of EPS. Overall, feasibility studies can help reveal unforeseen circumstances impinging on the implementation and adoption of EPS. As part of the feasibility study strategy, the director of financial management and accounting at the Libya Telecom & Technology Internet Service Provider Company expressed his concern about the practical implications of EPS options, and their implementation as a payment method via the internet, when he said:

*The economic feasibility of using this system must be calculated and the costs of implementation / the costs incurred and the business benefits determined; therefore making a business decision for the company as a whole. (RES94, 40+)*

Another respondent from the department of information system management agreed, and shared the same view as the director of financial management and accounting in Libya Telecom & Technology Internet Service Provider Company, stating:

*It is necessary for companies, banks, and the government to study the economic feasibility before new system adoption; and, more importantly, what the benefits would be for the company once adopted. (RES296, 40+)*

There is a set of factors (staff experience, staff performance, Islamic banking procedures, productivity and staff efficiency), that affect the Action/Interactional strategies of relevance to the phenomenon, in the context of this research. One of these factors could pertain to the ability of telecommunications staff to adopt EPS. In fact, if staff possess the required level of experience and expertise to use such a system, as well

as a sound knowledge of all the security measures, put in place before carrying out their transactions online, this will go a long way to ensuring that online transactions are embraced. It therefore follows that staff experience, and awareness of their ability to carry out a transaction via the internet would influence attitudes and willingness to adopt and support new systems, since they would be more confident about using EPS. The immediate effect will be on simplifying the roles of staff, increasing their experience, their performance, and finally increasing the success rate for EPS adoption in telecommunications companies. The following respondent shed light on the impact of staff experience of EPS adoption when he stated:

*.....Of course, yes, I used it a lot abroad and there have never been problems like the ones I always experience in this state. [Access to] advanced technology facilitates the process of E-payment systems. (RES104, 50+)*

The director of the business management department at the Libya & Telecom Internet Service Provider Company agreed that experience play a big role in influencing the attitude of potential users of EPS. For instance, a user who has experienced the use of an online payment platform abroad will have realised the ease of use associated with this payment method, and would expect that such a system could be adopted in Libya. Essentially, when a user knows the direct benefits that come with the adoption of a new system, this then enhances their overall attitude towards such systems. This idea is captured in the statement made by the Director who said:

*Personally, yes, it was from that stand point; I used EPS on a regular basis to pay my bills, and it was convenient for the recipients as well as*

*for me. Using EPS is a solution that avoids headaches during transactions. (RES92, 30+)*

Islamic banking practices and guidelines can also affect the adoption of EPS, because religious rules play an essential role in banking and associated activities in a country like Libya. Uptake of EPS is likely to be enhanced by the use of debit cards, observing standard Islamic banking practices. This is evident from the findings, as the unavailability of Islamic banking procedures was found to be responsible for the low level of awareness among staff. This was clarified by one of the respondents from an organisation, who explained how implementing Islamic banking procedures might influence the attitudes of managers and decision makers in banks and telecommunications companies. He was quoted as saying:

*Understanding the Islamic transaction process of avoiding interest is needed.. When everything - e.g. regulation, infrastructure, awareness is wide spread, etc.. - How this relates to the procedures of adoption EPS is clear and understandable. The manager's attitude might then be influenced to adopt such a system at telecommunications companies. (RES113, 30+)*

The responses reported were handled based on Action/Interaction strategies. The cost of Internet competition and cooperation among organisations and governments are chosen as strategies that should be adopted by telecommunications companies pursuing EPS adoption. This leads to the suggestion that if the cost of gaining access to the Internet were reduced, it would encourage users to embrace new technologies that are Internet-dependent, which in turn would raise their awareness about using such systems. It

follows, therefore, that when companies reduce the cost of Internet access within an acceptable profit margin for them and their customers, then this kind of supportive collaboration lead them to adopt the EPS as it provides a win-win situation for both the companies and the customers. Against this backdrop, and in order to ensure smooth adoption/implementation of EPS, the telecommunications companies and other stakeholders should ideally:

- *Ensure that websites upon which the online payment/transactions will be carried out are well secured and fit for purpose (to increase trust and confidence on the part of the users).*
- *Increase awareness among people*
- *Provide extra services that benefit young people*
- *Reduce the price of Internet usage / access.(RES104, 50+)*

Ensuring a competitive spirit among different service providers will force them to review their charges to access the Internet, and will provide customers with the necessary leverage to make choices based on price patterns and the other associated benefits that come with choosing a particular service provider. Moreover, the competition, as mentioned by one of respondents, will assist the organisation and government to cooperate, in order to facilitate the fastest delivery process for consumer products. In doing so, staff motivations will increase, whilst also deepening their understanding and knowledge of EPS adoption. The respondent captured all the factors highlighted above, when he said:

*From the customer's standpoint, if they want something, they need it immediately. For example when they buy a product, which they saw*

*advertised on TV. The customer could get in their car and go to the shop, which might be closed, and is also time consuming. However using / adopting EPS with reasonably priced Internet access, would be a much easier and more convenient way to get the same product online, saving him/her time. (RES100, 50+)*

Actions or strategies put in place by Telecommunications companies to manage and handle the phenomenon under investigation will have positive outcomes and consequences. In the context of this research, the adoption of EPS may result in a better way of changing staff mentality / desire to adopt such a system, for example.

*Providing an Internet service in many parts of Libya, and setting an appropriate price for citizens (Internet services users), while providing a quality service, will makes it easy / encourage staff to adopt an electronic payment system.(RES90, 30+)*

#### **6.3.4 Political issues**

The fourth category, as shown in Figure 6.3-7, clarifies the ways in which the subcategories interact and are linked with each other, as well as their interaction with other categories, since they are interconnected / interrelated through the axial coding analysis:



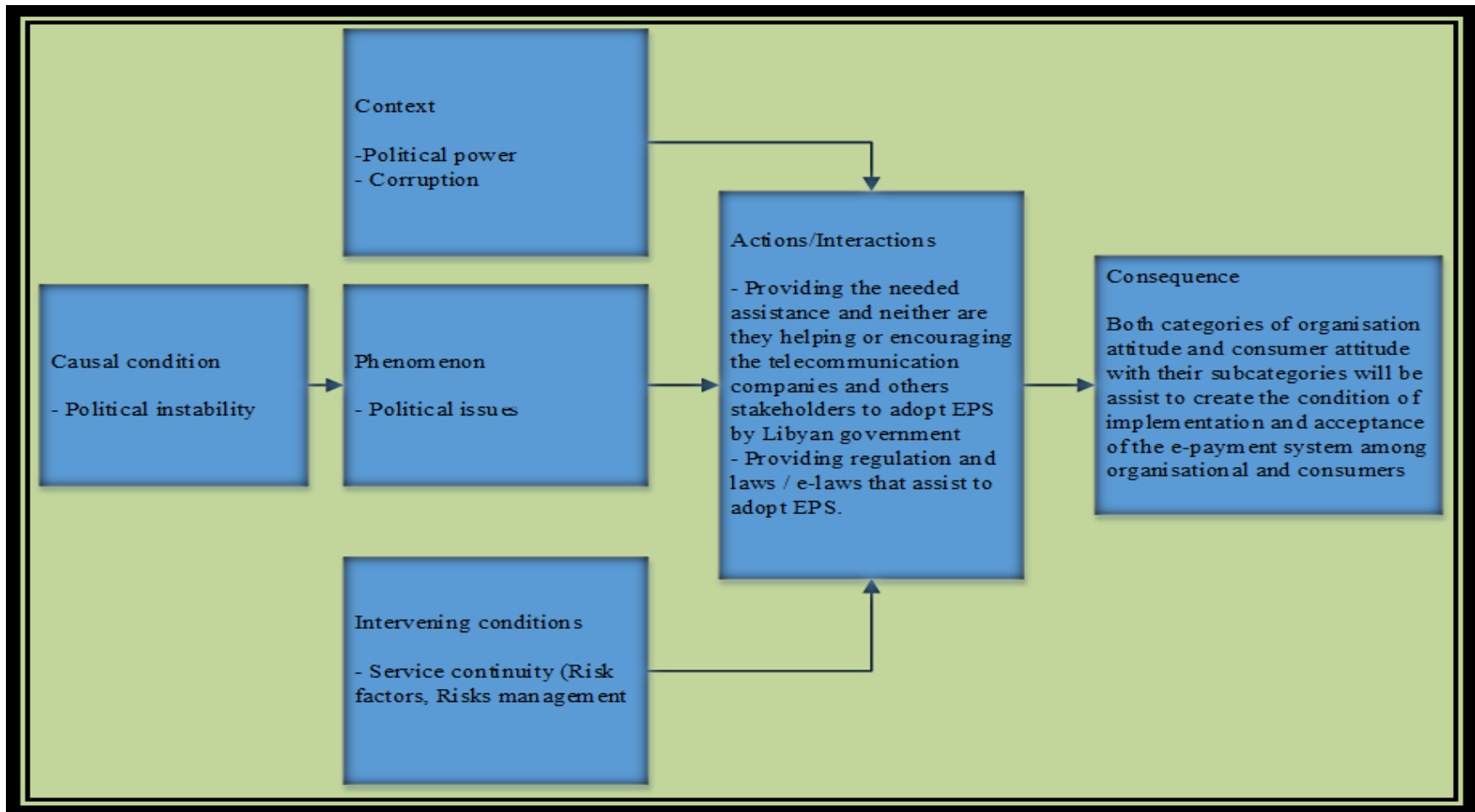


Figure 6.3-7 Axial coding (political issues category)

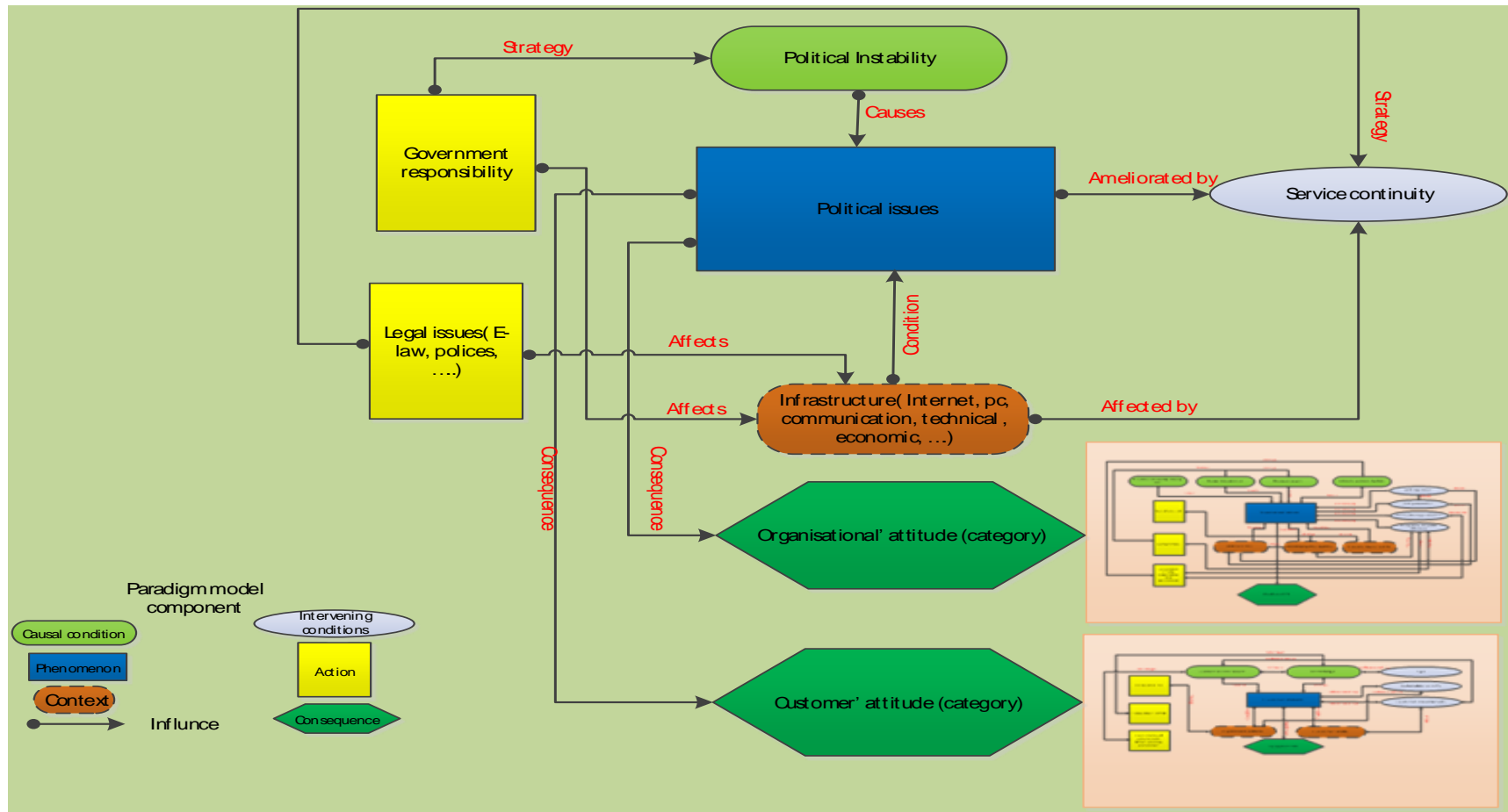


Figure 6.3-8 The relationship between the political issues category and its subcategories

Figures 6.3-7 and 6.3-8 illustrate how connections are made between the political issues category and its subcategories, which were factors developed in open coding. The central idea identified in this case is political issues, as detailed in section 6.2.2.4. This phenomenon identifies the impact of political instability in Libya, and its effect on the attitude of Libyan respondents as regards to the adoption of EPS. The findings reveal that the political instability in Libya, which began in the eastern region in mid February 2011, and which has since slowly spread across the country, has encouraged citizens, and particularly staff to appreciate the substantial benefits that come with being connected via the Internet to the rest of the world. The researcher identified the impact of this factor clearly in respondents' responses. For example, the head of the main network in Libya said:

*Internet users increased tenfold after the revolution of February 2011, compared to the numbers of users just before the revolution started. Moreover, people were ready to take any idea coming from the new government, related to technology, therefore attitude was affected, and they had a willingness to accept EPS idea if it was implemented / if the necessary conditions were met. (RES90, 30+)*

Based on the response from the above respondents, the researcher felt that the influence of the revolution was a positive one in regard to the use of Internet, because it encouraged people to feel free to adopt this technology. The revolution gave 'birth' to a new generation of newly educated people who understood the benefits of EPS adoption, as supported by the head of business administration, who said:

*Unrest, as a situation affected everyone from the EPS factors standpoint.*

*The revolution, the unrest, brought to the fore a new generation of educated people. (RES92, 30+)*

The director of information systems management in the Prime Minister's cabinet, supported all the previous respondents' views, as related to the effect of the political instability on the attitude of the people towards EPS adoption, when he said:

*The Revolution of 17 of February 2011 contributed to changes to the concepts and projects, which were monopolized by certain companies due to the not open / absence of competition among companies. Thus, I feel that the revolution positively affected the adoption of digital projects. The evidence for this is the fact that Internet users have increased in number since the revolution, therefore we can state that there has also been a revolution in informatics. (RES102, 40+)*

However, the head of human resources was relatively cautious about the supposed positive impact arising following the political instability. He argued that the influence of the revolution could not be immediately felt, noting that the new government needed time to settle down, to put activities in place, by establishing procedures and regulations to make it easier to adopt such a system; as he said:

*The impact of the revolution is not immediately clear, it was assumed that it would educate and develop the new government's electronic payment system culture and spread awareness [of technology] among the people. (RES89, 40+)*

The availability of infrastructure is another attitudinal factor embedded as a condition relevant to the phenomenon under study. The respondents needed to see for a fact, whether the necessary infrastructures are available, only then they will be able to definitively decide to adopt EPS. If the requisite infrastructures are not available, then consumers or staff will resist change until they are provided. For example, the following respondent, speaking from the customers' perspective clarified the importance of infrastructures, as playing a significant role in affecting Libyan people's attitudes toward EPS adoption:

*Ease of use depends on the availability of infrastructures, such as the Internet. It should be available in all the places, everywhere in the country, so as to motivate and encourage customers to use / to switch to an electronic payment system. (RES110, 20+)*

The director of information system management argued that, telecommunications companies are aware of the necessity to provide customers with an adequate infrastructure to support the adoption EPS. In addition, they must start to plan to adopt mobile payment as a step toward EPS adoption. Relating to this he stated;

*The Telecommunications companies should provide a suitable environment for E-payment systems, and then use the mobile (phone) payment system as a step forward in using EPS. They should also increase the awareness among people. (RES95, 30+)*

The Deputy of the Ministry of Telecommunications and Informatics stressed the issue of infrastructure availability, including the cost of access to the Internet, ease of use and

access to the system anywhere, anytime, etc. as a means to encourage and motivate people to use EPS.

*The ministry of telecommunications should provide more infrastructures, to help and ease accessibility to the system; and open training centres to provide more support, by increasing the awareness of adoption of EPS within the community. (RES104, 50+)*

Service continuity is a factor relating to the phenomenon under study. It plays an essential role in the adoption of EPS. If the telecommunications companies adopt EPS, they should then also tackle anything that could be considered essential as risk factors, or a threat to service continuity. For instance troubleshooting is a major issue that could limit Internet connections and services; providers need to also consider the possibility of an attack on the system, denial of service, viruses, etc. as a top priority. One of the easiest to achieve this is to install a proper firewall, and effective anti-virus software. In other words, a display of high level professionalism and commitment on the part of IT staff could motivate the Libyan people positively towards EPS adoption.

Based on the expressions conveyed by the respondents regarding the adoption of EPS, it is clear that ensuring access with minimal interruption is an integral concern of the entire implementation process. This suggests that telecommunications companies will depend on the expertise of their workforce to ensure continual smooth operations of EPS services. Adequate expertise, as well as putting the right infrastructure in place, will ensure companies have an appropriate data recovery process in place in case of network down time; ensuring that users will feel secure if there is a sudden interruption in the middle of an online transaction. In doing so, an entirely clean process, covering

about the adoption of EPS will be guaranteed and will increase EPS users subscriber density. Some of these important views was expressed by one respondent who said:

*The consistent provision of electricity is an important factor that must be met before the adoption of electronic payment system. The interruption of electricity can lead to incomplete online payments. In addition, customers might feel their transactions are in danger / at risk in cases of hacking, or attack by viruses, showing the vulnerability of their account. Hence, the telecommunications industry should meet this minimum requirement to attract people to use their e-system. (RES100, 50+)*

Another respondent point out some steps that the telecommunications companies should follow certain protocols to ensure service continuity; he said:

*The company should consider the following steps to ensure E-payment system adoption; firstly, easy access to the service at any time. Secondly, consider several other aspects, such as the technical issues. Thirdly, devise the publicity methods that will be used. (RES111, 30+)*

Many of the respondents expressed the opinion that responsibility on the part of the government will play a significant role in encouraging telecommunications companies to implement EPS platforms that meet time, cost and technical performance objectives. The government could also provide support in the form appropriate laws and legislation, to support the telecommunications companies and ensure their businesses are protected and shielded from unnecessary tax. Appropriate conflict resolution mechanisms between the companies and end users should be put in place by governments to prevent unforeseen conflicts in the future.

These strategies will have an outcome and a consequence, and in the case of this research the organisational attitude and consumer attitude, with subcategories are the outcomes of the strategies. This also affects the attitudes of both consumers and company staff, making them happy to create the condition of implementation and acceptance of the E-payment system. For example, government responsibility and legal issues emerged from the axial coding stage, it is easy therefore to understand the following respondents view:

*The government must be provided with an e-service, it takes time, and we are going to push them. There are terms and conditions everywhere when you have a debit card; it is the responsibility of finance ministry and parliament to make some things clear. If the government does adopt EPS, the Libyan Telecommunications Companies are going to produce an online payment service that suits consumer needs. (RES92, 30+)*

The director of Islamic banking at the republic bank agreed that, an established set of actions is required from the government reflecting its effects on the consumers' attitude toward adoption of EPS:

*It is supposed the existence of available political support for the adoption of an electronic payment system in order to; firstly, direct families to control their expenses based on purchases' statistics. Secondly, legislate E-commerce laws, which do not exist in Libya, and finally, monitor the rights of individuals and reviewing contracts for buying and selling in the Islamic point of view. (RES100, 50+)*



Finally, through the clarification process for the data analysis four categories emerged from the axial coding stage, each of which takes an organisational and a consumer perspective. Important factors were revealed based on the responses from the respondents, and these were attributed to a variety of issues caused by government responsibility, the Telecommunications companies' plans to adopt EPS, infrastructure, political willingness, etc. These factors will have a direct effect on attitude and the willingness of respondents from both organisations and consumers toward the adoption of EPS. However, the following sub-section discusses and clarifies the selective coding (a core category theory that bring four categories together which emerged from the axial coding stage).

#### **6.4 Core Category (Grounded theory emerging from this research)**

The final step in the analysis was to create a core category as shown in Figure 6.4-9. The process involved choosing and identifying core categories in reference to other categories. More importantly, it absorbed and validated the filing, refinement and development of categories (Strauss & Corbin, 1990, Charmaz, 2006). Grounded theory-based research starts with research questions, then answers to these questions emerges during the research process. In other words through building a core theory, which is a grounded theory, the researcher can present questions requiring answers by the end of the research. Creating and selecting core categories based on Straussian and Corbin techniques of required several steps. The first step included explicating the story line; the second consists of relating subcategories around the core category through implementation of the paradigm model; the third includes relating categories at the dimensional level; and the fourth involves validating relationships in reference to literature.

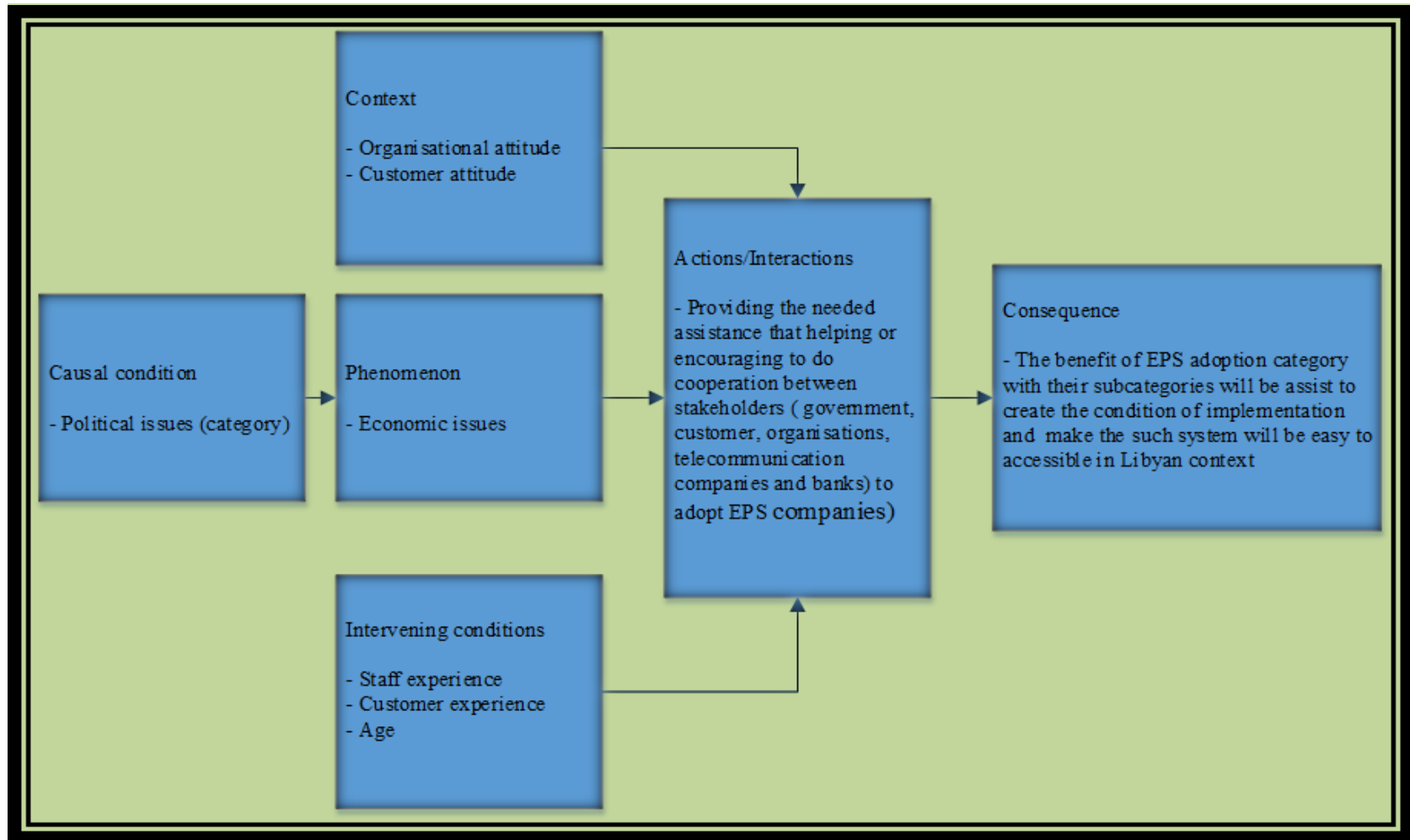


Figure 6.4-9 Selective coding or core category (economic issues category)

#### **6.4.1 Identifying the storyline**

Investigating and exploring the factors affecting the adoption of EPS amongst Telecommunications companies in Libya was the primary objective of the current research. Through analysis of the data obtained from the respondents factors emerged, which were then verified and corroborated in terms of the role they have played in the adoption of electronic payment systems in the Libyan context. For example, it was revealed that the adoption of EPS is influenced by customers' attitudes, the perceived benefits of EPS adoption, organisational attitudes, and political ramifications.

Despite taking into account those factors related to the benefit of EPS adoption and organisational attitudes, there were still some individuals and staff who refused to migrate from the traditional system to adoption of an e-system / online transactions. However, as stated earlier, a high rate of awareness amongst individuals and staff can assist in shaping the decision-making process undertaken by top management at Telecommunications companies to adopt an e-system. Thereby, reducing the number of people refusing the new payment system. This also results in diversity at the levels of living standards and or conditions experienced by individuals; this could then determine / allow or disallow their use of the internet at reasonable prices when compared to their salaries. In addition, organisational attitudes, in regard to other factors, also reflect the views and opinions of staff working in the telecommunications sector. For example, it was established that the level of government support for such companies, through the provision of laws, regulations, and a coding system, have had a significant impact from a staff perspective, in regard to making decisions concerning EPS adoption.

The current situation in the Libyan telecommunications sector, concerning the criticality of identifying factors that impact on the EPS adoption, emphasised the second step of

creating a core category, and establishing relationships between categories within a core category by applying paradigm model. The central idea (i.e. economic issues) was chosen as the central phenomenon for the purpose of this research because it was highlighted in detail by the majority of the respondents, when they expressed their views on the adoption of EPS. This was also evident in a summary provided by many respondents who said:

- *The most significant factors in my opinion are economic, political, technical, and social factors. (RES89, 40+)*
- *Economic (banking), technical (RES92, 30+)*
- *Economic and social. (RES93, 30+)*
- *Economic. (RES94, 40+)*
- *Economic and technical, social, political. (RES95, 30+)*
- *Economic aspect is an important because banks will establish the trust between their Institutions and customers, increasing business transactions. (RES100,50+)*
- *Technical, economic, political and social. (RES101, 20+)*
- *Economic, technical, political and social. (RES106, 20+)*
- *Economic, technical, political and social. (RES108, 20+)*

#### **6.4.2 Relating the Core Category to other Categories at a Dimensional Level**

The political category and its subcategories can be seen as causal conditions, underpinning the core category. The changes in the perceptions and attitudes of the Libyan people mean the interaction between Libyan respondents' attitudes are the central phenomenon exploited to explore those factors that cause and affect EPS

adoption from the standpoint of political factors. In other words, the different intentions referred to be respondents are associated with a set of events, and conditions. These subsequently direct the researcher toward a phenomenon, such as the cause of political instability, which is known to play a significant role as discussed in section (6.2.2.4.2) in reference to the adoption of EPS. This means that the situation of unrest in Libya has influenced respondents' attitudes concerning how far the new government is able to support EPS adoption, and how e-system adoption will contribute to economic growth in Libya.

The context is specific, actions and interactional strategies are taken to manage or handle phenomena with regard to respondents' views, and the perspective is in the case of the current research, the infrastructure facilitating EPS adoption in the Libyan context. Hence, the factors that emerged from the responses provided by the respondents, are being used to manage the phenomenon. In other words, these strategies, in the context where EPS adoption is being handled (as shown in Figures 6.4-10, organisation staff), could affect consumers' attitudes toward acceptance of online payment systems. Thus, the decision makers at telecommunications companies, and the new government need to develop an infrastructure to support EPS adoption. This can be achieved by providing feasibility studies on the adoption of EPS, and by increasing business awareness among staff and customers, and discussion with the Libyan government. The lack of an EPS infrastructure in Libyan context, is variously attributed to the lack of awareness, knowledge, and poor motivation on the part of the government to promote such system. Additionally, certain sets of conditions (staff experience, customer experience, age) affect the relevant action and interaction strategies, as represented in Figure 6.4-9.

Staff experience, customer experience and age are all affecting the attitudes of decision makers, in regard to EPS adoption. In fact that decision should be made by government, telecommunications companies. Therefore, the strategies supporting actions and interactions put in place are considered to manage this phenomenon. These focus on the experience and age of both staff and consumers, helping them to handle and provide the requirement for online dealing and payment processing, to encourage them to adopt the e-system. In other words, the respondents are young and have experience of online payments, which increases their willingness to use the internet, computers and secure websites, but also awareness of EPS adoption problems.

Cooperation between the government, customers, organisations (banks, organisation, and companies) has been considered as an action / interaction strategy that can overcome the barriers affecting EPS adoption. The majority of respondents consider this factor has having led the stakeholder to take on a procedure that might help them to understand the benefits and profits, contributing to economic growth in Libya.

Alternatively put, if cooperation exists between organisations and governments, the decision maker is expected to manage the phenomenon, and maintain all the requirements to provide the stakeholder with the capability to use the internet, computer and then purchase online by using EPS. Furthermore, any strategy taken to allow the system implementation has outcomes or consequences. In the case of the core category, customer mentality might change toward EPS adoption. Meaning, the mentality of customers might be positively affected due to cooperation between themselves and other stakeholders that force them to adopt E-payment systems in Libya. Finally, as mentioned by Strauss and Corbin (1990), the final stage of relating categories, is carried out at higher more abstract level of analysis.

During the development of grounded theory, it was found that all the factors illustrated in the chapter five effect on EPS adoption in the Libyan context. The variety of customer and organisational attitudes, and perspectives of EPS adoption, influence the economic factors and their subcategories because of influence from various other factors as shown in Figure 6.4-10 and Figure 6.4-11.

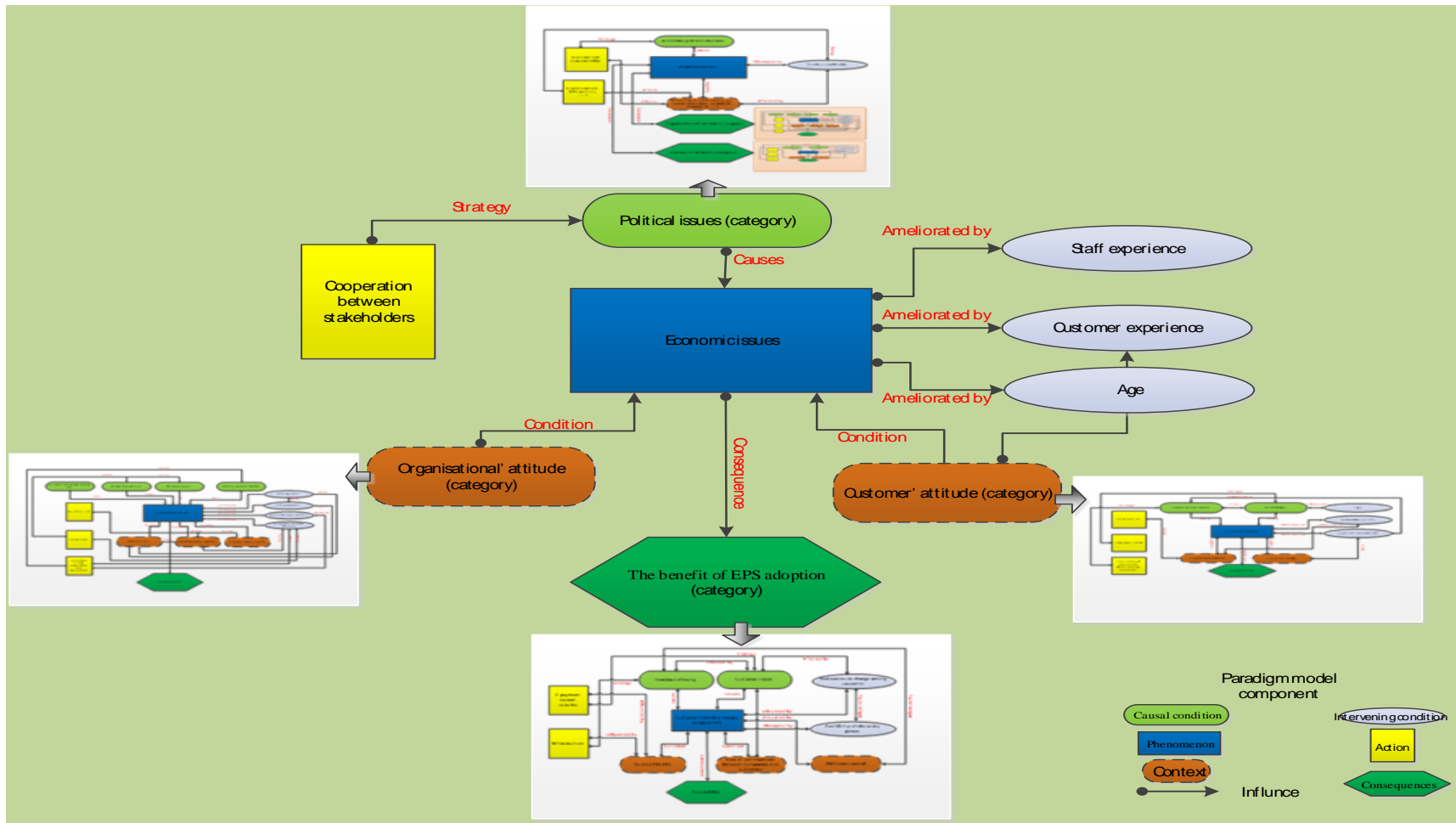


Figure 6.4-10 The relationship between the core category and its subcategories



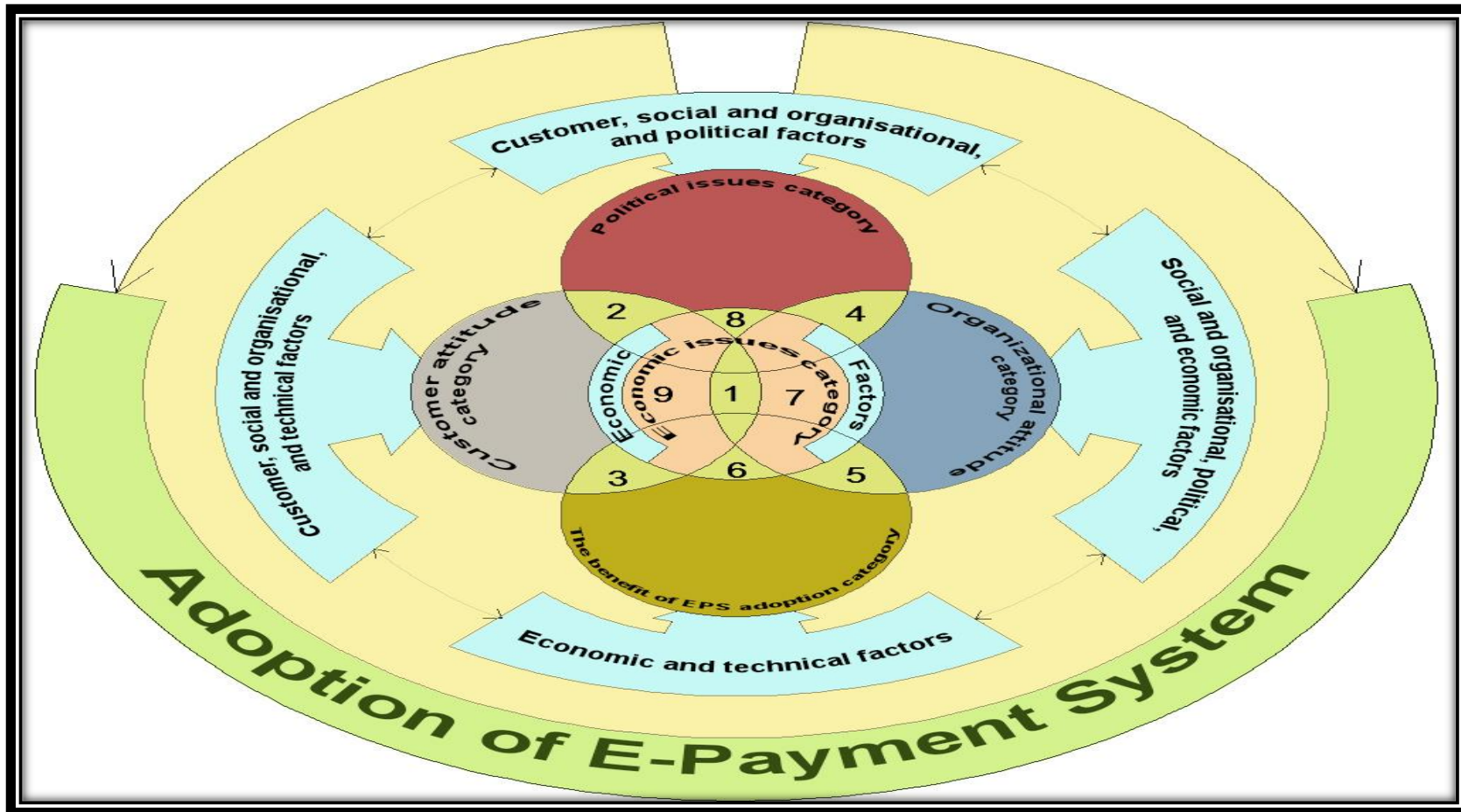


Figure 6.4-11 The relationship between the factors (social and organisational, technical, political, and economic)

Figure 6.4-10 and 6.4-11 show the relationship core categories and their subcategories. Moreover, it clarifies also the influence of the core category on EPS adoption at telecommunications companies in Libya. The model illustrates all the factors that emerged from both types of respondent, from organisations and consumers, and the way these affect EPS adoption. This shows that the strategies adopted should take into account cooperation between stakeholders (government, consumers, and organisation), and also that important factors facilitate and identify the barriers affecting the respondents' desires to adopt the system.

To summarise, the data collected from the respondents interviews completed the grounding either graphically (diagramming) or narratively (see section 3.4.6, 3.5, and 5.4 for more details); the concepts are systematically linked through on-going analysis of the codes.

### **6.4.3 Discussion and validating the relationship between the findings and literature**

This section highlights the way in which the emerged factors impact on the proposed model. During the development of grounded theory, it was found that factors illustrated in the current chapter effect EPS adoption in the Libyan context. The variety of customer attitudes toward the adoption of EPS influences economic factors and their subcategories in diverse ways. For example, age-grading especially for youth population is influenced by a limitation on the knowledge available to them (Al-Mabrouk & Soar, 2009).

Moreover, this factor (age-grading) is also indirectly influenced by economic factors, such as standard of living and Internet penetration, in terms of the level of quality and

the availability of employment, income, quality of education level, cost of goods, economic and political stability, etc. (Baptista, 2000; SMEDAN, 2009). Furthermore, customer awareness in regard to the use of the e-system is affected by experience level, which is also influenced by economic factors (Amedu, 2005; Ayo, 2001; CBN, 2010; Al-Mabrouk & Soar, 2009). However, resistance to change amongst staff can appear to be a result of lack of experience, which could have a significant influence, altering changing top management attitudes at telecommunications companies; on the other hand, it could influence economic factors (Ginige *et al.*, 2001; Zulhunda *et al.*, 2011).

Given that the attitude of staff differs in terms of their views and opinions, it is nevertheless recognised that this can affect various other factors, such as cooperation between the government, the banks and the customer, which in turn can be influenced by economic factors. Thus, it was evident that cooperation will not occur without experience or awareness amongst such entities (Simpson, 2004; Mann, 2004; Rosen, 2001; Zulhunda *et al.*, 2011).

It was also observed that, without essential factors related to the benefits of EPS adoption, companies would not accept EPS as a sole application on their websites, as customers are predominantly concerned with security issues (Abukhzam & Lee, 2010; O'Mahony *et al.*, 2002; Havinga *et al.*, 1996; Swatman, 1997; Swaminathan, *et al.*, 1999; Rose, 1999). Furthermore, customer attitudes, as a category, have been affected by age, reliability of EPS and customer experience in regard to the adoption of EPS. Thus, this is directly affected by economic factors (Ullah *et al.*, 2013; Djamasbi, *et al.*, 2010; Abukhzam & Lee, 2010; Davis, 1989; Wright, 2002). In addition, in the appendix J, more discussion and further explanation of the status of EPS through the comparison of the emergent grounded theory was presented in chapter six, and linking those factors

with the literature review discussed earlier in this research. This will be achieved through the linking findings with the existing Diffusion of innovations theory (DOI) as explained in more details in section 9.10.4.4.

## **6.5 Summary and conclusion**

This chapter discussed the adoption of EPS in the context of Libyan users; investigating various factors based on the perceptions of both organisations and consumers. Figure 6-4.10 and 6-4.11 explain the relationship between core categories and sub-categories. A detailed analysis revealed the impact of core categories on the adoption of E-payment systems. This model illustrates those factors that emerged from both respondents (organisation and consumers) as affecting the adoption of EPS. In addition, as shown in Figure 6.4-10, grounded theory details the important factors and strategies taken to facilitate and identify those barriers that affect respondents' attitudes to adoption of an e-system.

The discussion included in the current research findings has also explained, in more detail, the implementation of grounded theory, as connected to the Straussian approach; this is an appropriate research method for analysing, exploring, and investigating participants' views and opinions, and perspectives concerning EPS adoption in Libya. In addition, this chapter has shown how these factors have influenced the attitudes of both organisations and consumers. Moreover, the research questions were addressed in the findings analysis. The answers to the current research questions enabled the researcher to acquire an understanding of the relevant issues affecting EPS adoption in Libya. Furthermore, each factor was explained, and discussed from the standpoint of the respondents' answers, as detailed in this chapter. Finally, the theory generated from both sets of respondents' perceptions (organisation and consumers) revealed that

economic issues are the most important factors facilitating EPS adoption, as shown in Figure 6.4-10 and as discussed in section 6.3 and its sub-sections 6.3.1, 6.3.2 and 6.3.3.

The chapter also explained how the researcher employed an interpretivist approach that aimed to create a framework to build a theory that observes the reality apparent in interactions between individuals. This allowed researcher to detect individual's experience in regards any events, and helped to ensure a deep understanding of contextual data, and people's attitudes. This was accomplished through the application of a systematic methodological grounded theory in the social sciences with the potential to generate a theory from the data collected. Moreover, the current research findings were supported in literature review, and by empirical evidence, as explained in section 6.4.2. These reasons underpin the motivations for the decisions taken during this research, and ensure it contributes to the body of knowledge, as explained in section 7.3.

## 7 Conclusion

### 7.1 Introduction

This chapter presents the conclusions to the research and the answers the research questions. It also summarises the contribution this study makes to existing knowledge, evaluating its findings and limitations, and introducing recommendations to overcome the barriers to adoption of EPS in the Libyan context, in particular, in the Libyan telecommunications sector.

### 7.2 Answering the research questions

The main objective of this research was to extend the existing body of knowledge and present a theoretical framework for the adoption of EPS, by exploring the factors which influence EPS from both organisational and customer perspectives. However, the intention was to answer the main research question "*What are the social and organisational, economic, political and technical issues regarding the adoption of an E-payment system in Libya?*" This prompted the researcher to investigate factors affecting the adoption of E-payment systems, and to examine why these factors constitute barriers to EPS adoption in Libya. This was achieved by exploring the interrelationship between these factors and their impact on one another, as well as the influences affecting the adoption of EPS. This was realised by analysing the data collected from the interviewees, as was addressed in chapter six, specifically in subsections 6.2.2.1, 6.2.2.2, 6.2.2.3, and 6.2.2.4.

In order to cover further key issues, the researcher developed the following sub-questions:

- *What definitions of E-payment systems (EPS) exist and do they reflect EPS provision in Libya?*

The study provides definitions of E-payment systems in chapter 2, in specific in section 2.2. In addition, based on these definitions the researcher defined EPS clearly throughout this research.

- *What is the current EPS landscape in Libya and how do current political changes affect it?*

The current EPS landscape in Libya is described in chapter 22, particularly in section 2.5. However, this section confirms that the national payment system in Libya has undergone significant development in recent years. Section 6.2.2.4.2 explains the impact of political unrest in Libya on the attitude of consumers, organisational staff and decision-makers toward the adoption of EPS in the telecommunications sector. Therefore, the researcher found that the revolution of 17 February 2011 had influenced all Libyans, especially young people, as it pertained to the use of the Internet and the adoption of EPS. In fact, the revolution has had a positive impact on the population, to the extent that the understanding and interest they have in the Internet and its applications, has increased, as was explained in section 6.2.2.4.2. In section 6.3.4, the effect of the country's unstable situation on the adoption of EPS in Libya was emphasised, in accordance with the respondents' response. The influence of the revolution of 17 February 2011 was a positive one concerning the use of the Internet, principally because Libyan citizens had an increased desire to accept and use the internet. This interest and acceptance classifies them as potential future users of EPS. Therefore, arguably, the revolution gave 'birth' to a new generation of people who can understand the relevant factors affecting EPS adoption in Libya.

- *How does each of the four factors (socio-organisational, economic, political and technical) relate to EPS adoption in Libya?*

This research explored the relationship between EPS in Libya, and social, organisational, economic, political and technical factors, respectively. The interrelationship between these factors (*socio-organisational, economic, political and technical*) is depicted in the following figure.



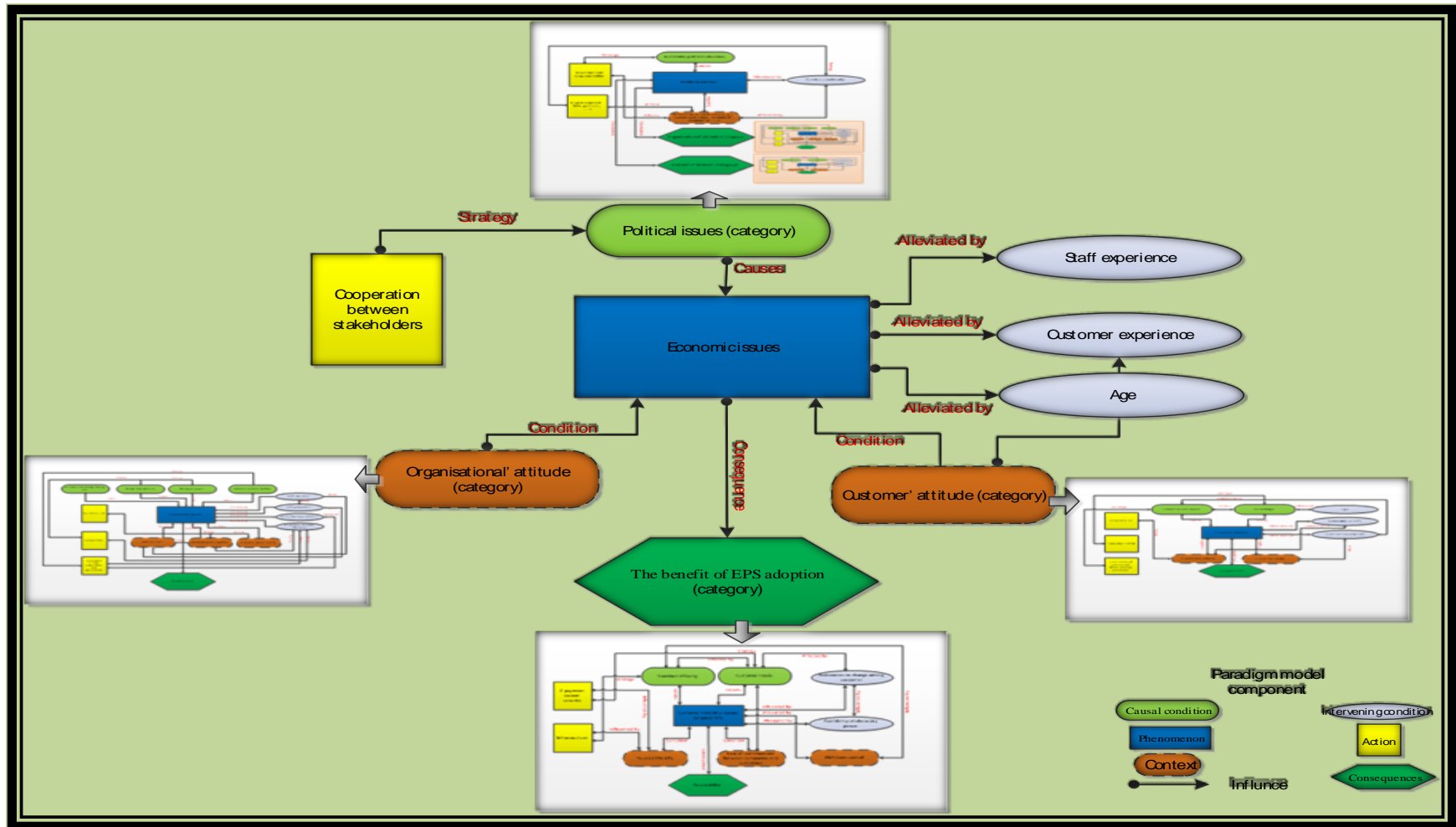


Figure 7.2-1 Research model

The findings emphasise that every factor has an influence on EPS adoption in the Libyan system. Firstly, social and organisational factors influence the attitudes of Libyans toward EPS adoption. This research shows staff experiences, and awareness of their ability to carry out a transaction via the Internet, would influence attitudes and willingness to adopt EPS are among the factors that influenced the attitude of Libyan consumers. Furthermore, the lack of awareness among Libyan consumers is another factor relating to the effect of socio-organisational factors on the willingness of strategic decision makers at telecommunications companies to develop EPS, as was explained in section 6.2.2.3. In addition, lack of cooperation between banks, governments and telecommunications companies causes concern about EPS adoption. This is because of the need to facilitate and increase the degree of trust between participating stakeholders, as was explained in section 6.2.2.2. Therefore, the discussion in sub-section 6.2.2.3 was emphasised with an in depth and more effective explanation of the socio-organisational factors influencing the adoption of EPS.

Secondly, economic factors were found to have the most influence on EPS adoption in Libya. Economic factors affect companies' organisational structures, generating serious concern among the population regarding EPS adoption in Libya. Based on the responses from both groups of respondents (consumers and organisations staff), an increased level of standard of living is eventually expected to alter the attitude of Libyan consumers in favour of EPS adoption. For example, change will proceed from a rise in the quality of education, the reduced cost of goods, income and political stability, and other changes. The acquisition of knowledge enables individuals to transform their way of thinking; thereby, increasing their tendency to prefer adoption of EPS.

Moreover, lack of competition and innovation are additional factors raised in relation to economic issues, which have had an influence on EPS adoption. These are reported as principal drivers of efficient EPS. In addition, good competition between Libyan telecommunications companies would help overcome the existing monopoly, potentially prompting more companies toward EPS adoption. Moreover, it has been concluded that lack of inclusion of Islamic banking principles based on Islamic Shar'ia Law has had a significant role in the development of the economic situation in Libya, as explained in sub-section 6.2.2.2.8. Based on the data analysis, sub-sections 6.2.2.2 provide a more detailed of discussion of all the emergent factors related to economics, and their impact on individuals' attitudes toward the adoption of EPS, whether customers or organisations.

Thirdly, political factors have an impact on Libyan's attitude regarding EPS adoption. Government responsibility, the unstable political climate in Libya, and existing regulations are among the sub-factors, which have been influenced by certain political and legal issues impacting on the adoption of EPS. Based on the data analysis, it was found that the instability of the situation in Libya has had a positive impact on Libyan people, in particular young people wishing to extend their understanding and knowledge of Internet use and associated applications, such as EPS. In addition, the lack of new Libyan e-legislation and policies are additional factors, linked to politics, which are hindering development, due to security concerns about telecommunication companies' websites. Lack of government responsibility, as one of the political factors has deterred and reduced positivity in regard to EPS adoption. A more detailed explanation of how the political factors affecting the adoption of EPS were discussed in sub-section 6.2.2.4.

Fourthly, technical factors also effect the adoption of the EPS. Security issues, trust and reliability relating to EPS all impact users' attitudes towards a final positive acceptance and adoption of EPS. The impact of these factors is playing a significant role in encouraging Libyan consumers to conduct more transactions online, consequently boosting their trust in telecommunications companies and the security of using their website facilities for transactions. Lack of post coding services in Libya are another significant technical factor complicating the adoption of EPS. In particular, when making online transactions there is concern that lack of connections between the telecommunications companies and the banks, regarding the addresses of Libyan citizens, will reduce reliability of deliveries. Additionally, poor penetration of internet connectivity in Libya has greatly hindered the adoption of new online technologies, and this in turn has affected the experiences of online users. The implications of the limited technical support have reduced faith in online transactions, endangering the acceptance of technologies such as EPS. Sub-section 6.2.2.1 offers more explanation in regard to which technical factors influenced individuals, whether customer or organisational attitudes toward the adoption of EPS.

- *What is the nature of the relationship between each factor and how does that particular relationship affect the overall process of EPS adoption in the Libyan context?*

This question was addressed by conducting a full empirical study, as discussed in chapter 6. The grounded theory emerged from the perspectives of stakeholders, who cited economic issues as of central concern impacting the adoption of EPS. However, this was not the only concern raised, because other technical, social, organisational, and

political factors have also had an essential influence on adoption of EPS, as depicted in Figure 7.2-1, below.

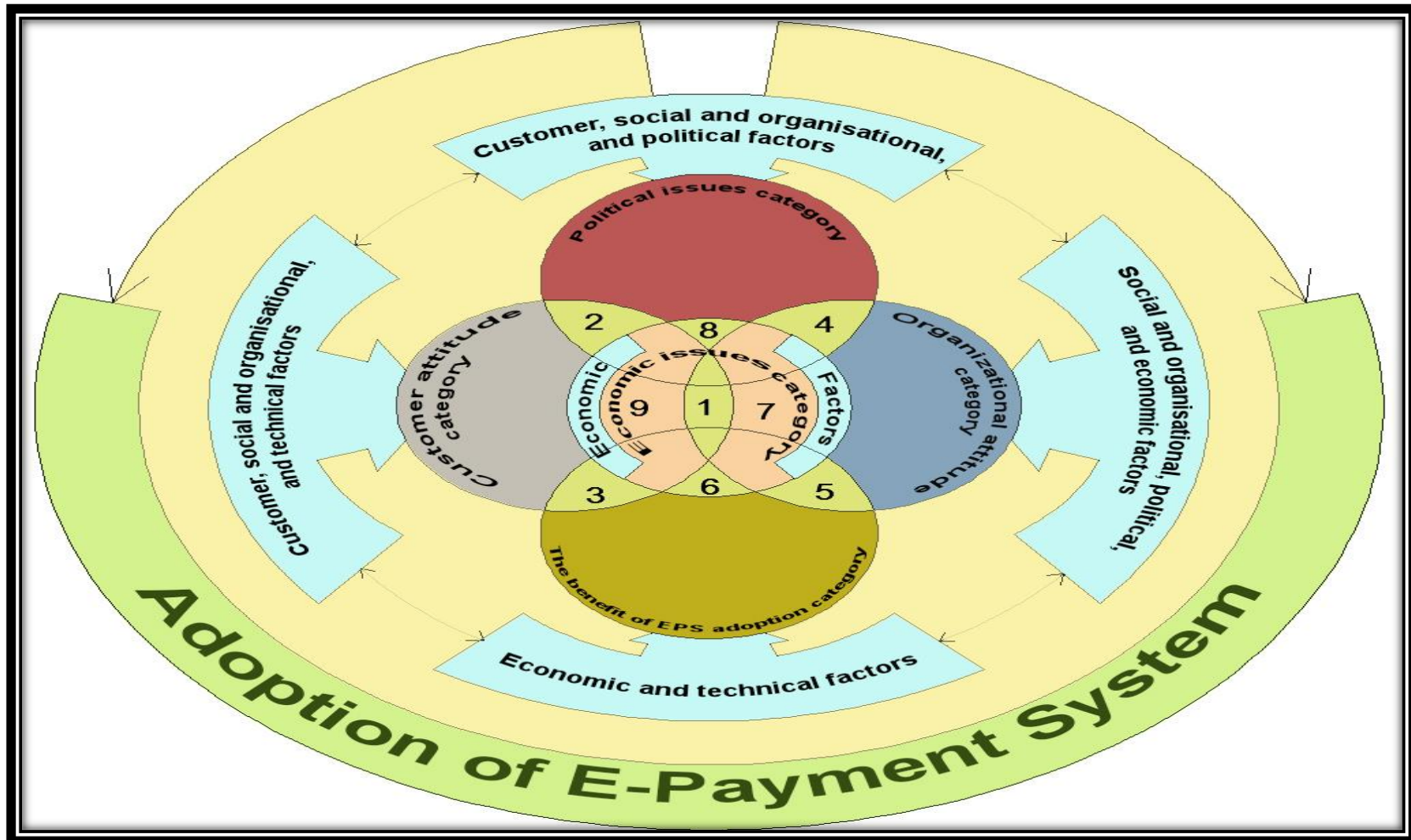


Figure 7.2-1 The relationship between the factors (social and organisational, technical, political, and economic)

The significant findings show that economic factors are affected by all other technical, social, organisational, and political factors, and that all these either increase or decrease the level of concern toward adoption of EPS. Figures 7-2.1 show all possible logical relations between social and organisational, economic, political, and technical factors, as well as illustrating the simple relationship between each, based on their shared features.

Based on the analysis, the five categories that emerged are represented as coloured circles and linked by different factors as represented by the light blue arrow shapes. The diagram consists of many intersections showing possible relationships between these factors. The interior of the area is shown in number 1 between the categories of customers' attitudes, and organisational attitude, explaining that ease of use in one of the most significant technical factors in terms of increasing the tendency of users to accept and adopt new technologies. Moreover, the technical infrastructure is found to be as a shared factor between customers' attitudes and political issues, as shown in area number 2, where it is shown to have a direct influence on the perspectives and attitudes of Libyan consumers regarding EPS adoption. Resistance to change, ease of use, technical infrastructure, and security are among the most important technical factors affected by the categories of customer attitude and the benefits of EPS adoption, as shown in circle number 3. Based on the data analysis, it was found that these factors have influenced user satisfaction strategies, which are in place to ensure this attribute. This will in turn enhance the attitudes of users toward the use and adoption of EPS.

As shown in area number 4, economic factors and technical factors are shared factors between social and organisational, and political issues, which have a direct impact on the organisational structure of telecommunications companies. Furthermore, they have

generated concern among the Libyan population, regarding the adoption of EPS in Libya. The intersection in area number 5, i.e. between the socio-organisational and benefits of adopting EPS categories, are related to each other through economic factors, such as, withdrawal control, Islamic banking and cost of Internet. As demonstrated in the data analysis, the impact of these factors has led to a rise in the types of attitudes that can encourage Libyans to adopt EPS.

In addition, the benefits of adopting EPS, show a direct relationship between economic and technical factors, such as, technical infrastructure, withdrawal control and standard of living, as shown in area number 6 in Figure 7-2. This means that the Libyan way of thinking is influenced by factors increasing their tendency to adopt such a system. Furthermore, economic issues and categories of organisational attitude have overlapped with many economic factors, such as cost of Internet, competition, monopoly power, cooperation with existing entities, Islamic banking, feasibility studies about EPS adoption, and the marketing business. All have an impact on the benefits of EPS through increasing or decreasing Libyan's attitudes toward EPS adoption, as shown in area number 7 in figure 7-2.

Finally, social, organisational, and technical factors have indirectly influenced customer attitude, political issues, and economic issues. This relationship as shown in areas numbered 8 and 9 confirm that the key factors affecting the adoption of EPS in Libya are economic issues, which include perceived benefits, cooperation with existing entities, mutuality of stakeholders, internet costs, standard of living, marketing businesses, awareness, loss of control, feasibility studies about EPS implementation, Islamic banking services and competition. The indirect influence of these factors shows how the perceived benefits derived from the adoption of EPS can significantly



encourage telecommunications companies to roll out services, and in turn may encourage users to embrace these services in the future.

The research provides answers to this sub-question in chapter 6, and in particular sections 6.4.2 and 6.4.3. The nature of the relationship between each factor, and how that particular relationship affects the overall process of EPS adoption in Libya was addressed, as shown in Figure 6-10.

In summary, the answers to the research questions afforded a greater understanding of how political, social and organisational, technical, and economic factors are affecting EPS adoption in Libya. They also delivered a fuller understanding of the relevant issues involved in EPS in Libya. Moreover, each factor was explained and discussed in relation to the respondents' answers, as detailed in chapter 6.

### **7.3 Research contribution**

The findings of this research are supported in the literature review, and by the empirical evidence, and make the following two kind of contribution:

#### **7.3.1 Original contribution**

- 1- This research shows that in the field of EPS, standard of living is a critical factor, affecting the attitudes of both consumers and organisations, and encouraging them to adopt EPS. This factor is linked to a rise in the quality of education, cost of goods, income and political stability; all of which have an impact on the mentality of Libyan people regarding internet usage, there by their tendency to adopt EPS is consistent with Ozkan *et al.*, (2010).
- 2- The majority of recent studies on adoption and diffusion have employed a grounded theory methodology to examine factors affecting the adoption of

internet usage in small-medium enterprises (Chinedu Eze, *et al.*, 2014; Kannabiran and Dharmalingam, 2012; Lawrence, 2010), and the adoption of EC (Halaweh, 2009; Aljaber, 2012). Thus, this study will be the first of its kind to analyse the impact of those factors on the adoption of EPS, by implementing grounded theory as a research methodology and research analysis.

- 3- This research contributes to the field of EPS by investigating novel factors affecting EPS implementation in the Libyan context. Previous research has tended to concentrate on the area of adoption of e-activities in Libya only; i.e. e-commerce (Alamro & Tarawneh, 2011; Abukhzam & Lee, 2010), e-learning (Rhema *et al.*, 2013; Rhema & Miliszewska, 2010), e-banking (Ullah *et al.*, 2013; Abukhzam, & Lee, 2010) and e-government (Sweisi, 2010). Therefore, this research makes a unique contribution to the field of EPS in Libya, in particular.
- 4- The research revealed three new and significant factors of relevance to Libya, including standard of living, post coding and the unstable political situation in the country. These represent a unique contribution to the body of knowledge, illustrating the attitude of the Libyan people toward Internet usage, and current obstacles to EPS adoption.

### **7.3.2 Complementary contribution**

- 1- The core component of the study's contribution has been to extend knowledge through investigation of the technical, economic, social, organisational, and political factors affecting the adoption of EPS in Libya, particularly in the telecommunications sector. The grounded theory generated was validated by empirical work, with the data showing the different attitudes of stakeholders,

such as consumers, organisational staff (e.g. telecommunication companies, banks, the Ministry of Telecommunication and Informatics, and information system management at government level), and decision-makers (e.g. Under-Secretary of the Ministry of Communications, Director of the Islamic Bank). The model is novel, such that the findings of the research highlight three new significant factors (post-coding, standard of living, and the unstable political status of Libya) as discussed in subsections 6.2.2.1.4, 6.2.2.2.10, and 6.2.2.4.2.

- 2- The study differs from previous studies on the adoption of EPS in developing countries which have only focussed on the influence of political (Azab *et al.*, 2009, as cited in Dolan, 2014; Adam, 2008), socio-organisational (Shin *et al.*, 2013; Özkan *et al.*, 2010; Kleijnen *et al.*, 2004; Karahanna & Limayem, 2000), economic (Jamshidi & Hussin, 2013; Ifinedo, 2012; Gholami *et al.*, 2010; William & Simon, 2006) and technical factors (Dalvand *et al.*, 2014; Lawrence & Tar, 2010, pp.32–33; Hunaiti *et al.*, 2009, p. 37).

#### **7.4 Further work**

Further research is recommended to overcome the barriers to EPS adoption that the researcher encountered. The researcher is able to make some recommendations that may assist decision-makers in the development of the use of EPS. The following actions are recommended:

- The Libyan government is strongly recommended to increase awareness of E-payment methods. Telecommunications companies should do so through the use of communications channels, such as educational institutions, television, radio, posters, and meetings. As illustrated in Figure 6.4-10; awareness plays a significant role in overcoming concerns about the adoption of EPS. To stimulate

increased support for the wider implementation of EPS in Libya, the government must first establish a policy directed at raising awareness of the potential benefits of EPS adoption (see section 6.2.2.3.2 for more details about the effect of lack of awareness on the adoption of E-payment).

- It is recommended that the government should promote an open and competitive telecommunications industry in the country. The inadequate telecommunications infrastructure in Libya acts as a barrier to e-commerce and EPS. Therefore, the Libyan government should take special measures to encourage competition within the telecommunications industry, reducing ISP connections and communication costs, and developing and improving internet access. The government should take measures towards improving and enhancing the development of the information superhighway, thereby supporting the telecommunications infrastructure. Since Libya does not have an electronic payment system infrastructure in place, the government and financial institutions need to initiate steps to increase credit card penetration among businesses and consumers, to develop a regulatory framework to assist in EPS adoption (see sections 6.2.2.2.9 and 6.2.2.4.3 for more details about the effect of lack of competition and regulation on the adoption of E-payment)
- The Communications and Informatics Ministry should advise internet service providers and companies to discount the cost of using the internet for limited bandwidths, in order to facilitate access to the internet. In addition, it is also recommended that the communications sector establish plans to overcome the shortage of landlines, and to make wireless broadband provision more widely

available, thereby enabling access to the internet (see section 6.2.2.2.4 for more details about the effect of Internet cost on the adoption of E-payment)

- It is recommended that the government should support and assist the private sector by providing people with computers and laptops, which can be obtained at reasonable prices commensurate with their monthly income. As revealed by the findings of a study conducted by Al-Nagi and Hamdan (2009), computer literacy plays a significant role in affecting consumers' attitudes towards adoption of EC and EPS. Lower cost hardware would help to improve computer literacy and individuals' computer skills, in particular those of elderly people (see section 6.2.2.2.10 for more details about the effect of standard of living on the adoption of E-payment).
- The Libyan government should establish legislation encouraging telecommunications companies to adopt E-payment systems for e-businesses, and to protect the rights of customers when using e-commerce and E-payment methods. In addition, such regulations could be used to criminalise electronic crimes, including theft of personal and banking information (see section 6.2.2.4.1 for more details about the effect of lack of government responsibility on the adoption of E-payment).
- The telecommunications sector in Libya should be viewed in light of Egyptian experience in this area, as Egypt is the closest state to Libya to have applied a system of e-commerce based on EPS. In addition, the country has benefitted from its experience of E-payment adoption. This may generate new insights into the adoption of EPS, which may be relevant to other developing countries.

- To develop an inclusive E-payment framework that permits online transactions, the Libyan banks should consider the inclusion of Islamic banking principles based on Islamic Shar'ia Law, as this can influence use of debit and credit cards. It will participate in playing a significant role in the development of a more stable economic situation in Libya. This type of payment requires close cooperation between all stakeholders, such as banks, governments, telecommunications companies, and consumers, with the need to meet all Libyan needs and expectations (see section 6.2.2.2.8 for more details about the effect of lack of access to Islamic banking via E-payment in Libya on its adoption).

## **7.5 Research evaluation**

This section assesses and evaluates the quality of the research design, which was to build on grounded theory for the research methodology and data analysis. As explained in chapter 6, section 6.4, the grounded theory generated should be understandable and fitting. In the case of this research, the criteria for judging the merits of theory-building research were intended to address the adequacy of the current research process and to ground its findings. The three main criteria used for measuring and judging the rigour of qualitative research studies are: credibility, auditability, and fittingness (LoBiondo-Wood & Haber, 2006).

### **7.5.1 Credibility**

Credibility is defined as, the “truth of findings as judged by participants and others within the discipline” (LoBiondo-Wood & Haber, 2006, p.168). Heath *et al.* (2004) attained credibility by returning abstracts from the transcribed interviews to the participants for review, to ensure that all the content was precise and accurate.

Secondly, auditability means that ample information is presented to lead consumers “from the research question and raw data through various steps of analysis to the interpretation of findings” (LoBiondo-Wood & Haber, 2006, p.168). Throughout the research, the researcher implemented every step of the method. For example, the literature review was conducted and used to identify gaps in the existing research. From this information, the aim of the study, and the research questions were developed and clarified. Then, the grounded theory implemented, the theoretical sampling, and data collection methods were discussed in chapter’s 5 and 6.

In order to increase the credibility of the research findings, ethical approval was obtained (see Appendix A). The researcher gave a brief introduction of the research to the respondents, and a digital recorder was used with their permission. Both consumer and organisational questions were addressed for triangulation purposes, and to heighten validity. Furthermore, the transcription and translation processes involved two professionals (Arabic and English native speakers), who verified the meaning in both versions. At the end of each interview, the transcript (raw data) was broken down, examined and coded by the researcher (see section 5.4).

The relationship between the emerging factors and the respondents’ attitude was based on the respondents’ answers, and categorised according to the coding process described in section 6.3 and 6.4. The researcher used four grounded theory techniques to facilitate and simplify the process of generating theory (see section 3.5).

### **7.5.2 Auditability**

Auditability takes place when a researcher is able to follow the research steps, from forming research questions, to data collection, and to findings (categories, codes,

theory) (Carpenter, 2011; Chiovitti & Piran, 2003). When using grounded theory, it is essential to define and specify the criteria used when analysing the transcribed interview data (Glaser, 1978; Strauss, 1987; Strauss & Corbin, 1990). In this research, the criterion was specified and comprised of questions repeatedly asked during analysis. For example, *What is happening in the data? What does the action in the data represent? Is the code related to another code?* (Strauss & Corbin, 1990, 1998). In order to identify the relationship between each code with the theory generated, a paradigm model was used to forge links between categories and subcategories, as explained and discussed in chapter 5, sections 5.4.1, 5.4.2 and 5.4.3, and also in sections 6.2.2, 6.3, and 6.4. Hence, throughout the research, the researcher was able to review, audit and validate the methods used to develop the theory.

### **7.5.3 Fittingness**

LoBiondo-Wood and Haber (2006) define fittingness as, the “everyday reality of the participants” being “described in enough detail so that others in the discipline can evaluate importance for their own practice, research, and theory development” (p.168). To develop fittingness in grounded theory research, it is significant to recognise the level of theory generated (Strauss & Corbin, 1990; p.174). This research develops a theory which evolved from an investigation of factors affecting the adoption of EPS in the Libyan context. By applying a detailed explanation of the study findings, the researcher identified the scope of the research based on the sample size of Libyan interviewees, including both consumers and organisations, justifying this as shown in sections 4.4 and 4.5.5. In addition, fittingness can also be ascertained by identifying the level of theory generated, and by illustrating how the literature links to each category as it emerged in theory, as explained by Chiovitti and Piran (2003).



The concepts of fit, work, relevance and modifiability are used to assess and judge the quality of the theory (Lomborg & Kirkevold, 2003). First, fit can be represented as those categories that emerged from the data collected in the study, thereby ensuring that generating grounded theory will fit the literature; this was achieved in section 6.4.2. Thus, because of the similarities with prior studies in the field of electronic payment, there is a potential for transferability of the findings generated in this research.

In this research the criteria of fit was met, as the categories emerged from the data collected. The aims of this research subscribed to the notion that theory should present explanations and interpretations of what is occurring in the field under study. However, an adequate standard is judged to have been achieved when there is fittingness between the categories and data that can be used to explain what is happening in the area of concern. Additionally, relevance relates to the idea that theory should be appropriate to the action in the area under study. Lastly, modifiability means that a grounded theory may encounter changes in response to the emergence of new data. In other words, modifiability standards are met when the theory adapts as new data emerges.

## **7.6 Research limitations**

Although this research is the first of its kind in the field of EPS adoption, it has limitations. These are as follows:

- The data was collected using semi-structured face-to-face interviews with organisational and consumer respondents selected from telecommunication companies, banks, and the government. The data collection are was limited to Tripoli in Libya. It is difficult to conduct empirical studies including other

Libyan cities due to the time involved in travelling between them and unrest political situation.

- This research is limited by investigating the effect of political unrest in Libya on the project of E-Libya, as planned by Ministry of Telecommunications and Informatics including e-government, e-commerce, and E-payment. However, this factor needs further research to investigate its full impact on adoption of EPS.
- With regard to the theoretical framework of this research, which is limited to the Libyan context, the findings may not be generalised without further complementary research confirming its conclusions. Future researchers wishing to build on the findings of this study in their own research should bear in mind the research conditions, shared factors and local culture.
- This research adopted a grounded theory approach, and more specifically the Straussian approach. The theoretical sampling method played a significant role in ensuring the participants possessed relevant knowledge. Moreover, the nature of grounded theory as the chosen research methodology means the research findings may not be generalised; however, the findings may nevertheless be of interest to other societies with similar conditions and cultural environments. Furthermore, the application of different research methods could be used to align the objectives of future studies with these findings.

## **7.7 Conclusion**

Previously, EPS studies have focused on the influence of the following factors independently: political, social and organisational, economic, and technical. This research applied grounded theory as a qualitative research method to investigate all of

the above factors and their combined influence on the adoption of EPS from both the perspectives of organisations and consumers in the Libya. Moreover, the ability to understand the variables and their relationships has added to the sensitivity of the theory, which is influenced by a number of things, including existing literature and the use of the Straussian approach to analyse the data. Furthermore, the study clarifies the relationship between the core category and its sub-categories; as explained in chapter 6, section 6.4, providing a detailed understanding of each factor affecting EPS adoption.

Extensive analysis of the research data revealed the impact of the core category on the adoption of E-payment systems, illustrating the factors which emerged from both organisational and consumer respondents. Moreover, this research contributes to the body of knowledge by contradicting issues and factors previously found in the literature, which are no longer relevant as factors hindering the adoption of EPS. In addition, standard of living, post-coding and the unstable political situation in Libya are significant new factors discovered after analysis, and not mentioned in the literature. This research has a solid theoretical framework of practical and methodological implications (as mentioned and explained in more detail in chapter 6), and this should assist stakeholders including researchers, telecommunication companies, government decision-makers and banks to understand the factors affecting the adoption of EPS in the Libyan context.

Finally, the research questions have been addressed throughout the work, and analysis of the current findings has been presented in this research.

## 8 References

- Abdulhadi, H. (2013) An Empirical Study of Online Shopping Customer Satisfaction in Malaysia–Evaluating eBay Malaysia. *Journal of Computing & organisational dynamics*, Vol. [1], No.2.
- Abedifar, P., Ebrahim, S., Molyneux, P., and Tarazi, A. (2014) Islamic Banking and Finance: Recent Empirical Literature and Directions for Future Research.
- Abou -Shouk, M., Lim, W. M., and Megicks, P. (2013) Internet adoption by travel agents: A case of Egypt. *International Journal of Tourism Research*, Vol. [15], No.3, pp.298-312.
- Abrazhevich, D., (2001) Classifications and Characteristics of Electronic Payment Systems, *Lecture Notes in Computer Science*, Vol. [21], No. 5, pp. 81-90.
- Abrazhevich, D., (2001) Electronic Payment Systems: Issues of User Acceptance, In Stanford-Smith, B. and Chiozza, E. (Eds.), *E-work and E-Commerce*, pp. 354-360. IOS Press.
- Abrazhevich, D., (2004) Electronic Payment Systems, a User-Centered Perspective and Interaction Design. Thesis (doctoral), Technische Universiteit Eindhoven, Eindhoven, pp. 24–26.
- Abukhzam , M. and Lee, A., (2010) Factors affecting bank staff attitude towards e-banking adoption in Libya, *The Electronic Journal on Information Systems in Developing Countries*, Vol. [42], No. 2 , pp. 1-15.
- Achinstein, P. (1983) *The Nature of Explanations*, Oxford University Press, New York.

- Adams, D, Nelson, R. and Todd, P. (1992) Perceived usefulness, perceived ease of use and user acceptance of information technology: a replication, *MIS Quarterly*, Vol. [16], No. 2, pp. 227-247.
- Agimo, (2004) *Better Practice Checklist for E-payment*. Australia Government Information Management Office (online), available at: [http://www.agimo.gov.au/publications/2000/04/better\\_practice\\_checklist\\_for\\_epayment](http://www.agimo.gov.au/publications/2000/04/better_practice_checklist_for_epayment) [Accessed at May 2011].
- Aguirre, R. T., and Bolton, K. W. (2014) Qualitative interpretive meta-synthesis in social work research: Uncharted territory. *Journal of Social Work*, Vol. [14], No. 3, pp. 279-294.
- Ajzen, I., and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behavior*, NJ: Prentice-Hall.
- Akudo C. Anyanwu, Absalom E. Ezugwu, Sale E. Abdullahi. (2012). Electronic Payment System (EPS). *IJCSI International Journal of Computer Science Issues*. Vol. [9], No.2, pp. 462-467.
- AL-Adwan, M., AL-Zyood, M., and Ishfaq, M., (2013) The impact of electronic payment on Saudi banks profitability: case study of SADAD payment system. *IJRRAS*. Vol. [14], No.1, pp. 100-113.
- Aladwani, A.M. (2001) Online banking: a field study of drivers, development challenges, and expectations *International Journal of Information Management*, Vol. [21], pp. 213–225.
- Al-Alawi , I. and Al-mer, A., (2006) Young Generation Attitudes and Awareness Towards the Implementation of Smart Card in Bahrain: An Exploratory Study, *Journal of Computer Science*, Vol. [2], No. 5, pp. 441-446.

- AL-allak, B., (2010) Evaluating the Adoption and Use of Internet-based Marketing Information Systems to Improve Marketing Intelligence (The Case of Tourism SMEs in Jordan), *International Journal of Marketing Studies* Vol. [2], No. 2, pp.87-101.
- Alamro S. and Tarawneh S.A., (2011) Factors affecting e-commerce adoption in Jordanian SMEs. *European Journal of Scientific Research*. Vol. [64], pp.497-506.
- Aldraehim, M., Edwards, S. L., & Watson, J. (2012) Cultural impact on e- service use in saudi arabia: Results from focus groups. *In Information Technology: New Generations (ITNG), 2012 Ninth International Conference on* (pp. 744-750) IEEE.
- Alev, M. E. and Vincent, F. Y., (2004) Chinese culture and e-commerce: an exploratory study, *interacting with Computers*, Vol. [16], No.1, pp. 45–62.
- AlGhamdi, R., Drew, S., Alkhalaf, S., (2012) Government Initiatives: The Missing Key for E-commerce Growth in KSA, *World Academy of science, Engineering and technology*, Vol. [77].
- AlGhamdi, R., Drew, S., and Al-Ghaith, W. (2012) Factors unflinching e-commerce adoption by retailers in Saudi Arabia: Qual Analysis. arXiv preprint arXiv:1211.2404.
- AlGhamdi, R., Drew, S., and Al-Ghaith, W., (2011) Factors influencing e-commerce adoption by retailers in saudi arabia: a qualitative analysis, *The Electronic Journal on Information Systems in Developing Countries, EJISDC* , Vol. [47], No.7, pp. 1-23.

- Amedu, U. M. (2005) Domestic electronic payment in Nigeria: The Challenges. Central Bank of Nigeria Bulletin, Vol. [29], No. 1, January/March.  
[http://www.agimo.gov.au/publications/2000/04/better\\_practice\\_checklist\\_for\\_epayment](http://www.agimo.gov.au/publications/2000/04/better_practice_checklist_for_epayment).
- El-Gohary, H. (2012). Factors affecting E-Marketing adoption and implementation in tourism firms: An empirical investigation of Egyptian small tourism organisations. *Tourism Management*, Vol. [33]. No.5, pp. 1256-1269.
- Al-Hajery, M., AlRefaei, Y. and Khalfan, A., (2006) Factors influencing the adoption of internet banking in Oman: a descriptive case study analysis, *Int. J. Financial Services Management*, Vol. [1], No. 2, 3, pp.155-177.
- Aljaber M., (2012) The impact of privacy regulations on the development of electronic commerce in Jordan and the UK. PhD thesis in E-commerce in Jordan.
- Alkout, A. and Khalfan, A. (2004) The use of case study methodology on IT/IS research: a framework of issues, In EMCIS 2004 (Ed.), European & Mediterranean Conference on Information Systems, Tunis.
- Allan, G., (2003) A critique of using grounded theory as a research method. *Electronic Journal of Business Research Methods*, Vol. [2], No. 1, pp. 1-10.
- Al-Mabrouk, K. and SoarA, J., (2009) Delphi examination of emerging issues for successful information technology transfer in North Africa a case of Libya, *African Journal of Business Management*, Vol. [3], No.3, pp. 107-114.
- Almobarraz, A., (2009) Users' perception of internet characteristics in the academic environment, *Proceedings of the American Society for Information Science and Technology* Vol. [45], No.1, pp. 1 - 9.

- ALMowalad, A., and Putit, L. (2013) Factors influencing Saudi Arabian women's shopping behaviour in online purchase activities.
- Alomari, M, P Woods and K Sandhu. (2012) Predictors for e-government adoption in Jordan: Deployment of an empirical evaluation based on a citizen-centric approach. *Information Technology & People*, Vol. [25], No.2, pp. 207 - 234.
- Al Nagi, E., and Hamdan, M. (2009) Computerization and e-Government implementation in Jordan: Challenges, obstacles and successes. *Government Information Quarterly*, Vol. [26], No.4, pp.577-583.
- AL-Somali S.A., Gholami R., and Clegg B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*. Vol. [29], pp. 130-141.
- Al-Somali, S. A., Gholami, R. and Ben, C., (2008) *Internet Banking Acceptance in the Context of Developing Countries: An Extension of the Technology Acceptance Model* Aston Business School, Aston University, Birmingham.
- Al-Sukkar, A., and Hasan, H. (2005) Toward a Model for The Acceptance of Internet Banking in Developing Countries, *Information Technology for Development* Vol. [11], No.4, pp. 381- 398.
- Aman Bank for Commerce and Investment (ABCI): website, <http://www.abci-ly.com> (Visited May, 2014)
- Anderson, M. (1998). The electronic check architecture. Financial Services Technology Consortium, Vol. [123].
- Anik, A. A., and Pathan, A. M. K. (2002) A framework for managing cost effective and easy electronic payment system in the developing countries
- Antwi, S. K., Hamza, K., and Bavoh, S. W. (2015) Examining the Effectiveness of Electronic Payment System in Ghana: The Case of e-ZWICH in the Tamale



- Metropolis. *Research Journal of Finance and Accounting*, Vol. [6], No.2, pp.163-177.
- Anyanwu, A. C., Ezugwu, A. E., and Abdullahi, S. E. (2012) Electronic Payment System (EPS): Facilitating the Development and Adoption in Nigeria. *IJCSI International Journal of Computer Science Issues*, Vol. [9], No. 2.
- Auerbach, C. F., and Silverstein, L. B. (2003) *Qualitative data: An introduction to coding and analysis*. NYU press.
- Avison, D., Dwivedi, Y.K., Fitzgerald, G. and Powell, P., (2008) The beginnings of a new Era: Time to reflect on 17 years of the ISJ, *Information Systems Journal*, Vol. [18], No. 1, pp.5-21.
- Ayo, C. K., and Ukpere, W. I. (2012) Further development of a secured unified E-payment system in Nigeria: A critical viewpoint. *E-Business–Applications and Global Acceptance*.
- Azab, N., Kamel, S. and Dafoulas, G. (2009), A Suggested Framework for Assessing Electronic Government Readiness in Egypt, *Electronic Journal of e-Government*, Vol. [7], pp.11-28.
- Baddeley, M. (2004) Using E-Cash in the New Economy: An Electronic Analysis of Micropayment Systems, *Journal of Electronic Commerce Research*, Vol. [5], No. 4, pp. 239-253.
- Bagozzi, R. P., Warshaw, P. R., (1992) Development and test of a theory of technological learning and usage. *Human Relations* Vol. [45], No.7, pp. 660–686.

- Baker, M., (2001) Doing E-Commerce in Europe, Baker and McKenzie, Hong Kong.
- Computer Economics (2001), Internet & E-Business Strategies, Internet Trends, Vol. [5], No. 4, pp. 3-5.
- Balakrishnan, M. (2010) Improving payment system efficiency in India: Next steps. *Strategy*, Vol. [3], No. 4, pp. 357-380.
- Bamoriya, P., Bamoriya, H., and Singh, P. (2013) Perceptual mapping of electronic banking channels in India: A Multidimensional Scaling approach. *International Journal of Research Studies in Management*, Vol. [3], No.1.
- Bank Negara Malaysia (BNM) (2010) *Financial Stability and Payment Systems Report 2009*, Percetakan Nasional Bhd, Kuala Lumpur.
- Bank of Commerce & Development (BCD): available at, <http://www.bcd.ly/english/Default.aspx> [Accessed May, 2014]
- Baptista, R., (2000) Do innovations diffuse faster within geographical clusters? *International Journal of Industrial Organization*, Vol. [18], pp.515-535.
- Basias, N., Themistocleous, M., Morabito, V., (2012) Influential Factors of SOA Adoption in E-Banking, *European, Mediterranean & Middle Eastern Conference on Information Systems 2012*.
- Bassellier, G., Benbasat, I., and Reich, B.H. (2003) The influence of business managers' IT competence on championing IT. *Information Systems Research*, Vol. [14], No.4, pp. 317-336.
- Bauer, H., Grether, M. and Leach, M. (2000) Building customer relations over the internet, *Ecommerce Research Forum*, available at: <http://citeseer.ist.psu.edu> [Accessed at December 2009].

- Bazeley, P., Jackson, K., (2013) *Qualitative Data Analysis with NVivo* SAGE, Social Science - 328 pages.
- Becker, G. S. (2007) *Economic Theory*. Aldine Transaction; 2nd Enlarged edition
- Benbasat, I., Goldstein, D.K. and Mead, M., (1987) The Case Research Strategy in *Studies of Information Systems, MIS Quarterly*, Vol. [11], No. 3, pp. 369-386.
- Benjamin, L., Heejin, L. and Sherah, K. (2007) Exploring the Reasons for a Failure of Electronic Payment Systems: A Case Study of an Australian Company, *Journal of Research and Practice in Information Technology*, Vol. [39], No. 4.
- Benjamin, L., Heejin, L. and Sherah, K. (2006) Why did an Electronic Payment System Fail? A Case Study from the System Provider's Perspective, Department of Information Systems University of Melbourne.
- Bernard, H. R., (1995) *Research Methods in Anthropology*, 2<sup>nd</sup>. London: Sage Publications.
- Bernstein, R. J. (1985) *Beyond objectivism and relativism: Science, hermeneutics, and praxis*. Philadelphia: University of Pennsylvania Press.
- Bertaux, D. (1981) From the life-history approach to the transformation of sociological practice. In *Biography and society: The life history approach in the social sciences*, ed. by D. Bertaux, pp.29–45. London: Sage.
- Blismas, N., and Dainty, A., (2003) "Computer-aided Qualitative Data Analysis: Panacea or Paradox?" *Building Research and Information*, Vol. [31], No.6, pp.455-463.
- Bloor, M. and Wood, F. (2006) *Keywords in Qualitative Methods: A Vocabulary of Research Concepts*, Sage Publications Ltd.

- Boucher, D., Kelly, P. (2003) *Political Thinkers: From Socrates to the Present*, Oxford, Oxford University Press, 2003 (2nd ed. 2009).
- Bourlai, T., Kittler, J. and Messer, K. (2006) Database Size Effects on Performance on a Smart Card Face Verification System. The 7th International Conference on Automatic Face and Gesture Recognition (FGR'06).
- Bradford M, Roberts D., (2001) Does your ERP system measure up? *Strategy Finance* , Vol. [83], No.3, pp. 30–5.
- Briggs, A., and Brooks, L. (2011) Electronic Payment Systems Development in a Developing Country: The Role of Institutional Arrangements. *The Electronic Journal of Information Systems in Developing Countries*, Vol. [49].
- Bryman, A., (2001) *Social Research Methods*. New York, Oxford University Press.
- Bryman, A. (2012) *Social research methods*. Oxford university press.
- Carpenter, D. (2011) Grounded theory as method. In: Surrena, H (ed). *Qualitative research in nursing*. Philadelphia: Lippincott williams & wilkins, pp.123-139.
- Carter, L., and Bélanger, F. (2005) The utilization of e -government services: citizen trust, innovation and acceptance factors. *Information Systems Journal*, Vol. [15], No.1, pp.5-25.
- Catherine, L. M. (2000) Electronic commerce in developing countries: Issues for Domestic Policy and WTO Negotiations. Institute for International Economics.
- Celuch, K., Goodwin, S. and Taylor, S. A. (2007) Understanding small scale industrial user internet purchase and information management intentions: A test of two attitude models. *Industrial Marketing Management*, Vol. [36], pp.109 – 120
- Central Bank of Libya (CBL) (2014): available at,  
[http://cbl.gov.ly/eng/index.php?option=com\\_content&view=article&id=289:cbl-](http://cbl.gov.ly/eng/index.php?option=com_content&view=article&id=289:cbl-)

launches-the-national-payments-system-a-total-renovation-of-banking-  
infrastructure&catid=1:latest-news [Accessed at December, 2014]

Central Bank of Nigeria (CBN) (2011): available at,

<http://www.cenbank.org/Paymentsystem/evolution.asp> [Accessed at November,  
2011]

Chakrabarti, R., and Kardile, V. (2002) *The Asian manager's handbook of e-commerce*.  
New Delhi, Tata McGraw-Hill Pub.

Chakraborty I., Hu P.J.-H., & Cui D. (2008) Examining the effects of cognitive style in  
individuals' technology use decision making. *Decision Support Systems*. Vol.  
[45], pp. 228-241.

Changsu, K., Wang, T., Namchul, S. and Ki-Soo, K. (2010) An empirical study of  
customers' perceptions of security and trust in E-payment systems.

Charmaz, K. (2014) *Constructing grounded theory*. Sage.

Charmaz, K., (2006) *Constructing Grounded Theory: A Practical Guide through  
Qualitative Analysis (Introducing Qualitative Methods series)* New Delhi,  
SAGE.

Chaudhury, A., and Kuilboer, J. P. (2002) *E-business and e-commerce infrastructure:  
technologies supporting the e-business initiative*. Boston, Mass. [u.a.], McGraw-  
Hill/Irwin.

Chaum, D., Den Boer, B., Van Heyst, E., Mjolsnes, S. and Steenbeek, A., (1989)  
*Efficient offline electronic check*. LNCS, Vol. [434], Springer-Verlag, pp. 294-  
301.

- Chavosh, A., Bagherzad, A. H., and Espahbodi, S., (2011) Comparing the Satisfaction with the Banks E-payment. *International Journal of e-Education, e-Business, e-Management and e-Learning*, Vol. [1], No.2, pp. 103-109.
- Chavosh, A., Halimi, A., and Espahbodi, S., (2011) Comparing the Satisfaction with the Banks E-payment Services between Degree Holder and Non-Degree Holder Customers in Penang-Malaysia, *International Journal of e-Education, e-Business, e-Management and e-Learning*, Vol. [1], No. 2.
- Chen, W.S., and Hirschheim, R., A., (2004) paradigmatic and methodological examination of information systems research from 1991 to 2001, *Information Systems Journal*, Vol. [14], No. 3, pp.197–235.
- Cheng, A., Ab hamid, N., and Cheng, E., (2011) Risk Perception of the E-Payment Systems: A Young Adult Perspective, WSEAS international conference on Recent Researches in Artificial Intelligence, Knowledge Engineering and Data Bases, pp.121-127.
- Cheng, J., Sheen, G., and Lou, G., (2006) Consumer acceptance of the Internet as a channel of distribution in Taiwan: A channel function perspective. *Technovation*, Vol. [26], No. 7, pp. 856-864.
- Cheng, S., (2004) Electronic commerce adoption by small and medium sized enterprises in Australia: an empirical study of influencing factors, *Proceedings of the European Conference of Information Systems (ECIS)*, Turku, Finland.
- Cheng, Y., Kuo-Hua, H., and Pei-Jen, K. (2002) Electronic payment systems: an analysis and comparison of types, *Technology in Society*, Vol. [24], pp.331-347.

- Chinedu Eze, S., Duan, Y., and Chen, H. (2014) Examining emerging ICT's adoption in SMEs from a dynamic process approach. *Information Technology & People*, Vol. [27], No.1, pp. 63-82.
- Chiovitti, R., and Piran, N. (2003) Rigour and grounded theory research. *Journal of Advanced Nursing*, Vol. [44], No. 4, pp. 427-435.
- Chong, S. (2008) Success in electronic commerce implementation: A cross-country study of small and medium-sized enterprises. *Journal of Enterprise Information Management*. Vol. [21], pp. 468-492.
- Coffey, A., and Atkinson, P., (1996) *Making Sense of Qualitative Data*. London: Sage.
- Cohen, L., Lawrence, M., and Morrison, K., (2000) *Research Methods in Education* (5<sup>th</sup> Edition.). London.
- Cohen, L., Manion, L., and Morrison, K., (2000) *Research Methods in Education*, Publisher: Routledge Falmer. London.
- Coleman, G., & O'Connor, R., (2007) Using grounded theory to understand software process improvement: A study of Irish software product companies. *Information and Software Technology*, Vol. [49], pp. 654-667.
- Collis, J. and Hussey, R. (2009), *Business Research*, Palgrave Macmillan, Basingstoke.
- Collis, J., and Hussey, R., (2003) *Business Research: A practical guide for undergraduate and postgraduate students*. 2nd edition, Palgrave Macmillan: New York. Competence on Championing IT, *Information Systems Research*, Vol. [14], No. 4, pp.317-336.
- Coochian, H. (2004) *Research methods and statistics in psychology*. 5<sup>th</sup> edition. London: Hodder Arnold.

- Cooper, R. B. and Zmud, R. W. (1990) Information technology implementation research: A technological diffusion approach, *Management Science*, Vol. [36], No. 2, pp. 123-39.
- Council of Islamic Bank (2005) Islamic banking and finance. Council of the Securities
- Crano, W. D., and Brewer, M. B., (2002) *Principles and methods of social research*. Mahwah, N.J., Lawrence Erlbaum publisher. E-book 2<sup>nd</sup> edition.
- Creswell, J.W., (2013) Research design. Qualitative, quantitative and mixed methods approach. Thousand Oaks, CA: Sage.
- Csaki, C., O'Brien, L., Giller, K., Tan, K., Carthy, J., and Adam, F., (2012) Cash or non-cash: that is the question – the story of E-payment for social welfare in Ireland part 2, *May 8<sup>th</sup> -9<sup>th</sup> 2012, Brunel University, United Kingdom*.
- Currie, W., (2009) Contextualising the IT artefact: towards a wider research agenda for IS using institutional theory. *Information Technology and People*, Vol. [22], No. 1, pp. 63-77.
- Cvrilje, D., and Ćorić, T. (2010) Macro & micro aspects of standard of living and quality of life in a small transition economy: The case of Croatia. *EFZG Working Paper Series, 1002*.
- [http://www.ehp.lu/uploads/media/LFR\\_3\\_The\\_growing\\_trend\\_for\\_Shariah\\_compliant\\_funds\\_-\\_Can\\_UCITS\\_tap\\_this\\_burgeoning\\_market.pdf](http://www.ehp.lu/uploads/media/LFR_3_The_growing_trend_for_Shariah_compliant_funds_-_Can_UCITS_tap_this_burgeoning_market.pdf)
- Daft, R.L and Armstrong, A., (2009) Organization Theory and Design. Toronto:Nelson
- Dahlberg, T., Huurros, M., and Ainamo, A., (2008) Lost opportunity: Why has dominant design failed to emerge for the mobile payment services market in Finland? Proceedings of 41st Hawaii International Conference on System Sciences, January 2008.



- Dahlberg, T., Mallat, N., Ondrus, J., Zmijewska, A., (2007) Past, present and future of mobile payments research:Elsevier B.V. Electronic Commerce Research and Applications, pp. 1-17.
- Dahms, S., and Dubey, A. R. (2014) Internet adoption in travel agents across the United Arab Emirates (UAE). Evidence from four Emirates. *Anatolia*, (ahead-of-print), pp. 1-4.
- Dai, X., and Grundy, J., (2007) NetPay, an off-line, decentralized micro-payment system for thin-client applications. *Electronic Commerce Research and Applications*, Vol. [6], pp. 91-101.
- Dakela,S., (2011) Web Analytics strategy: a model for adopting and implementing advanced Web Analytics, University of Cape town, pp. 1-618.
- Dalvand, M. R., Nejat, A., Nouraei, M., Jahromi, A. M., & Zohdi, M. H. (2014) Feasibility study of implementing electronic commerce in petrochemical industries with a case study. *International Journal of Business Information Systems*, Vol. [17], No.2, pp. 248-259.
- Daniel, Amor (2002), *E-Business (R) evolution*, New York: Prentice Hall.
- Darke, P., Shanks, G. and Broadbent, M. (1998) Successfully Completing Case Study Research: Combining Rigour, Relevance and Pragmatism, *Information Systems Journal*, Vol. [8], pp. 273-289.
- David, B., (2003), *Ecommerce comes to Asia*, *Traffic World*, Vol. [26], No.9.
- David, M., and Sutton C.D., (2004) *Social Research the Basics*. London: SAGE Publications.

- Davis, F., Bagozzi, R. and Warshaw, P. (1989) User acceptance of computer technology: comparison of two theoretical models, *Management Science*, Vol. [35], No.6, pp. 982-1003.
- Davis, F.D., (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, Vol. [13], No.3, pp.319-340.
- De Vos, A. S (2002) *Research at grassroots for the social science and the helping profession*: J.L. van Schaik: Pretoria.
- Denscombe, M., (2007) *The Good Research Guide for small-scale social research projects*. Second ed., Open University Press, McGraw-Hill Education.
- Denzin, N. K., and Lincoln, Y. S., (2000) *Handbook of qualitative research* (2<sup>nd</sup> edition.). Thousand Oaks, CA: Sage Publication Inc.
- Devi, P. A., and Malarvizhi, V., (2010) Customers' Perception of E-Banking: Factor Analysis (November 17, 2010). *The IUP Journal of Management Research*, Vol. [IX], No. 6, pp. 7-19, October 2010. Available at SSRN: <http://ssrn.com/abstract=1710449>
- Dewan, S. and Kraemer, K.L., (2000) Information technology and productivity: Evidence from country-level data, *Management Science* Vol. [46], No. 4, pp. 548-562.
- Djamasbi, S., Strong, D. M., and Dishaw, M. (2010) Affect and acceptance: Examining the effects of positive mood on the technology acceptance model. *Decision Support Systems*, Vol. [48], No. 2, and pp.383-394.
- Dolan, T. E. (2014) Potemkin Portals or the Real Revolution? The State of E - Government in Egypt. *Digest of Middle East Studies*, Vol. [23], No.1, pp.105-127.

- Doty, D. H., and Glick, W. H. (1994) Typologies as a Unique Form of Theory Building: Towards Improved Understanding and Modeling, *Academy of Management Review* Vol. [19], No. 2, pp. 230-251.
- Douglas, D. (2003) Grounded theories of management: A methodological review, *Management Research News*, Vol. [26], pp. 44-60.
- Dwivedi, Y.K., Williams, M.D., Lal, B. and Schwarz, A., (2008) Profiling adoption, acceptance, and diffusion research in the information systems discipline. In: 16<sup>th</sup> European Conference on Information Systems: ECIS 2008, Galway, Ireland.
- Economist, The (2014) Islamic finance, Big interest, no interest, Vol. [412], No. 8904 , pp.75-76.
- Egger, F., (2003) From Interactions to Transactions: Designing the Trust Experience for Business-to-Consumer Electronic Commerce. Ph.D. Thesis. Eindhoven University of Technology, the Netherlands.
- Elbasir, M., Howley, R., Stahl, B., (2013) Impact of economic factors on adoption of E-payment system in Libya, Euro-American Conference for Academic Disciplines, Paris.
- Elbasir, M., Howley,R., (2013) A grounded theory analysis of the influence of economic factors on the adoption of E-payment systems in Libya, *International Journal of Business and Management Studies*, ISSN: 2158-1479, Vol. [2], No.2, pp.573-591.
- El- Kasheir, D., Ashour, A., and Yacout, O., (2009) Factors Affecting Continued Usage of Internet Banking Among Egyptian Customers Communications of the IBIMA, Vol. [9], and pp. 252-263.

- Elzawi, A., and Wade, S. (2012) Barriers to ICT adoption in quality of engineering research in Libya: how to bridge the digital divide?, pp. 98-103.
- Eriksson, K., Kerem, K., and Nilsson, D. (2008) The adoption of commercial innovations in the former Central and Eastern European markets: The case of internet banking in Estonia. *International Journal of Bank Marketing*, Vol. [26], No. 3, pp.154-169.
- European Central Bank, (2003) Electronification of payments in Europe, *Monthly Bulletin*, May, Frankfurt Main. Online, available at:  
<http://www.ecb.int> [Accessed at September 2010).
- Ezeoha, A. E. (2006) Regulating Internet Banking in Nigeria: Part 2 – Some Success Prescriptions, *Journal of Internet Banking and Commerce*, March 2006, Vol. [11], No. 1.
- Fay, B., (1987) An Alternative View: Interpretive Social Science, in M. T. Gibbons (Ed.), *Interpreting Politics*, New York University Press, New York, pp. 82-100.
- Feller, G., (2005) ICT Policy of Ethiopia: changing positively', *Information for Development (I4D)*, Vol. [3], No.6, pp. 28-29.
- Fernandez, W. D., Lehmann, H. P., and Underwood, A., (2002), Rigour and Relevance in Studies of IS Innovation: A Grounded Theory Methodology Approach. *Proceedings of the Tenth European Conference on Information Systems*, Gdansk, Poland, 6-8, pp. 110-119.
- Fernandez, W.D., (2004), Using the Glaserian Approach in Grounded Studies of Emerging Business Practices, *Electronic Journal of Business Research Methods*, Vol. [2], No. 2, pp. 83-94.

- Fishbein, M. and Ajzen, I. (1975) *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Frambach, R.T. and Schillewaert, N. (2002) Organizational innovation adoption: a multi-level framework of determinants and opportunities for future research, *Journal of Business Research*, Vol. [55], No. 4, and pp. 163-76.
- Freeman, R.E (1984) *Strategic Management: A stakeholder Approach*. Boston, MA: Pitman.
- Freeman, R.E (2004) *A Stakeholder Theory of Modern Corporations, Ethical Theory and Business*, 7<sup>th</sup> edition.
- Frey, J. and Harold-Harrison, O. (2006) *Our World: At the dawn of a new era*. United world online, available at: <http://www.unitedworld-usa.com/pdf/libya.pdf> [Accessed at July 2010].
- Friedman, A.L. and Miles, S. (2006) *Stakeholders: Theory and Practice*, Oxford University Press.
- Friedman, M. (1974) Explanation and Scientific Understanding, *Journal of Philosophy* Vol. [71], No. 1, 1974, pp. 5-19.
- Fung, B., Molicco, M., and Stuber, G. (2014) *Electronic Money and Payments: Recent Developments and Issues*. Bank of Canada Discussion Paper.
- Gagnon, M. P., Desmartis, M., Labrecque. M., Car. J., Pagliari. C., Pluye. P., Frémont. P., Gagnon. J., Tremblay. N., Légaré. F., (2012) Systematic review of factors influencing the adoption of information and communication technologies by healthcare professionals, *Springer Science Business Media*, Vol. [36], No., 1, pp. 241–277.

- Garicano, L. (2001) The Effects of Business-to-Business e-Commerce on Transaction Costs, *The Journal of Industrial Economics*, Vol. [49], No. 4, pp. 463-486.
- General Information Authority (GIA) (2006) Atlas Vital Statistics, pp1-110. Tripoli, Libya. Available at:  
<http://62.68.48.126/upload/Books/books%20gia/Statistical%20Atlas/%20202006%20الحيوية%20الاحصاءات%20اطلس.swf> [Accessed September 2014]
- Gholami, R., Ogun, A., Koh E., and Lim j. (2010) Factors affecting E-payment adoption in Nigeria. *Journal of Electronic Commerce in Organizations*. Vol. [8], pp. 51-67.
- Gibbons, M., (1987) Introduction: the Politics of Interpretation, in M. T. Gibbons (Ed.), *Interpreting Politics*, New York University Press, New York, pp. 1-31.
- Gibbs, J., Kraemer, K.L., and Dedrick, J. (2003) Environment and policy factors shaping global e-commerce diffusion: a cross-country comparison, the *Information Society*, Vol. [19], No.1, pp. 5–18. Also appeared in Applegate, L., and Galliers, R., Degross, J.I. (Eds.) (2002) in: *Proceedings of the 23<sup>rd</sup> International Conference on IS*, Barcelona, Spain.
- Giddens, A., (1979) *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis*, University of California Press, Berkeley, CA.
- Ginige, A, Murugesan, S & P Kanzanis (2001) A road map for successfully transforming SMEs into e-businesses, *Cutter IT Journal*, Vol. [14], No. 5, pp. 39-51.
- Glaser, B., (1978) *Theoretical Sensitivity: Advances in the methodology of grounded theory* Mill Valley CA: Sociology Press.

- Glaser, B., (1992) Basics of grounded theory analysis. Mill Valley, CA: Sociology Press.
- Glaser, B., and Strauss, A., (1967) The discovery of grounded theory: strategies for qualitative research. Chicago, Aldine Pub. Co.
- Gorman, G.E., and Clayton, P., (2005) Qualitative Research for the Information Professional: A Practical Handbook. 2<sup>nd</sup> Edition, London: Facet Publishing.282 pages.
- Goulding, C. (2002) Grounded theory: A practical guide for management, business and
- Graves, T., Chandler, R. B., Royle, J. A., Beier, P., and Kendall, K. C. (2014) Estimating landscape resistance to dispersal. Landscape Ecology, Vol. [29], No.7, pp.1201-1211.
- Gregor, S., (2006) The nature of theory in information systems, MIS Quarterly, Vol. [30], No.2, pp. 611-642
- Guan, S., and Hua, F., (2003) A multi-agent architecture for electronic payment. International Journal of Information Technology and Decision Making, Vol. [2], No.3, pp. 497-522.
- Guba, E., and Lincoln, Y., (1994) Competing paradigms in qualitative research; Ch. 6 in: Denzin and Lincoln (1994) Handbook of Qualitative Research. Sage publishers.USA.
- Gummesson, E. (1991) Marketing-orientation Revisited: The Crucial Role of the Part-time Marketer, European Journal of Marketing, Vol. [25], No. 2, pp. 60-75.
- Guo, J. Z., and Wong, C. W. (2012) A dynamic account payment method for integrating heterogeneous B2C electronic payment systems. In The third international

- workshop on infrastructures and tools for multiagent systems, Jun. 2012, pp. 1-12.
- Gupta, N., and Agrawal, V., (2009) Demystifying the outlook on quality of life: a study through review of literature, international journal of computing and corporate research.
- Guttman, R (2003) Cybercash: the coming era of electronic money. Vol. [26], Landon, market researchers. Thousand Oaks CA: Sage Publications
- Hakkak, M., Vahdati, H., and Biranvand, V. (2013) An extended technology acceptance model for detecting influencing factors: An empirical investigation. Management Science Letters, Vol. [3], No.11, pp. 2795-2804.
- Halaweh, M., (2009) Investigating the factors the influence the effectiveness of E-commerce security context. PhD thesis in E-commerce in Jordan.
- Halkier, B., and Jensen, I. (2011) Methodological challenges in using practice theory in consumption research. Examples from a study on handling nutritional contestations of food consumption. Journal of Consumer Culture, Vol. [11], No.1, pp.101-123.
- Hamed, A. (2009) E-commerce and Economic Development in Libya. University of Wales Institute. PhD thesis in E-commerce and Economic in developing countries.
- Hansen, B., and Kautz, K., (2005) Grounded Theory Applied -Studying Information Systems Development Methodologies in Practice. Proceedings of the 38th Hawaii International Conference on System Sciences, Big Island, HI, US, pp. 3-6.



- Haron, S. and Shanmugam, B. (2001) *Islamic Banking System Concept and Application*, Selanor, Darul Ehsan, Malaysia
- Harrington, A. (2005) *Western Marxism in Modern Social Theory: An Introduction*, Oxford, UK: Oxford University Press, pp. 154-174.
- Harris, H., Guru, B., and Avvari, M., (2011) Evidence of Firms' Perceptions toward Electronic Payment Systems (EPS) in Malaysia, *International Journal of Business and Information*, Vol. [6], No. 2.
- Hartman, A., Sifonis, J., and Kador, J. (2000) *Net Ready: Strategies for Success in the E-economy*, McGraw-Hill, NY.
- Haruna, I. (2012) Challenges of Electronic Payment Systems in Ghana: The Case of e-ZWICH. *American Journal of Business and Management*, Vol. [1], No. 3, pp.87-95.
- Hasan, M., and Dridi, J. (2012) The effects of the global crisis on Islamic and conventional banks: A comparative study. *Journal of International Commerce, Economics and Policy*.
- Hasan, I., Schmiedel, H., and Song, L. (2012) Returns to retail banking and payments. *Journal of Financial Services Research*, Vol. [41], No.3, pp.163-195.
- Hatch, M. J. and Cunliffe, A. (2006) *organization theory: modern, symbolic, and postmodern perspectives*, Oxford University Press, USA; 2nd edition.
- Havinga, P., Smit, G.J.M. and Helme, A., (1996) *Survey of Electronic Payment Methods and Systems*, University of Twente, Department of Computer Science.
- Heath, H., and Cowley, S. (2004) Developing a grounded theory approach: A comparison of Glaser and Strauss. *International Journal of Nursing Studies*, Vol. [41], No.2, pp. 141-150.

- Heijden, H. (2003) Factors influencing the usage of websites: the case of a generic portal in the Netherlands, *Information & Management*, Vol. [40], pp.541-549.
- Heijden, H. V. D., (2010) User Acceptance of Hedonic Information Systems. *MIS Quarterly*, Vol. [28], No. 4, pp.695-704.
- Heng, S. (2007) E-commerce settles for established payment systems: Limited market potential for innovative payment systems, *E-economics*, Deutsche Bank Research, No. 66, May 14.
- Henning, E., Rensburg, W., and Smit, B., (2004) Theoretical frameworks; Ch2: Finding your way in qualitative research. Pretoria: Van Schaik Publishers. Available at <http://aut.researchgateway.ac.nz/bitstream/10292/805/3/GannonE.pdf> [Accessed at June 2015]
- Hernández, B., Jiménez, J., Martín, M., (2010) Customer behaviour in electronic commerce: The moderating effect of e-purchasing experience, *Journal of Business Research*, Vol. [63], pp. 964–971.
- Hoepfl, M. C., (1997) Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education*, Vol. [9], No.1, pp. 47-63.
- Holloway, I., and Biley. F., (2011) Being a Qualitative Researcher. *Qualitative Health Research (QHR)*. Vol. [21] No.7, pp. 968–975.
- Huff, A.S., (1990) Mapping strategic thought, in: A.S. Huff (Ed.), *Mapping Strategic Thought*, Wiley, Chichester, England, pp. 11–49.
- Hughes, J., and Jones, S., (2003) Reflections on the use of Grounded Theory in Interpretive Information Systems Research. 11th European Conference on Information Systems, Naples, Italy, pp.16-21.

- Humphrey, D. B., and Hancock, D. (1997) Payment transactions, instruments, and Systems: A Survey,” *Journal of Banking and Finance*, Vol. [21], pp. 1573-1624.
- Humphrey, D. B., Kim, M., and Vale, B., (2001) Realizing the Gains from Electronic Payments: Costs, Pricing and Payment Choice. *Journal of Money, Credit, and Banking*, Vol. [33], No.2, pp. 216–234.
- Hunaiti, Z., Masa’deh, R., Mansour, M., and Al-Nawafleh, A., (2009) Electronic Commerce Adoption Barriers in Small and Medium-Sized Enterprises (SMEs) in Developing Countries: The Case of Libya, *Ibima Business Review*, Vol. [2], pp. 37-45.
- Hunter, K., Hari, S., Egbu, C., and Kelly, J., (2005) Grounded Theory: Its Diversification and Application Through two Examples from Research Studies on Knowledge and Value Management. *The Electronic Journal of Business Research Methodology* Vol. [3], No.1.
- Hunterl, K., Hariz, S., Egbu, C., and Kelly, J. (2011) Grounded Theory: Its Diversification and Application Through two Examples from Research Studies on Knowledge and Value Management. *Leading Issues in Business Research Methods*, Vol. [1], and No.22.
- IBP (2009) *Doing business and investment in Libya*. World business, investment and government library, published by International business publication Inc. USA.
- Ifinedo, P. (2012) Facilitating the Intention to Expand E-business Payment Systems Use in Nigerian Small Firms: An Empirical Analysis. *E-business–applications and global acceptance*, Vol. [19].
- Iivari, J., Hirschheim, R., and Klein, H. K. (2006) A Dynamic Frame work for Classifying Information Systems Development 636 *MIS Quarterly* Vol. [30],

- No. 3. Gregor/The Nature of Theory in IS Methodologies and Approaches,"  
Journal of Management Information Systems Vol. [17], No.3, 2000 -2001, pp.  
179-218.
- Jackson, E.M. (2006), *The PayPal Wars*, World Ahead Publishing, Los Angeles, CA.
- Jairath, N., Hogerney, M., and Parsons, C. (2000) The role of the pilot study: A case  
illustration from cardiac nursing research. *Applied Nursing Research*, Vol. [13],  
pp.92-96.
- Jamshidi, D., and Hussin, N. (2013) Determining a Conceptual Framework for  
Adoption of Islamic Credit Card in Context of Malaysia, *Journal of Basic and  
Applied Scientific Research*, Vol. [3], No.1, pp.188-196.
- Jasperson, J.S., Carte, T.C., Saunders C. S., Butler B.S., Croes H.J.P., and Zheng W.,  
(2002) Review: Power and information technology research: a met triangulation  
review, *MIS Quarterly*, Vol. [26], No. 4, and pp. 397-459.
- Jayaram, J., & Prasad, P. N. (2013) Review of E-banking System and Exploring the  
Research Gap in Indian Banking Context. *International Journal of Innovative  
Research and Development*, Vol. [2], No.2, pp. 407-417.
- Jennifer, G., Kenneth, L. K., and Jason, D., (2003) Environment and policy factors  
shaping global e-commerce diffusion: a cross country comparison, *Information  
Society*, Vol. [19], No. 1, pp.5–18.
- Johnes, J., Izzeldin, M., and Pappas, V. (2014) A comparison of performance of Islamic  
and conventional banks 2004-2009. *Journal of Economic Behavior &  
Organization*, Vol. [103], pp. S93-S107.

- Joze, K., and Geoffrey A., S. (2003) Electronic Business success factors: Seven large companies, 14<sup>th</sup> Australasian Conference on Information Systems, Perth Western Australia.
- Kalakota, R., (1999). E-Business: A Roadmap for Success, Addison–Wesley, Reading, MA.
- Kalakota, R., and Whinston, A. B. (1996) Electronic Commerce: A Manager's Guide, Addison–Wesley, Reading, MA.
- Kalakota, R., and Whinston, A., (1997) Electronic Commerce: A Manager's Guide, Addison-Wesley, Reading, MA.
- Kannabiran, G. and Dharmalingam, P. (2012) Enablers and inhibitors of advance information technologies adoption by SMEs: an empirical study of auto ancillaries in India, Journal of Enterprise Information Management, Vol. [25], No. 2, pp. 186-209.
- Karahanna E, and Limayem M., (2000) E-mail and V-mail Usage: Generalising across Technologies. J. Org. Comput. Elect. Com., Vol. [10], No.1. pp. 49-66.
- Karen, N., and Brian F., (2002) An Innovative Training Model for an Organization Embracing Technology. Informing Science Institute, pp.193-200.
- Karjaluoto, H., Mattila, M., and Pentto, T. (2002) Factors underlying attitude formation towards online banking in Finland. International Journal of Bank Marketing, Vol. [20], No. 6, pp. 261-272.
- Kelly, P., (2006), Political theory: the state of the art', Politics, Vol. [26], No.1, pp. 47-53.

- Kenan, T., Pislaru, C., and Elzawi, A. (2014) Trends and policy issues for the elearning implementation in Libyan universities. *IJTEF*, London, Vol. [5], No. 1, pp. 105-109.
- Kenny, C., (2002) Information and communications technologies for direct poverty alleviation: costs and benefits, *Development Policy Review*, Vol. [20], No. 2, pp. 141-157.
- Kenny, C., (2003) The Internet and economic growth in less-developed countries: a case of managing expectations? *Oxford Development Studies*, Vol. [31], No. 1, pp. 99-113.
- Kevin Burgess, Don Kerr, Luke Houghton. (2013). Paradigmatic Approaches Used in Enterprise Resource Planning Systems Research: A Systematic Literature Review. *Australasian Journal of Information Systems*. Vol. [18], No.1, pp.1-20.
- Khalfan, A. and Alshawaf, A. (2004) Adoption and Implementation Problems of E-banking: A Study of the Managerial Perspective of the Banking Industry in Oman, *Journal of Global Information Technology Management*, Vol. [7], No.1, pp.47-64.
- Khalfan, A., and Akbar, A. (2006) Adoption and Implementation Obstacles of E-Banking Services: An Empirical Investigation of the Omani Banking Industry, in: Kamel, S. (Ed.) *Electronic Business in Developing Countries: Opportunities and Challenges*, Hershey: Idea Group, pp. 283-302.
- Khalili, H. A., Ebrahimi, S. B., and Nalchigar, S. (2012) Evaluation of E-payment systems in Iran using analytic hierarchy process. *African Journal of Business Management*, Vol. [6], No.19.

- Khazanchi, D., and Munkvold, B. E., (2003) On the rhetoric and relevance of IS research paradigms: a conceptual framework and some propositions. Proceedings of the 36th Hawaii International Conference on Information Systems (HICSS) 252.
- Kılıçer, K., and Odabaşı, H.F., (2010) Individual innovativeness scale (IS): The study of adaptation to Turkish, validity and reliability, Hacettepe University Journal of Education, Vol. [38], pp.150-164.
- Kim, Y., Im I., and Han H., (2008) The effects of perceived risk and technology type on users' acceptance of technologies. Information and Management. Vol. [45], pp. 1-9.
- Kleijnen, M., Wetzels M., and Ruyter K., (2004) Consumer Acceptance of Wireless Finance. J. Financ. Serv. Mark., Vol. [8], No. 3, pp. 206-217.
- Klein, H. K., and Michael D. M., (1999) A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems, MIS Quarterly, Special Issue on Intensive Research, Vol. [23], No.1, pp. 67-93.
- Kshetri, N., (2007) Barriers to E-Commerce and Competitive Business Models in Developing Countries: A Case Study. Electronic Commerce Research and Applications (6), pp. 443-452.
- Kuisma, T., Laukkanen T., and Hiltunen M., (2007) Mapping the reasons for resistance to Internet banking: A means-end approach, International Journal of Information Management, Vol. [27], pp. 75-85.
- Kumaga, D., (2010). The challenges of implementing Electronic Payment Systems: The Case of Ghana's E-zwich Payment System, Master's Thesis in Business Administration, MBA programme.

- Kumar, C., R., (2008) *Research methodology*. New Delhi: APH Pub. Corp., 2008.
- Kurnia, S., and Johnston, R. B., (2001) Adoption of efficient consumer response: the issue of mutuality. *Supply Chain Management*, Vol. [6], No. 5, pp.230 -241.
- Kuzel, A. (1992) Sampling in qualitative inquiry. In *Doing qualitative research*, ed. B. Crabtree and W. Miller, pp.31-44. Newbury Park, CA: Sage.
- Kwortnik, R. J. (2003) Clarifying “fuzzy” hospitality-management problems with depth Interviews and qualitative analysis. *Cornell Hotel and Restaurant Administration Quarterly*, Vol. [44], pp. 117-29.
- Kyari, B., (2009) E-payment service providers oppose National Central Switch, *Business Day online*. Available at:  
[http://www.businessdayonline.com/ARCHIVE/index.php?option=com\\_content&view=article&id=6473:E-payment-service-providers-oppose-national-central-switch-&catid=117:news&Itemid=544](http://www.businessdayonline.com/ARCHIVE/index.php?option=com_content&view=article&id=6473:E-payment-service-providers-oppose-national-central-switch-&catid=117:news&Itemid=544) [Accessed at October 2011]
- Laudon, C., Kenneth, Traver, and Carol, (2002) *E-Commerce*, New Delhi: Pearson Education.
- Laudon, K. and Traver, C. G. (2010) *E-Commerce: Business, Technology, Society*. New Jersey: Prentice Hall.
- Lawrence, E., Newton, S., Corbitt, B., Braithwaite, R., and Parker, C., (2002) *Technology of Internet Business*. John Wiley and Sons Australia Publishing.
- Lawrence, J. E. and Tar, U. A. (2010) Barriers to ecommerce in developing countries. *Information, Society and Justice*, Vol. [3], No. 1, pp. 23-35.
- Lawrence, J., (2010) The Factors that Influence Adoption and Usage Decision in SMEs: Evaluating Interpretive Case Study Research in Information Systems. *Journal of Business Research*, Vol. [8], No. 1, pp. 51 - 62.



- Lee, H.J., Choi, M.S., and Rhee, C.S., (2003) Traceability of double spending in secure electronic cash system. Proceedings of the 2003 International Conference on Computer Networks and Mobile Computing, IEEE Computer Society.
- Lee, M. (2009) Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, Vol. [8], No.3, pp.130-141.
- Lee, M. and Turban, E. (2001) A Trust Model for Consumer Internet Shopping, *International Journal of Electronic Commerce*, Vol.[6], No. 1, pp.75-91.
- Lee, R.M., and Fielding, N.G., (1996) Qualitative data analysis: Representations of a technology. A comment on Coffey, Holbrook and Atkinson. *Sociological Research Online*, vol. [1], No. 4. Available at: <http://www.socresonline.org.uk/socresonline/1/4/1f.html> [Accessed at April 2015].
- Lee, S., (1989) A scientific methodology for MIS case studies. *MIS Quarterly*, Vol. [13], No. 1, pp. 33-50.
- Lee, S., and Kim, K. (2007) Factors affecting the implementation success of Internet-based information systems. *Computers in Human Behaviour*. Vol. [23], pp. 1853-1880.
- Leedy, P. D., and Ormrod, J. E. (2005) *Practical research: Planning and design* (8th Ed.). Upper Saddle River, NJ: Prentice Hall.
- Leedy, P. D., and Ormrod, J. E. (2013) *Practical Research: Pearson New International Edition: Planning and Design*. Pearson Higher Ed.

- Lewis, W., Agarwal, R., and Sambamurthy, V., (2003) Sources of influence on beliefs about information technology use: An empirical study of knowledge workers. *MIS Quarterly*, Vol. [27], No. 4, pp. 657-678.
- Liang, T.P., Ho, S.C., Hu, J.H., and Wu, Y.T. (2004) Effects of national factors and product characteristics on online shopping: a cross-national study, in: *Proceedings of the Third Workshop on E-Business*, Washington, DC, and pp. 509-519.
- Libyan Economic Forum, (2007) Libyan Economic News: available at <http://www.aleqtisadi.net/details.php?id=3745>. [Accessed at October 2011].
- Lin, H., and Wang, Y., (2006) An examination of the determinants of customer loyalty in mobile commerce contexts, *Information and Management*, vol. [43], No. 3, pp. 271-282.
- Linden, T., and Cybulski, J., (2003) Application of Grounded Theory to Exploring Multimedia Design Practices. 7th Pacific Asia Conference on Information Systems, Adelaide, South Australia, pp.10-13.
- Littler, D. Melanthiou, D., (2006) Consumer perceptions of risk and uncertainty and the implications for behaviour towards innovative retail services: the case of internet banking. *J Retailing Consum Serv*, Vol. [13], No. 6, pp.431-443.
- Lo, C., (2008) An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models, *Information and Management*, Vol. [45], no. 6, pp. 359-364.
- LoBiondo-Wood, G., & Haber, J. (2006) *Nursing research: Methods and critical appraisal for evidence-based practice* (6th edition). St. Louis, MO: Mosby

- Locke, K. (2001) *Grounded theory in management research*. Thousand Oaks CA: Sage Publications.
- Lu, Y., Zhou, T., and Wang, B., (2009) Exploring Chinese users' acceptance of instant messaging using the theory of planned behaviour, the technology acceptance model, and the flow theory. *Computers in Human Behaviour*. Vol. [25], pp. 29-39.
- Mack, N., Woodsong, C. M., MacQueen, K. M., Guest, G., and Namey, E. (2005) *Qualitative research methods: A data collector's field guide*. Research Triangle Park, NC: Family Health International.
- Maclean, D., Andjelkovic, M., and Vetter, T. (2007) *Internet governance and sustainable development: towards a common agenda*. Winnipeg, Man, International Institute for Sustainable Development.
- Mahadevan, R., and Suardi, S. (2012) Impact of socio-economic factors and social affiliation on living standards: a quantile regression approach. *Applied Economics Letters*, Vol. [19], No. 13, and pp.1231-1236.
- Malhotra, N.K. and Birks, D.F., (2003) *Marketing Research: An Applied Approach*, Prentice Hall, Harlow.
- Mann, R., (2011) Adopting, Using, and Discarding Paper and Electronic Payment Instruments: Variation by Age and Race, Consumer Payments Research Centre, pp.1-32.
- Mann, R.J. (2004) Regulating internet payment intermediaries. *Proceedings of the 5<sup>th</sup> International Conference on Electronic Commerce*, Pennsylvania, and United States. Vol. [82], No. 3, p. 681.

- Manstead, A. S. R. and Van-Eekelen, S. A. M. (1998) Distinguishing between Perceived Behavioural Control and Self-Efficacy in the Domain of Academic Intentions and Behaviours. *Journal of Applied Social Psychology* Vol. [28], pp. 1375-1392.
- Mao E., and Palvia P. (2008) Exploring the effects of direct experience on IT use: An organizational field study. *Information and Management*. Vol. [45], pp. 249-256.
- Marsh, D., and Stoker, G., (2010) *Theory and methods in political science*, Palgrave Macmillan.
- Marshall, B., Cardon, P., Poddar, A., Fontenot, R., (2013) Does sample size matter in qualitative research? A review of qualitative interviews in is research, *Journal of Computer Information Systems*.
- Martins, C., Oliveira, T., and Popovic, A. (2014) Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, Vol. [34], No.1, pp. 1-13.
- Mayes, G R. (2004) Theories of Explanation," Internet Encyclopaedia of Philosophy, available online at: <http://www.utm.edu/research/iep/e/explanat.htm>.
- Merriam, S. B. (2014) *Qualitative research: A guide to design and implementation*. John Wiley & Sons.
- Meisami, H., and Hasanzadeh, A. (2012) Using Wagf as an Islamic economics institution to present a model of Islamic microcredit compatible with Shia Fiqh. *African Journal of Business Management*, Vol. [6], No.37, 10109.

- McGrath, K., (2005) Doing critical research in information systems: a case of theory and practice not informing each other, *Information Systems Journal*, Vol. [15], NO.2, pp. 85-101.
- McKelvey, B. (1982) *Organizational Systematics - Taxonomy, Evolution, Classification*, University of California Press, Berkeley, CA, 1982.
- Medvinsky, G., and Neuman, B. C. Netcash, (1993) A design for practical electronic currency on the internet. In *Proceedings of the 1st Annual ACM Conference on Computer and Communications Security*, ACM, pp. 102–106.
- Miles, M., and Huberman, A., (1994) *Qualitative data analysis: An expanded source book*, 2nd ed. Thousand Oaks: Sage Publications.
- Milutinović, S., and Nikolić, V. (2014) Rethinking higher education for sustainable development in Serbia: an assessment of Copernicus charter principles in current higher education practices. *Journal of Cleaner Production*, Vol. [62], pp. 107-113.
- Mingers, J., and Willcocks, L. (2004) *Social Theory and Philosophy for Information Systems* John Wiley & Sons, 2004
- Miniwatts Marketing group, (2012) Internet World stats. Available online at: <http://www.internetworldstats.com/stats.htm>
- Moore, G., and Benbasat, I., (1991) Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, Vol. [2], No. 3, pp.192-222.
- Moore, N., (2000) *How to do research: the complete guide to designing and managing research projects*. Library association Publishing.

- Morse, J. (2000) Determining sample size. *Qualitative Health Research*, Vol. [10], pp. 3-5.
- Molla, A., and Licker, P. S. (2005) E-Commerce adoption in developing countries: a model and instrument. *Information & Management*, Vol. [42], No.6, pp.877-899.
- Muffatto, M., and Payaro, A., (2004) Implementation of e-procurement and e-fulfilment processes: A comparison of cases in the motorcycle industry. *International Journal of Production Economics*, Vol. [89], pp. 339–351.
- Muller-seitz, G., Dautzenberg, K., Creusen, U., and Stromereder, C., (2009) Customer acceptance of RFID technology: Evidence from the German electronic retail sector. *Journal of Retailing and Consumer Services*. Vol. [16], pp. 31-39.
- Murthy, C., (2002) *E-Commerce: Concepts, Models and Strategies*, New Delhi: Himalaya Publishing House, p. 626.
- Myers, M. and Klein, K., (1999) A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*. Vol. [23], pp.67-93.
- Myers, M. D., (1997) Qualitative Research in Information Systems. *MIS Quarterly*, Vol. [21], No.2, pp. 241-242. MISQ Discovery, archival version. [http://www.misq.org/discovery/MISQD\\_isworld/](http://www.misq.org/discovery/MISQD_isworld/). MISQ Discovery, updated version, last modified: May 13, 2010 [www.qual.auckland](http://www.qual.auckland).
- Myers, M., and Avison, D., (2002) *Qualitative Research Information System*. SAGA Publication Ltd, London.
- Nagel, E (1979) *The Structure of Science*, Hackett Publishing Co., Indianapolis, Inc; 2<sup>nd</sup> revised edition.

- Nasri, W. (2011) Factors influencing the adoption of internet banking in Tunisia. *International Journal of Business and Management*, Vol. [6], No. 8, p.143.
- Neuman, C., (1995) Security, Payment, and Privacy for Network Commerce, IEEE Journal on Selected Areas in Communications, Vol. [13], No.8, pp. 1523-1531.
- Neuman, C., (2007) Managing Multiple Perspectives on Trust, in proceedings of the 2007 Cyber Security and Information Infrastructure Research Workshop, Oak Ridge Tennessee.
- Nimran, U., Idrus, M. S. I., and Utami, H. N. (2015) Antecedents of E-Commerce Use in The Hospitality Industry: An Empirical Study in Indonesia. *European Journal of Business and Management*, Vol. [7], No. 11, pp. 1-10.
- Nissan, E., and Schmidt, K., (1995) From Information to Knowledge, Conceptual and Content Analysis by Computer, Intellect Ltd.
- Noda, T., and Collis, D.J., (2001) The evolution of industry firm heterogeneity: insights from a process study, *Academy of Management Journal*, Vol. [44], No. 4, pp. 897-925.
- Noman, A. H. M. (2015) An Empirical Investigation of the Profitability of Islamic Banks in Bangladesh. *Global Journal of Management and Business Research*, Vol. [15], No. 4.
- Noor raihan A., and Cheng, A., (2013) A Risk Perception Analysis on the use of Electronic Payment Systems by Young Adult, *Wseas transactions on information science and applications* Vol. [10], No.1.
- Norman K. Denzin, Yvonna S. Lincoln (2011). *The SAGE Handbook of Qualitative Research*. London: SAGE Publications, Inc. 784

- Nor, K. M., Nazarie, W. N. W. M., and Yusoff, A. A. (2013) Factors influencing individuals' trust in online purchase through social networking sites. In *e-Commerce in Developing Countries: With Focus on e-Security (ECDC), 2013 7th International Conference on* (pp. 1-18) IEEE.
- Norazah M, Suki (2006) Consumer Innovation and Adoption of On-line Shopping: Malaysian Internet User's Prospective, PhD Thesis, Multimedia University, Malaysia.
- Oates, B. J. (2006) *Researching Information Systems and Computing*, SAGE Publication; London.
- OECD (2006) Online Payment Systems for E-commerce, *OECD Digital Economy Papers*, No. 117, OECD publishing.
- Odedra, M., (1991) Information technology transfer to developing countries: Is it really taking place? Berleur J, Drumm J (Eds.) Information technology assessment, North-Holland, pp. 139-149.
- Oh, S., (2006). A Stakeholder Perspective on Successful Electronic Payment Systems Diffusion, *Proceedings of the 39<sup>th</sup> Annual Hawaii International Conference on System Sciences*, Vol. [8], pp.186b.
- Oh, S., Kurnia, S., Johnston, R.B., Lee h. and Lim, B. (2006) A stakeholder perspective on successful electronic payment systems diffusion, Hawaii International Conference on Systems Sciences (HICSS-39), Hawaii.
- Okoli, C., (2003) A framework for assessing E-commerce in Sub-Saharan Africa. *Journal of Global Information Technology Management Special Issue: E-commerce and economic and social development*, pp. 1-32.



- O'Mahony, D., Peirce, M. and Tewari, H., (2002) *Electronic payment systems for e-commerce*, Artech House.
- Onion, P., (2006) Grounded Theory Applications in Reviewing Knowledge management Literature in 163 postgraduate research conference, Methodological issues and ethical consideration. Leeds Metropolitan University of Leeds, UK.
- Orlikowski, W. J., (1993) Case tools as organisational change: Investigating Incremental and Radical Changes in Systems Development. *MIS Quarterly*, Vol. [17], No. 3, pp. 309-340.
- Orlikowski, W.J. and Baroudi, J.J., (1991) Studying Information Technology in Organizations: Research Approaches and Assumptions, *Information Systems Research* Vol. [2], pp. 1-28.
- Ovat, O., (2012) The Central Bank of Nigeria's Cashless Policy in Nigeria: Benefits and Challenges. *Journal of Economics and Sustainable Development* [www.iiste.org](http://www.iiste.org) ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online). Vol. [3], No.14.
- Ozkan, S., Bindusara, G., and Hackney, R. (2009) Towards successful E-payment systems: an empirical identification and analysis of critical. *Information Systems*, pp. 1-17.
- Özkan, S., Bindusara, G., and Hackney, R. (2010) Facilitating the adoption of E-payment systems: theoretical constructs and empirical analysis. *Journal of Enterprise Information Management*. Vol. [23], No. 3, pp.305 - 325.
- Ozuru, H. N., Chikwe, J.E and Idika Uduma, (2010) The use of traditional payments and electronic payment systems in Nigeria, 11<sup>th</sup> Annual International Conference Held at: Peninsular Resort Limited Lekki, Lagos, pp. 8-15.

- Padachi K., Rojid S., and Seetanah B., (2008) investigating into the factors that influence the adoption of internet banking in Mauritius, *Journal of Internet Business*.
- Panigrahi, S., Kundu, A., Sural, S., and Majumdar, A., (2009) Credit card fraud detection: A fusion approach using Dempster–Shafer theory and Bayesian learning, Publisher: Information Fusion, Vol. [10], pp. 35-363.
- Pariwat, S., and Hataiseree, R. (2004) The use of cash, cheques and electronic payment services in Thailand: Changes and challenges for efficiency enhancement. Working paper, Payment systems Groups, pp. 2-73.
- Patton, M. Q., (2002) *Qualitative evaluation and research methods* (3<sup>rd</sup> Edition). Thousand Oaks, CA: Sage Publications, Inc. Research methods.
- Pavlou, P.A. and Chai, L. (2002) What Drives Electronic Commerce across Cultures? A Cross-Cultural Empirical Investigation of the Theory of Planned Behaviour, *Journal of Electronic Commerce Research*, Vol. [3] No.4, pp. 240-253.
- Peha, J. M., and Khamitov, I. M., (2004) Pay Cash: a secure efficient internet payment system. *Electronic Commerce Research and Applications*, Vol. [3], pp.381-388.
- Pickard, A. J. (2013) *Research methods in information*. Facet Publ.
- Prescott, P.A., and Soeken, K.L. (1989) The potential uses of pilot work. *Nursing Research*, Vol. [38], pp.60-62.
- Peterson, D., and Howard, C., (2012) Electronic Payment Systems Evaluation: A Case Study to Examine System Selection Criteria and Impacts." *International Journal of Strategic Information Technology and Applications (IJSITA)*. Vol. [3], No. 1, pp. 66-80.

- Phillip, C., (2005) *Window on Humanity: A Concise Introduction to General Anthropology*. New York, McGraw Hill (pp. 2-3, 16-17, 34-44).
- Pigato, M., (2000) *Information and Communication Technology, Poverty and Development in sub-Saharan Africa and South Asia*, World Bank, Washington, DC.
- Pons, A. (2004) E-government for Arab countries. *Journal of Global Information Technology Management*, Vol. [7], No.1, pp. 30-46.
- Punch, K. F. (2013) *Introduction to social research: Quantitative and qualitative approaches*. Sage.
- Qiu L., and Li D. (2008) Applying TAM in B2C E-Commerce Research: An Extended Model. *Tsinghua Science and Technology*. Vol. [13], pp. 265-272.
- Ramanathan, C., Gayal, N., Sheth, M., & Pendyala, A. (2011) A system for managing SCORM-compliant learning objects. In *Technology for Education (T4E), 2011 IEEE International Conference on* (pp. 208-211) IEEE.
- Raza, S. A., and Hanif, N. (2013) Factors affecting internet banking adoption among internal and external customers: a case of Pakistan. *International Journal of Electronic Finance*, Vol. [7], No.1, pp. 82-96.
- Rhema, A., and Miliszewska, I., (2010) Towards E-Learning in Higher Education in Libya Higher Education Context in Libya. *Issues in Informing Science and Information Technology*, Vol. [7], pp.423-437.
- Rhema, A., Miliszewska, I., and Sztendur, E. (2013) Attitudes towards e-learning and satisfaction with technology among engineering students and instructors in Libya. In *Proceedings of the Informing Science and Information Technology Education Conference*, Vol. [2013], No. 1, pp. 157-171.

- Rhodes, J., (2003) Can e-commerce enable marketing in an African rural women's community based development organization? *Informing Science Journal*. Vol. [6], pp. 157-172.
- Ritendra, G., (2008) *E-commerce*. Publisher: New Age Publications (Academic).
- Riyadh, A., Akter, S., and Islam, N., (2009) The adoption of e-banking in developing countries: A Theoretical model for SMEs. *International Review of Business Research Papers*, Vol. [5], No. 6.
- Robbins, S. P., and Judge, T. (2011) *Essentials of Organizational Behaviour*, Prentice Hall; 11 edition.
- Rogers, E. M. (1983) *Diffusion of innovations* (3<sup>rd</sup> Edition.). New York: Free Press
- Rogers, E. M., and Shoemaker, F. F. (1971) *Communication of Innovations; A Cross-Cultural Approach*.
- Rose, A., (1999) *One Money, One Market: Estimating the Effect of Common Currencies on Trade*. Cambridge, MA, National Bureau of Economic Research.
- Romney, A.K., Weller, S.C., Batchelder, W.H. (1986) Culture as consensus: a theory of culture 880 and informant accuracy. *American Anthropologist*, Vol. [88], pp. 313-338.
- Rose, G., Khoo, H., and Straub, D., (1999) Current Technological Impediments to Business-to-Consumer Electronic Commerce, *Communications of the AIS*, Vol. [1], No. 16, and pp. 1-74.
- Rosen, C. (2001) The e-buck stops here, *InformationWeek*, Vol. [840], pp. 55-58.
- Rouibah, K. (2012) Trust factors influencing intention to adopt online payment in Kuwait. *Proceedings of the Southern Association for Information Systems Conference*. Atlanta, GA, USA March 23<sup>rd</sup> -24<sup>th</sup> , pp. 195-202

- Rouibah, K., Hamdy, H.I., and Al-Enezi, M.Z., (2009) Effect of management sport, training, and user involvement on system usage and satisfaction in Kuwait. *Industrial Management & Data Systems*, Vol. [109], No. 3, pp. 338-356.
- Roycroft, T., and Anantho, S., (2003) Internet Subscription in Africa: policy for a dual digital divide" *Telecommunications Policy*, Vol. [27], No. 1, pp. 61-74.
- Saeed, K. A., and Bampton, R. (2013) The Impact of Information and Communication Technology on the Performance of Libyan Banks. *Journal of WEI Business and Economics-December*, Vol. [2], No. 3.
- Saeed k.A., and Abdinnour-helm S. (2008) Examining the effects of information system characteristics and perceived usefulness on post adoption usage of information systems. *Information and Management*. Vol. [45], pp. 376-386.
- Salisbury, W.D., Pearson, R. A., Pearson, A.W., and Miller, DW. (2001). Perceived security and World Wide Web purchase intention, *Industrial Management & Data Systems*, Vol.[101], No.4, pp. 165-177
- Samad, A. (2013) Are Islamic Banks Immune from Global Financial Crisis: Evidences from 16-Cross-Country Islamic Banks.
- Sangle S. (2010) Critical success factors for corporate social responsibility: a public sector perspective. *Corporate Social Responsibility and Environmental Management*, Vol. [17]. pp. 205-214.
- Sarrab, M., Elbasir, M., Elgamei, L., (2013a) The Technical, Non-technical Issues and the Challenges of Migration to Free and Open Source Software, *IJCSI*

- Sarrab, M., Elbasir, M., Aldabas, H., (2013b) Challenges of Computer Crime Investigation In North Africa's Countries, The 14th International Arab Conference on Information Technology Organized by Sudan University of Science and Technology, Khartoum - Sudan, Date: 17-19 /12/2013
- Sathye, M. (1999) Adoption of Internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing*, Vol. [17], No. 7, pp. 324-334.
- Schensul, S. L., Schensul, J. J., and LeCompte, M. D. (2013) *Initiating Ethnographic Research: A Mixed Methods Approach*. Vol. [2]. Rowman & Littlefield.
- Schmid, B., Stanoevska-Slabeva, K., and Tschammer, V., (2001) Towards the E-society: E-commerce, E-business and E-government (IFIP Advances in Information and Communication Technology). Publisher: Springer, p.7.
- Schneider, G. (2007) *Electronic Commerce*. Thomson Course Technology, Canada.
- Schneider, G., (2007) *Electronic Commerce*. 7<sup>th</sup> Annual Edition, Thomson Course Technology, Chapter 5, pp. 217-259, Canada.
- Scott, W.R., (2004) *Institutions and Organizations*, Sage, Thousand Oaks, CA, 2001.
- Schwartz, E.I. (2001), Digital cash payoff, *Technology Review*, Vol. [104], No.10, pp. 62–68.
- Seemann, K. (2003) Basic principles in holistic technology education. *Journal of Technology Education*, Vol. [14], No.2, pp. 28-39.

- Shaaban, E., Alireza, H., (2009) A framework for evaluating electronic commerce adoption in Iranian organizations *International Journal of Information Management* Vol. [29], pp. 27–36.
- Shank, G., (2002) *Qualitative Research. A Personal Skills Approach*. Upper Saddle River, New Jersey: Merrill Prentice Hall.
- Shittu, O. (2010) The Impact of Electronic Banking in Nigeria Banking System: Critical Appraisal of Unity Bank Plc. Unpublished MBA project, Ladoke Akintola University of Technology, Ogbomoso, Oyo State Nigeria.
- Shin, J. I., Chung, K. H., Oh, J. S., & Lee, C. W. (2013) The effect of site quality on repurchase intention in Internet shopping through mediating variables: The case of university students in South Korea. *International Journal of Information Management*, Vol. [33], No.3, pp. 453-463.
- Shon, T., Swatman, P., (1998) Identifying effectiveness criteria for internet payment systems, *Internet Research: Electronic Networking Applications and Policy*, Vol. [8], No. 3, pp. 202-218.
- Simon, .F, and William, W., (2005) National competitive advantage in e-commerce efforts: a report from five Caribbean nations’ perspectives, *Global Development and Technology*, Vol. [4], No. 1, pp. 27-44.
- Simpson, B. (2004) What’s next for electronic payments? *Collections & Credit Risk*, Vol. [9], No.3, pp. 22-26.
- Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) (2009), National Report: Lagos. UNDP, (2006) "Global partnership for development" UNDP Annual Report 2006.

- Sobal, J. (2001) Sample extensiveness in qualitative nutrition education research. *Journal of Nutrition Education*, Vol. [33], pp. 184-192.
- Stahl, B. C. and Brooke, C. (2008) The contribution of critical IS research, *Communications of the ACM*, Vol. [51], No.3, pp.51-55.
- Stanage, S. M., (1987) Adult education and phenomenological research: New directions for theory practice and research. Malabar, FL: Robert E. Krieger.
- Stansfield, M., & Grant, K. (2003) An Investigation into Issues Influencing the Use of the Internet and Electronic Commerce among Small-Medium Sized Enterprises. *J. Electron. Commerce Res.*, Vol. [4], No. 1, pp.15-33.
- Stephen, H., (2004) Comparison of B2C E-commerce in developing countries, *Electronic Commerce Research*, Vol. [14], No. 3, p. 181.
- Strauss, A. L., (1987) *Qualitative analysis for social scientists*, Cambridge University Press (Cambridge Cambridgeshire and New York).
- Strauss, A., and Corbin, J., (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. SAGE Publication, London.
- Strauss, A., and Corbin, J., (1998) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. SAGE Publication, London.
- Sumanjeet, S. (2009) Emergence of payment systems in the age of electronic commerce: The state of art, *Global Journal of International Business Research* Vol. [2]. No. 2, pp.17-36. .
- Sumanjeet, S., (2009) Emergence of payment systems in the age of electronic commerce: the state of art, *Asia Pacific Journal of Finance and Banking Research* Vol. [3], No. 3.



- Suzy, K. P. (2008) Report on Wilton Park Conference WP924 Libya 2020: Future Perspectives, pp. 1-14, Wilton Park.
- Swaminathan, V., Lepkowska-White, E., and Rao, B., (1999) Browsers or buyers in cyberspace? An investigation of factors influencing likelihood of electronic exchange. *J Comput-Mediat Commun, A survey. Journal of Banking and Finance*, Vol. [21], pp. 1573-1624.
- Sweisi, N. A. A. O. (2010) *E-Government Services an Exploration of the Main Factors that Contribute to Successful Implementation in Libya*. PhD thesis in University of Portsmouth.
- Szmigin, I. T., and Bourne, H. (1999). Electronic cash: a qualitative assessment of its adoption. *International Journal of Bank Marketing*, Vol. [17], No.4, pp.192-203.
- Taddesse, W., and Kidan, T., (2005) E-payment: Challenges & Opportunities in Ethiopia, *Journal of Internet Banking & Commerce*, Vol. [12], No. 2.
- Thanasankit, T. (2003) E-commerce and cultural values. USA: Idea Group Publishing.
- Tam, K.Y., (1998) the impact of information technology investments on firm performance and evaluation: evidence from newly industrialized economies, *Information Systems Research*, Vol. [9], No. 1, pp. 85-98.
- Tan, T., and Teo, T.S. (2000) Factors influencing the adoption of Internet banking *Journal of the Association for Information Systems*, Vol. [1], No.1
- Taylor, S., and Todd, P. (1995) Understanding Information Technology Usage: A Test of Competing Models. *Information System Research*, Vol. [6], No. 2, pp.144 - 176.

- Takele, Y., and Sira, Z. (2013) Analysis of factors influencing customers' intention to the adoption of e-banking service channels in Bahir Dar city: an integration of TAM, TPB AND PR. *European Scientific Journal*, Vol. [9], No. 13.
- Tennyson. O., (2014). E-Payment System and its Sustainable Development in the. *European Journal of Business and Management*. Vol. [6], No.8, pp. 48-56.
- Teijlingen, V., Rennie, A.M., Hundley, V., and Graham, W. (2001) The importance of conducting and reporting pilot studies: the example of the Scottish Births Survey, *Journal of Advanced Nursing* Vol. [34], pp. 289-295.
- Thambiah, S., Eze, U. C., Tan, K. S., Nathan, R. J., & Lai, K. P. (2010) Conceptual framework for the adoption of Islamic retail banking services in Malaysia. *Journal of Electronic Banking Systems*, 2010, pp. 1-10.
- Tigre, P., Dedrick, J. (2004) E-commerce in Brazil: local adaptation of a global technology *Electronic Markets*, Vol. [14], No.1, pp. 36–47
- Tonderai, M., Janet, E., and Ray, D. (2010) Recommendations for e commerce systems in the tourism industry of sub-Saharan Africa. *Telematics and Informatics* Vol. [26], pp.12– 19.
- Teoh, W. M., Y., Chong, S., C., Lin, B., Chua, J., W., (2013) Factors affecting consumers' perception of electronic payment: an empirical analysis, *Internet Research*, Vol. [23], No. 4, pp.465 – 485
- Treese, G. W., and Stewart, L. C., (1998) *Designing Systems for Internet Commerce*, Addison-Wesley, Reading, MA.

- Tornatzky, L. G., & Klein, K. J. (1982) Innovation Characteristics and Innovation Adoption Implementation: A Meta-Analysis of Findings. *IEEE Transactions on Engineering Management*, Vol. [29], No.1, pp.28-44.
- Tsoukas, H. and Knudsen, C., (2003) organization theory. Oxford University press.
- Turban, E., King, D., Lee, J., Warkentin, M., and Chung, H.M., (2002) *Electronic Commerce, Managerial Perspective*. New Jersey, USA, Pearson Education. 2<sup>nd</sup> edition. Prentice-Hall, Englewood Cliffs, NJ.
- Turban, E., King, D., Viehland, D. & Lee, J. (2006) *Electronic Commerce 2006: A Managerial Perspective*, International edition, Prentice Hall, Upper Saddle River, NJ.
- Truman, G. E., Sandoe, K. and Rifkin, T. (2003) An empirical study of smart card technology, *Information and Management*, Vol. [40], No.6, pp. 591-606.
- Ullah, R., Kamal, Y., and Ghani, U. (2013) Quality evaluation of banking services for development of e-banking in Libya. *African Journal of Business Management*, Vol. [7], No.9, p.701.
- Umar, M., (2013) The Impact of External Drivers on Women Entrepreneurs Perception towards Supplier Performance in Nigerian SME Practices. *Australian Journal of Business and Management Research*. Vol. [3], No.2, pp. 1-47.
- UNCTAD, (2000) Building Confidence: Electronic Commerce and Development, United Nations Conference on Trade and Development, Geneva.
- United Nations Demographic Yearbook (UNDY) (2003) Demographic and social statistics· demographic and social topics · New York, United Nations
- United Nations Development Programme. (2011) *Human development report 2011: sustainability and equity: a better future for all*. New York, United Nations

- United Nations Human Development Programme (UNHDP) (2009) *Human development report 2009: Overcoming barriers: Human mobility and development*. New York, United Nations
- Urquhart, C., (2001) An Encounter with Grounded Theory: Tackling the Practical and Philosophical Issues, in 165 Trauth, E, (ed.), *Qualitative Research in Information Systems: Issues and Trends*", pp. 104-140.
- Urquhart, C., (2013) *Grounded theory for qualitative research a practical guide*. SAGE publication Ltd. London, UK.
- VanHoose, D. (2011) *Ecommerce economics*. Taylor & Francis.
- Van Teijlingen, E.R., Rennie, A., Hundley, V., & Graham, W. (2001) The importance of conducting and reporting pilot studies: The example of the Scottish Births Survey. *Journal of Advanced Nursing*, Vol. [34], pp. 289-295.
- Van Esch, P., and Van Esch, L. J. (2013) Justification of a Qualitative Methodology to Investigate the Emerging Concept: The Dimensions of Religion as Underpinning Constructs for Mass Media Social Marketing Campaigns. *Journal of Business Theory and Practice*, Vol. [1], No.2, p.214.
- Vatiero, M., (2009) *Understanding Power. A Law and Economics Approach*. Saarbrücken: VDM-Verlag Publisher.
- Veit, D., Clemons, E., Benlian, A., Buxmann, P., Hess, T., Kundisch, D., & Spann, M. (2014) Business models. *Business & Information Systems Engineering*, Vol. [6], No.1, pp.45-53.

- Venkatesh, V., and Brown, S. A., (2001) A longitudinal investigation of personal computers in homes: Adoption determinants and emerging challenges. *MIS Quarterly*, Vol. [25], No. 1, pp. 71-102.
- Verma, S., Kumari, S., Arteimi, M., Deiri, A., & Kumar, R. (2012) Challenges in Developing Citizen-Centric E-Governance in Libya. *Int. Arab J. e-Technol.*, Vol. [2], No. 3, pp. 152-160.
- Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003) User acceptance of information technology: Toward a unified view. *MIS Quarterly*, Vol. [27], No. 3, pp. 425-478.
- Wadley, H., J. (2011) *Economic Theory*, AuthorHouse
- Wallsten, S., (2003) *Regulation and Internet use in developing countries*, *World Bank Policy Research*, Working paper No. 2979, World Bank, Washington DC.
- Walsham, G., (1995) Interpretive case studies in IS research: nature and method. *European Journal on Information Systems*, Vol. [4], pp.74-81.
- Wang, S., (1999) Analyzing agents for electronic commerce, *Information Systems Management*, Vol. [16], No. 1, pp. 40-48.
- Wang, Wang, Lin and Tang (2003) Determinants of User Acceptance of Internet Banking: An Empirical Study, *International Journal of Service Industry Management*, Vol. [14], No. 5, pp. 501-519.
- Wareham, J., Zheng, J.G., and Straub, D., (2005) Critical themes in electronic commerce research: a meta-analysis, *Journal of Information Technology*, Vol. [20], pp.1-19.
- Whiteley, D., (2000) *E-Commerce-Strategy, Technologies and Applications*, McGraw-Hill Publishing Company, Maidenhead.

- Wie, T., (2005) The major channels of international technology transfer to Indonesia: an assessment. *J. the Asia Pacific Economy*, Vol. [10], No. 2, pp. 214-236.
- William, W., and Simon, F. (2006) Managerial strategies used to overcome technological hurdles: a review of e-commerce efforts used by innovative Caribbean managers, *Journal of Global Information Management*, Vol. [14], No. 3, pp. 1-16.
- Wong, Y.H., Ricky, Y., and Leung, T., (2005) Managing information diffusion in internet marketing”, *European Journal of Marketing*, Vol. [39], No. 7/8, pp. 926-946.
- Worku, G., (2010) Electronic Banking in Ethiopia – Practices, Opportunities and Challenges. *Journal of Internet Banking & Commerce*, Vol. [12], No.2.
- Worku, G., (2010) Electronic-Banking in Ethiopia- Practices, opportunities and Challenges, *Journal of Internet Banking and Commerce, August*, Vol.[15], No.2.
- Worthington, S., and Horne, S., (1995) Alumni affinity credit cards: making the relationship work. *International Journal of Bank Marketing*, Vol. [13], No. 5, pp. 24-30.
- Wright, D., (2002) Comparative Evaluation of Electronic Payment System, INFO 2002.
- Wisdom, K. (2012) *The impact of electronic banking on service delivery to customers of Ghana commercial bank limited. A study of Ghana commercial bank ltd, how poly technic branch* (Doctoral dissertation, Institute of Distance Learning, Kwame Nkrumah University of Science and Technology).

- Wu, I. L., and Chuang, C. H. (2010) Examining the diffusion of electronic supply chain management with external antecedents and firm performance: a multi-stage analysis. *Decision Support Systems*, Vol. [50], No.1, pp.103-115.
- Yang, K. C. (2005) Exploring factors affecting the adoption of mobile commerce in Singapore. *Telematics and Informatics*. Vol. [22], pp. 257-277.
- Yaqub, J., Bello, H. T., Adenuga, I. A., and Ogundeji, M. O. (2013) The Cashless Policy in Nigeria: Prospects and Challenges. *International Journal of Humanities and Social Science*, Vol. [3], No. 3, pp. 200-212.
- Yu, H.C., Hsi, K.H., and Kuo, P. J., (2002) Electronic payment systems: an analysis and comparison of types, *Technology in Society*, Vol. [24], pp. 331-347.
- Yin, R. K. (1994) *Case study research: Design and methods* (2<sup>nd</sup> edition). Newbury Park, CA: Sage Publications
- Yin, R. K. (2009) *Case study research: Design and methods*(4<sup>th</sup> edition). Thousand Oaks, CA: Sage.
- Yin, R. K. (2011) *Qualitative research from start to finish*. New York, NY: The Guilford Press.
- Yin, R. K. (2014) *Case study research: Design and methods*. Sage publications.
- Yuan, F., Woodman, R. W., (2010) Innovative Behaviour in the Workplace: The Role of Performance and Image Outcome Expectations. In: *Academy of Management Journal*, Jg. 53, H. 2, S. pp. 323–342.
- Yuan, X., Lee, H. S., & Kim, S. Y. (2010) Present and future of Internet banking in China. *Journal of Internet Banking and Commerce*, Vol. [15], No. 1, pp. 1-10.

Zhang, X. (2013) Income disparity and digital divide: The Internet Consumption Model and cross-country empirical research. *Telecommunications Policy*, Vol. [37], No. 6, pp.515-529.

Zwass, V., (2003) Electronic commerce and organizational innovation: aspects and opportunities. *International Journal of Electronic Commerce* Vol. [7], No. 3, pp. 7-37.

Zulhunda, S., Madieha, I., & Azmi, A. G. (2011) Security Safeguards on E-payment Systems in Malaysia: Analysis on the Payment Systems Act 2003. *J. Int'l Com. L. & Tech.*, Vol. [6], No. 187.



## 9 Appendices

### 9.1 Appendix A: Ethical Approval letter



Mr. M Hassan Elbasir  
24 Willow Brook Road  
Leicester  
LE5 0FE

26 April 2010

Dear Mahmoud Hassan Elbasir

I am pleased to inform you that the Faculty Research Ethics Committee held on Tuesday 2<sup>nd</sup> March 2010 considered your Application to Gain Ethical Approval for Research Degree Activities:

TRACKING NO. 0910/001

TITLE: An investigation of Factors affecting the adoption of E-payment system in north African countries

OUTCOME: Approved by Chair's Action Agreed by FHREC 2/3/10

If you require any further information, please do not hesitate to contact me.


Yours sincerely,

A handwritten signature in black ink, appearing to read "E. Aspell", written over a horizontal line.

Elaine Aspell  
Faculty Research Student Coordinator  
Tel: 0116 207 8627  
Email: [espell@dmu.ac.uk](mailto:espell@dmu.ac.uk)

Cc Richard Howley  
Graduate School Office  
File

## 9.2 Appendix B: Ethical Approval claim form

 <p><b>dmu.ac.uk</b> <b>DE MONTFORT UNIVERSITY</b> <b>LEICESTER</b></p>	<p><b>Faculty of Technology</b> <b>Application to Gain Ethical</b> <b>Approval for Research</b> <b>Degree Activities</b></p>	<p>For official use</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Tracking No:</td></tr> <tr><td style="padding: 2px;">Date approved:</td></tr> <tr><td style="padding: 2px;">Initials:</td></tr> </table>	Tracking No:	Date approved:	Initials:
Tracking No:					
Date approved:					
Initials:					

All Research Degree Projects require ethical approval. Research Students in the Faculty of Technology should complete this form to gain Internal Human Research Ethical Approval in consultation with their supervisors and submit it to the Faculty Assessor with their 'Application to Register for a Research Degree form (RDC.R).

NOTE: If your research involves using human tissue or fluid samples or animals please DO NOT use this application form. You should seek guidance from the Chair of the Faculty Human Research Ethics Committee before starting the project.

<b>1. Applicant</b>	
Last Name: HASSAN ELBASIR	First Name: MAHMOUD
DMU Email: mahmoud.elbasir@email.dmu.ac.uk	
Address:	

If you answer any of the following questions with 'Yes', then specific ethical issues WILL be raised that MUST be addressed. You will need to explain in detail in section 3 how you will address these ethical issues.

Has your research proposal identified any of the following research procedures?

Gathering information from or/and about human beings through: Interviewing, Surveying, Questionnaires,	<b>Yes</b>
Observation of human behaviour	<b>No</b>
Using archived data in which individuals are identifiable	<b>No</b>
Researching into illegal activities, activities at the margins of the law	<b>No</b>
Researching into activities that have a risk of personal injury	<b>No</b>
Supporting innovation that might impact on human behaviour e.g. Behavioural Studies	<b>No</b>

Are there other additional factors that could/will give rise to ethical concerns e.g. communication difficulties?

The questionnaire and interviewing with covering letter would be done by using these languages:  
English and Arabic

<p><b>2. Ethical Issues identified (State explicitly if no ethical issues are identified)</b></p> <p>Interviewing individuals, and do surveys, i.e. distribute questionnaires by face to face, and electronic mail. There are four ethical issues identified ,these are:</p> <ol style="list-style-type: none"> <li>1) Informed consent</li> <li>2) Privacy</li> <li>3) Confidentiality</li> <li>4) Perception of inappropriateness</li> </ol>
--

**3. How these issues will be addressed:**

The research instrument will address the four ethical issues as follows:

- 1) Record informed consent
- 2) Inform the respondents, who must be adults, of the nature of the research and their involvement in it, as well as to inform the respondents that the data collected will only be used for this research
- 3) Inform the respondents that they can withdraw their participation at any time and also that any information that identifies will not be share with anyone. For instance, there is a covering letter attached to explain this.
- 4) Inform the respondents that their data will be appropriately recorded and stored

*Note: You should consider the following:*

- *Providing participants with full details of the objectives of the research*
- *Providing information appropriate for those whose first language is not English*
- *Voluntary participation with informed consent*
- *Written description of involvement'*
- *Freedom to withdraw*
- *Keeping appropriate records*
- *Signed acknowledgement and understanding by participants*
- *Relevant codes of conduct/guidelines*

**4. To which ethical codes of conduct have you referred?**

The British Computer Society (BCS) and Code of Good Practice will used a guide this research throughout.

*Note: For the Faculty of Technology, these codes typically include those published by the BCS, ACM, IEEE or other applicable codes such as the code of the Social Research Association or specific funding bodies, such as the ESRC. Links to some of these codes are available on the Faculty of Technology FHREC website. [http://www.dmu.ac.uk/faculties/technology/current\\_students/hre/forms\\_links.jsp](http://www.dmu.ac.uk/faculties/technology/current_students/hre/forms_links.jsp)*

List of accompanying documentation that MUST be submitted to support the application:

- A copy of the research proposal (Application for Registration (RDC:R) form)
- Details of the arrangements for participation in the research by human subjects (including how participants will be recruited, confidentiality procedures, copies of consent forms, any questionnaires that will be used and other documentation as appropriate)
- A copy of all the documentation provided to the volunteer to ensure the clarity of information provided
- Copies of appropriate other ethical committee permissions (internal or external) or supporting documentation
- Other documentation as advised necessary by Supervisory team

**AUTHORISATION:**

<b>Signature by Applicant</b>	
Signed _____	Date _____

<b>Signature by First Supervisor</b>	
Signed _____	Date _____
Name of Supervisor _____	

<b>Conditional Approval - Authorising Signature (FHREC Chair)</b>	
Signed _____	Date _____
Tick here if approval is conditional <input type="checkbox"/>	
<i>Note to applicant: If you receive conditional approval, you may proceed with preparing the project but you must NOT start data collection unless you have met the conditions and received full approval.</i>	

<b>Conditions:</b>   
--------------------------------

<b>Full Approval - Authorising Signature (FHREC Chair)</b>	
Signed _____	Date _____

**NOTES FOR GUIDANCE:**

- 1 Respondents' co-operation in a research project is entirely voluntary at all stages. They must not be misled when being asked for co-operation.
- 2 Respondents' anonymity must be strictly preserved. If the Respondent on request from the Researcher has given permission for data to be passed on in a form which allows that Respondent to be identified personally:
  - (a) the Respondent must first have been told to whom the information would be supplied and the purpose for which it will be used, and also
  - (b) the Researcher must ensure that the information will not be used for any non-research purpose and that the recipient of the information has agreed to conform to the requirements of any relevant Code of Practice.
- 3 The Researcher must take all reasonable precautions to ensure that Respondents are in no way directly harmed or adversely affected as a result of their participation in a research project.
- 4 The Researcher must take special care when interviewing children and young people. The Faculty REC will give advice on gaining consent for studies involving children or young people.
- 5 Respondents must be told (normally at the beginning of the interview) if observation techniques or recording equipment are used, except where these are used in a public place. If a respondent so wishes, the record or relevant section of it must be destroyed or deleted. Respondents' anonymity must not be infringed by the use of such methods.
- 6 Respondents must be enabled to check without difficulty the identity and bona fides of the Researcher.

### 9.3 Appendix C: Pilot Study Organisational interview

Interview questions	Organisation interview	Concepts
1) What does the term of E-payment system mean to you?	<b>Participant 1:</b> <u>The term means</u> the possibility of buying and selling products online.	-Knowledge and background about EPS.
	<b>Participant 2:</b> <u>Use the Internet to pay by using payment cards.</u>	-Knowledge and background about EPS.
	<b>Participant 3:</b> <u>It means the use</u> of cards, and credit cards for electronic payment process, considering that the world around us is an electronic currency, which makes not to think about carrying money with us.	-Knowledge and background about EPS
	<b>Participant 4:</b> <u>Use the electronic channel for electronic payment process.</u>	-Knowledge and back ground about EPS.
2) Have you had the chance to use it? If yes please explain and how? Or If No, please explain why not?	<b>Participant 1:</b> <u>No, this service is not available in my country. In addition, I don't have any kind of payment cards.</u>	-Participants' practice and experience.
	<b>Participant 2:</b> <u>Yes, I have bought</u> tickets from the international airlines by using my visa card that was issued to me from one of the Libyan banks.	-Participants' practice and experience.
	<b>Participant 3:</b> <u>No, but I know some of my colleagues have used this service abroad.</u>	-Participants' practice and experience. -EPS not adopted in Libya
	<b>Participant 4:</b> <u>locally no, but abroad yes to pay some bills.</u>	-Participants' practice and International experience. -EPS not adopted in Libya.
3) In your opinion, what do you think that the telecommunication companies in Libya could do to encourage their customers to use E-payment system service? Please explain	<b>Participant 1:</b> <u>To allow the possibility of selling the company's services via the Internet.</u>	-Companies are still using cash payment.
	<b>Participant 2:</b> the telecommunications sector will benefit such as the following: • <u>Employment will be reduced</u> , therefore will have <u>less to spend</u> • pre-paid cards are close to the electronic payment cards: it means this system is <u>easier to use that in the future</u> • There is no deal with the Libyan Commercial Banks except the Almadar Mobile Phones Company have a contract with Bank of Commerce and Development through the use of pre-paid cards by phone. Therefore, <u>it is taking this step to adopt of such a service.</u>	-Reliability of EPS. -Perceived benefits from adopting the EPS.
	<b>Participant 3:</b> the telecommunications sector will take the following steps to get <u>more benefit:</u>	-EPS not adopted in Libya. More benefits:

	<ul style="list-style-type: none"> <li>•work to <u>find safe ways to transfer money</u> or rather process the electronic payment system</li> <li>• Provide direct service that <u>provides the service for electronic payment instead of cash.</u></li> <li>• <u>Facilitate and deliver service to customers,</u> which will work towards boosting the income of the company.</li> </ul>	<ul style="list-style-type: none"> <li>-Security.</li> <li>-Ease of use.</li> <li>-Reliability of the EPS.</li> </ul>
	<p><b>Participant 4:</b> In theory, everyone is talking about this system and we are as a company of telecommunications are supposed to open this service, and this will be done by the emergences of a third party to achieve compatibility between the all parties who will benefit from this system.</p>	<ul style="list-style-type: none"> <li>More benefits:</li> <li>-Reliability of EPS.</li> <li>-Cooperation with Existing Entities.</li> <li>-People experience.</li> </ul>
<p>4) Do you think that the management within telecommunication companies to influence the staff toward adopting E-payment system?</p>	<p><b>Participant 1:</b> I've seen the <u>company change</u> in the administration level during the past period)) as for now, all procedures have become online. <u>New administrations by young people have started encouraging the people to start this kind of service.</u></p>	<ul style="list-style-type: none"> <li>-change management.</li> <li>- Social influence.</li> </ul>
	<p><b>Participant 2:</b> part of the top <u>management staff should encourage the use of this system</u> and as they are the staff of the telecommunications sector and they can adopt this system, because all the staff are educated and conscientious and they will be able to understand this system in the fastest possible time.</p>	<ul style="list-style-type: none"> <li>- Awareness about EPS between staff.</li> </ul>
	<p><b>Participant 3:</b> I cannot say for sure that the management are out to influence their employees, <u>but I think that the state has a big role in persuading customers to get more benefit from this service.</u></p>	<ul style="list-style-type: none"> <li>-political power.</li> </ul>
	<p><b>Participant 4:</b> There is a definite positive influence in the Almadar Mobile Phone Company which has a channel for online sale which is pre-paid and post-paid. This is not to be available without the support of the Director-General.</p>	<ul style="list-style-type: none"> <li>-social influence.</li> </ul>
<p>5) E-payment system has some convenient features such as that of any time any-where via online, and how are these important to customers? Please explain.</p>	<p><b>Participant 1:</b> <u>Some products are not available in the Libyan context;</u> through the debit cards we can buy products from abroad via internet.</p>	
	<p><b>Participant 2:</b> ease of handling this kind of service at any time, which provides service to all customers at any time</p> <ul style="list-style-type: none"> <li>• Bank of Commerce and Development is one of the banks which gives the Almadar's Mobile Phone Company staff the use of pre-paid cards by phone, that means they can use this service at anytime and anywhere.</li> </ul>	

	<p><b>Participant 3:</b> considered that the <u>financial procedures within the telecommunication company are complex</u>. Using the electronic payment system will allow the customer to buy online at any time with confidence.</p>	<p>-Lack of online service. -Convenience.</p>
	<p><b>Participant 4:</b> In Libya it is very important to adopt this system, <u>but in the future E-payment system could be available</u>. This service at the site of the company is available to provide these products at any time and at anywhere.</p>	<p>-EPS not adopted in Libya.</p>
<p>6) How do the telecommunications' companies handle the resistance to change in transaction process? Please explain.</p>	<p><b>Participant 1:</b> Many people are afraid of <u>handling this kind of service</u>, for example, <u>the financial management still using their complex procedures</u> with the manual system. The most important thing to be done by the telecommunications' companies are taking up the challenge to spread the awareness to adopt the new online system among the people.</p>	<p>-Afraid from this system. -Resistance to change.</p>
	<p><b>Participant 2:</b></p> <ul style="list-style-type: none"> <li>• by its nature, any new technology will face some resistance the first time it is adopted, for example, the resistance was observed with the emergence of mobile phones.</li> <li>• facilitate the new system and phase out the old system.</li> <li>• to publicise via the Internet and encourage the banks to offer incentives to the customers for taking up electronic payment system</li> </ul>	<p>-Spread awareness among people. -Facilitate the system</p>
	<p><b>Participant 4:</b> The lack of planning is a major factor at the moment. The system is not adopted yet but the future depends on future and in the ability to avoid planning the resistance.</p>	<p>-EPS not adopted in Libya. - Lack of a plan at the present.</p>
<p>7) In your opinion, how the management of the telecommunication companies understand the perceived benefits in influencing business decision of adopting E-payment system? Please explain.</p>	<p><b>Participant 1:</b> All are convinced about the benefits of using this technique, but the problem is <u>that they are convinced the theoretical side is ok. But there are difficulties are slow to change and keep on using the system in the ways.</u></p>	<p>-Afraid of the EPS.</p>
	<p><b>Participant 2:</b> the existence of e-service contains several features, including:</p> <ul style="list-style-type: none"> <li>• Easy payment</li> <li>• Security</li> <li>• <u>New services available at the lowest cost</u> (e.g., when the company is issuing one million pre-paid phone cards that costing a lot binding .....)</li> <li>• Work to increase profits.</li> </ul>	<p>- Perceived Benefits. -Convenience.</p>

	<p><b>Participant 3:</b> The payment process by using the old method causes confusion in all its procedures, but when the telecommunication provides this service the customer does not need to search for company's building to pay by cash but this system will provide a service to facilitate all the procedures.</p>	<p>-EPS not adopted in Libya.</p>
	<p><b>Participant 4:</b> in general, all agree that E-payment system has positive influence on total business, but especially if it's adopted in future we are going to have a plan and are able to calculate everything.</p>	<p>-EPS not adopted in Libya.</p>
<p>8) What steps can the company consider to ensure the E-payment system is accepted?</p>	<p><b>Participant 1:</b> By following these Steps: •Telecommunication Companies <u>must follow the ministry</u> of communications guideline which means that there should be a link between enacting laws and regulating the system. •The Libya telecom and technology company <u>have a big data centre for hosting all kind websites.</u> •To <u>promote such a service within the universities.</u></p>	<p>-Political support -Lack of Legal framework and laws. -Lack of creating laws and regulation. -Availability one of factors that assist to accept EPS (acceptability). -Lack of awareness among customers.</p>
	<p><b>Participant 2:</b> The company should consider the following steps to ensure the adoption E-payment system: • <u>Easy access to the service at any time</u> • To consider several other aspects such as <u>the technical issues.</u> • Devising the methods that will be use in publicity.</p>	<p>- Technical and System Quality issues</p>
	<p><b>Participant 3:</b> Clarify the pros and cons ((advantages and disadvantages)) of this system. • <u>Dissemination of knowledge among the customers</u> • To demonstrate the cost that was wasteful using the old method of cash payment manually.</p>	<p>-Lack of awareness among customer.</p>
	<p><b>Participant 4:</b> One of the successful methods for the adoption of this system is what the <u>customer needs</u>, and there are other issues related to the technical issues, <u>such as security, safety, and trust.</u> Therefore, these standards have <u>confirmed the stability</u> of this system for a long time.</p>	<p>-Customer needs. - Security. - Trust. -Acceptability.</p>



<p>9) Explain the role of:</p> <p>1) Co-operation in the E-payment system adoption?</p> <p>2) Who needs to cooperate to make E-payment system work?</p>	<p><b>Participant 1:</b></p> <ul style="list-style-type: none"> <li>• The business <u>relationship is between two parties</u>: the owner of the money (customer and buyer) and the owner of items to complete the business.</li> <li>• It must be to make sure that <u>the project of national mailing system is</u> to finish in order to confirm that this system should be adopted.</li> <li>• Purchase of goods via the Internet should be under controls to prevent any loss.</li> </ul> <p>2) <u>The cooperation must be between commercial banks, the State, telecommunication companies and companies</u> who are responsible for delivery system.</p>	<p>Cooperation with Existing Entities.</p> <p>-Technical infrastructure.</p> <p>-Security.</p>
	<p><b>Participant 2:</b></p> <p>1) <u>The presence of a third party</u> who provides the service to the three parties ((the bank - the customer - the company)).</p> <p>2) Telecommunication companies.</p>	<p>- Cooperation with Existing Entities.</p>
	<p><b>Participant 3:</b> <u>the presence of a third party</u>, which is important to provide the money to be delivered to the other party. The customer, companies and the third party.</p>	<p>- Cooperation with Existing Entities</p>
	<p><b>Participant 3:</b> <u>the presence of a third party</u>, which is important to provide the money to be delivered to the other party.</p> <p>2) The customer, companies and the third party.</p>	<p>- Cooperation with Existing Entities</p>
	<p><b>Participant 4:</b> Generate more traffic</p> <ul style="list-style-type: none"> <li>• Value added service to the customer and therefore this is because loyalty is very important</li> <li>• Our role with the State and other parties has a definite role.</li> </ul> <p>2) the third party who is working to facilitate the service</p>	<p>-Cooperation with Existing Entities.</p>
<p>10) Do you consider the cost of Internet usage a barrier to the adoption of E-payment system within your company?</p>	<p><b>Participant 1:</b> Yes, <u>prices are reasonable</u></p>	<p>-Cost of internet.</p>
	<p><b>Participant 2:</b> <u>The cost of Internet use is still high expenses compared to the standard of living</u></p>	<p>-Cost of internet.</p>
	<p><b>Participant 3:</b> <u>The cost of Internet service usage is not equal to that of the neighbouring countries.</u></p> <p><b>Participant 3:</b> <u>the presence of a third party</u>, which is important to provide the money to be delivered to the other party.</p> <p>2) The customer, companies and the third party.</p> <p><b>Participant 3:</b> <u>The cost of Internet service usage is not equal to that of the neighbouring countries.</u></p>	<p>-Cost of internet.</p> <p>- Cooperation with Existing Entities</p> <p>-Cost of internet.</p>

	<b>Participant 4:</b> The Internet prices are still high, but will the E-payment system it is possible to rely on other means such as Mobile.	-Cost of internet.
11) What is the political support between law, politics and E-payment system? If yes, how? If no, why?	<b>Participant 1:</b> No, it does not have support and does not have any coordination between the service companies which sometimes cut off lines of communication while carrying out their service.	-Lack of political support. -Lack of communication between service companies.
	<b>Participant 2:</b> The need for a focal point for the banking services • The need to provide for the cash machine • people do not know about the laws relating to this system • It is assumed that the state has imposed laws that encourage the new payment system.	-Technical infrastructure. -Political support. -Knowledge.
	<b>Participant 3:</b> the electronic payment system is a global system which imposes policies designed to monitor and control the money electronically, and it must be compared with the adoption of electronic payment system in other countries.	-Other countries experience.
	<b>Participant 4:</b> There is currently no legislation, because the business is the one which imposes laws and regulations in their areas with the local market conditions to provide competition.	-Lack of legislation. -Local competition.
12) Do you think that the political support is more beneficial to the customers?	<b>Participant 1:</b> Yes, if there is a project to extend this kind of service	-Political support.
	<b>Participant 2:</b> Yes, in order to increase the income by making it easier to use this service.	-Political support.
	<b>Participant 3:</b> If the customer is among those who is going to have benefits from the Internet service, then it will benefit him	-Political support.
	<b>Participant 4:</b> Yes, if the government issues the regulations to ensure this transaction is safer and also guaranteed in case of loss.	-Political support.
13) In your opinion, do you think using E-payment system for buying products is safe and secure in the Libyan context? Please explain.	<b>Participant 1:</b> There is a problem with buying products in Libya nowadays, as well as there are no securing websites.	-Lack of security.
	<b>Participant 2:</b> in Libya, when there is new system is introduced, it is supposed that the state is to provide the laws to protect the system and the customer, for example, if a customer's bank card is stolen, then the bank will bear the responsibility.	-Lack of legislation and laws.
	<b>Participant 3:</b> No, because the hackers throughout around the world have increased in numbers.	-Afraid from hackers.

	<b>Participant 4:</b> at the moment the telecommunication companies have no E-payment system plan, this means there is no risk, but personally I believed that it will be safe in future , because they have plan to protect the transaction via internet to avoid any risk.	-EPS not adopted in Libya.
14) In your opinion, what are the most significant factors affecting the adoption of E-payment system?	<b>Participant 1:</b> Post coding, and the economic factor, because in the absence of banks' role cannot perform effectively.	-Technical and System Quality issues. -Economic factors
	<b>Participant 2:</b> Laws that are issued from the state to promote this service.	- Political support.
	<b>Participant 3:</b> The financial situation is a problem, because if the standard of living of the customers are high enough, then find better ways to do their transaction electronically.	- Impact of standard of living.
	<b>Participant 4:</b> Third party who accept this idea, for example, the electricity company or any other service company when they think to adopt the electronic payment system. In my opinion, the most significant factor is a mixture between the economic and political situation.	- Cooperation with Existing Entities.
15) Do you think that the Libyan society take into consideration the barriers in adopting the E-payment system?	<b>Participant 1:</b> No, except the people who are educated.	-Education level (knowledge) among people.
	<b>Participant 2:</b> The society is divided into two layers: the educated and the uneducated people. The first layer who can consider the barriers rather others.	-Education level (knowledge) among people.
	<b>Participant 3:</b> Not all layers of society can consider those barriers, the educated people and those who have already heard about this system.	-Education level (knowledge) among people.
	<b>Participant 4:</b> It will take time, but at the end they will understand the importance of this new system.	-Lack of understanding the system.
16) Do you think the adoption of E-payment system within the telecommunication companies will contribute to the economic growth in Libya? And how?	<b>Participant 1:</b> significantly and especially if the foreign companies in greater numbers in Libya have to be functioning.	- Mutuality of Stakeholder Benefits.
	<b>Participant 2:</b> increase the incomes of telecommunication companies which will contribute to the support of the national economy.	-Reliability of Electronic payment.
	<b>Participant 3:</b> ) for the State Yes, it will assist to increase the number of customers, then it will increase the income of the telecommunication companies , thus it would help to boost the country's economy.	-Political support.
	<b>Participant 4:</b> if the E-payment system is directed toward e-government system then the E-payment system will	-Technical infrastructure.

	contribute significantly to the economy of the State.	
17) Do you have anything to by way of adopting the E-payment system in Libyan context?	<b>Participant 1:</b> The information that relates to the <u>E-payment system should be involved in the curriculum of universities and schools.</u>	-Awareness among people.
	<b>Participant 2:</b> Laws that <u>facilitate the use of E-payment system</u> as well taking into consideration the security level and banking system.	-Technical infrastructure. -Laws.
	<b>Participant 3:</b> Supposed to raise awareness among the people.	-Awareness among people.
	<b>Participant 4:</b> Great chance of succeeding because the other channel is not a barrier.	-Trusted of EPS.

## 9.4 Appendix D: Pilot Study Customer interview

Interview questions	Customer interview	Concepts
1) What does the term of E-payment system means to you?	<b>Participant 1:</b> <u>Pay only via internet from anywhere and it is the easiest and quickest way to ordering online.</u>	-Knowledge and background about EPS.
	<b>Participant 2:</b> <u>Replace the cheque and the cash payment method by the modern electronic payment system through the internet.</u>	-Knowledge and back ground about EPS.
	<b>Participant 3:</b> <u>Pay the money electronically.</u>	-Knowledge and background about EPS.
2) Have you had the chance to use it? If yes, please explain, how? Or if not, please explain why not?	<b>Participant 1</b> Yes, <u>several times internally and externally through the international bank account, and sometimes by friends' addresses or using the addresses of global companies such as DHL, FedEx in Libya to order online.</u>	-Participants' practice and experience. -EPS not adopted in Libya. -Post coding dos exist in Libya.
	<b>Participant 2:</b> Yes, by <u>using Libyan Aman Bank cards</u> for the purchase of equipment from China and I have received those items <u>through my company's address.</u>	-Participants' practice and experience. -Post coding dos exist in Libya.
	<b>Participant 3:</b> Yes, but not in Libya and I got my visa card abroad, which helped me to use this system	-Participants' practice and experience. -Post coding dos exist in Libya. -EPS not adopted in Libya.
3) In your opinion, what do you think that the telecommunication companies in Libya could do to encourage their customers to use E-payment system service? Please explain.	<b>Participant 1:</b> Any new application such as, the <u>ISP or Libya for Telecom and Technology Company is the backbone in providing it with a suitable environment</u> , because the company's role is to provide a place and address on the website.	-Technical infrastructure.
	<b>Participant 2:</b> Companies must do the following: • Clarify how the system works. • explain terms to the customers purchase • <u>Raise awareness among customers</u> about the importance of using this system in order to save time and shorten the distance.	-Spread awareness among customers.
	<b>Participant 3:</b> It is best for the telecommunication companies <u>to shift part of the sales as much as possible through the Internet</u> and then it is possible that the customer will deal	-EPS not adopted in Libya.

	with this service without going to the company personally.	
4) From the aspect of information technology usage in Libya, does the Libyan culture see the new development in this area positively and has it any influence on the adoption of E-payment system? If yes, please explain, how? If not, please explain, why not?	<b>Participant 1:</b> <u>if the system is available with clarification on how to use. Then the Libyan people will adopt it.</u> Many of telecommunication companies for example have adopted new services and they have not faced any problems.	-Availability the service. -EPS not adopted in Libya.
	<b>Participant 2:</b> considering that the electronic payment is one of payment methods, and the Libyan people are conscious about the Islamic angle and Muslims they will understand this system and viewed from the Islamic angle in its absence of interest within buying and selling process.	-Awareness about Islamic transaction process.
	<b>Participant 3:</b> for the companies would take steps to provide awareness among individuals, as many customers are dealing with the Internet as needed, therefore, from my point of view there are no difficulties.	-Awareness among customer. -Internet usage as needed
5) E-payment system has some convenience features such as, any time anywhere via online, and how are these important to customers? Please explain.	<b>Participant 1:</b> It provides <u>the quick access</u> to the company's website rather than walking or driving to its place. The electronic payment system <u>will facilitate the transaction procedures.</u>	- Accessibility. -Convenience.
	<b>Participant 2:</b> <u>the electronic payment system will facilitate the payment process</u> without using cash payment, and simply <u>using this service at any time and or, any place.</u>	-Ease of use. -Convenience.
	<b>Participant 3:</b> These are the two important features: <u>availability of time and place</u> to all parties to the, which <u>makes the customers use this service at anytime and anywhere.</u>	-Ease of use. -Saving time. -Convenience.
6) In your opinion, if the E-payment system is adopted, how can the telecommunication companies reduce resistance to change among customers? Please explain.	<b>Participant 1:</b> As usual <u>when any new technology is initiated then, there</u> are some questions are raised namely; can Is this service be adopted? Any new technology initially faces criticism over time; <u>there are improvements which are consistent with the culture</u> of the Libyan people to deal with the new techniques.	-Understandable the new technology.
	<b>Participant 2:</b> It is useful to know <u>the reasons for the individual resistances</u> to the solution. For this kind of resistance is expressed through questionnaires.	-Identifying the reasons of resistance to change.
	<b>Participant 3:</b> From my point of view about the new techniques, <u>the resistances more or less are expressed</u> depending on the spread between the individuals.	-Degree of resistance.

<p>7) In your opinion, do you think that the companies and their customers will benefit from adopting E-payment system? If yes, how? If no, why not please explain.</p>	<p><b>Participant 1:</b> Of course, the Internet without applications has no value and the most important of these applications is to utilize the electronic payment system.</p>	- Perceived Benefits.
	<p><b>Participant 2:</b> For clients it has definite advantages, but for a company it depends on the purpose of initiating this service. Is it for promoting trade, business or service.</p>	- Perceived Benefits.
	<p><b>Participant 3:</b> for communications companies it will increase their revenue which will result from increased sales and customers by the use of E-payment system.</p>	- Perceived Benefits.
<p>8) If the Ease of Use and usefulness are both available in the E-payment system, then how the system will be accepted to expand in future? Please explain.</p>	<p><b>Participant 1:</b> With and time <u>will be the system adopted, and it will gain reach these features</u> including ease of use and usefulness.</p>	-EPS not adopted in Libya. -Understandable the system. -Acceptability.
	<p><b>Participant 2:</b> The importance of these factors is that system will bring more benefits to the companies such as saving of time. In my opinion, if this system is directed to the age group from 16-45 years, it will achieve the economic feasibility of the company and will be adopted in the fastest possible time.</p>	More benefits: -Education level. -Acceptability.
	<p><b>Participant 3:</b> This is the most important factor that affects the spread of electronic payment service. It is very important to utilize the ability for using this system((usability)) which leads to increased advantages.</p>	-Usability of the system.
<p>9) Explain the role of: 3) Co-operation in E-payment system adoption? 4) Who needs to cooperate to make E-payment system work?</p>	<p><b>Participant 1:</b> <u>Cooperation is essential</u> and its role must be know the following facts:</p> <ul style="list-style-type: none"> <li>• <u>The existence of a banking system</u> in the State and the existence of any e-banking at any time to ensure the adoption this system.</li> <li>• <u>The customer's rights</u> to know what want to know do and what they want receive.</li> <li>• <u>The existence of a third party</u> which will provides this service</li> <li>• the credibility of the stakeholder ((entity-based electronic payment system)).</li> </ul> <p>2) Those who are involved with are:</p> <ul style="list-style-type: none"> <li>• banking system of the State, including credit cards or visa.</li> <li>• providing all the technical issues from telecommunications companies to the customers.</li> </ul>	- Cooperation with Existing Entities. -Technical infrastructure. -Awareness among customers.

	<p><b>Participant 2:</b> The cooperation between telecommunication companies and customers to benefit from this service with their pastures in the religious side of transactions.</p> <p>2) <u>Telecommunication companies that provide methods of protection, technical support and awareness.</u></p>	<p>- Cooperation with Existing Entities.</p> <p>-Technical infrastructure.</p> <p>-Awareness about Islamic transactions.</p>
	<p><b>Participant 3:</b> It is Necessary the laws and regulations governing the handling this service are put in place. This legislation is not available at this time; This means that there are shortcomings on the part of the state.</p> <ul style="list-style-type: none"> <li>• <u>The need for coordination between the service sectors</u> in order to benefit from this service.</li> <li>• <u>Infrastructure for telecommunications</u> companies must rely on the education, awareness among customers and staff, and its use and reasonable prices structure.</li> </ul> <p>2) The customer, companies and third party.</p>	<p>-Lack of legislation.</p> <p>-Cooperation with Existing Entities.</p> <p>-Technical infrastructure.</p>
10) Do you consider the Internet usage cost as a barrier to the adoption of E-payment system within your company?	<p><b>Participant 1:</b> Prices using the Internet are reasonable to the customer who need website just only to pay online.</p>	-Cost of Internet.
	<p><b>Participant 2:</b> The level of per capita income plays an important role in the advantage of using the Internet. Price is sometimes considered unreasonable when comparisons are made.</p>	-Cost of Internet. -Standard of living.
	<p><b>Participant 3:</b> it is considered that the Internet prices are still high.</p>	-Cost of Internet.
11) What is the political support between law, the politics and the E-payment system? Yes, how? No, why?	<p><b>Participant 1:</b> Law for using Internet, online banking system. I think that the state gave permission to the authorities to adopt this system, and this will take time.</p>	-Lack of political support.
	<p><b>Participant 2:</b> Supposed that the state to enact laws in line with the Islamic religion so as to provide protection for the rights of individuals when they use this system.</p>	-Lack of political support. -Lack of technical infrastructure.
	<p><b>Participant 3:</b> assumed that the state do the following:</p> <ul style="list-style-type: none"> <li>• Enact laws and legislation governing the banking</li> <li>• The need to support financially and of the Regulations by allocating part of the overall budget for the adoption of this system and training staff on how to use it.</li> </ul>	-Lack of training courses -Lack of awareness.



12) In your opinion, do you think using E-payment system for buying products is safe and secure in the Libyan context? Please explain.	<b>Participant 1:</b> <u>the subject of safety</u> depends on the person in charge of the site development, as well as <u>the hosting company (Libya Telecom and Technology Company)</u> .	-Technical infrastructure.
	<b>Participant 2:</b> At the moment, in spite of problems there are new modern <u>methods of protection available</u> : It is possible to have this system with greater safety and security.	-Technical infrastructure.
	<b>Participant 3:</b> Will be <u>secure</u> to some extent.	-Technical infrastructure.
13) In your opinion, what are the most significant factors affecting the adoption of E-payment system?	<b>Participant 1:</b> the most important factors are the <u>economic and social side</u> .	-Economic and social side.
	<b>Participant 2:</b> the <u>economic and social and political side</u> .	- Economic and social and political side.
	<b>Participant 3:</b> <u>State</u> who are to enact the laws to facilitate this system.	- Political side.
14) Do you think that the Libyan society consider the barriers of adoption of E-payment system positively or negatively?	<b>Participant 1:</b> <u>The educated people</u> who understand the system think positively.	-Education level.
	<b>Participant 2:</b> <u>Young people aged (16-45 years)</u> constitute the largest segment in the Libyan society, as well as the <u>businessmen and businesswomen who are interested</u> in adopting this system.	- Education level. -Experience.
	<b>Participant 3:</b> Yes, most segments of society are aware of this service.	-Awareness among customer.
15) Do you think the adoption of E-payment system within the telecommunication companies will contribute to the economic growth in Libya? And how?	<b>Participant 1:</b> Yes, <u>any application across the Internet</u> will contribute to increase <u>the number of customers</u> and thus <u>contribute to the lifting of the state economy</u> .	- Mutuality of Stakeholder Benefits. - Reliability of Electronic payment.
	<b>Participant 2:</b> Yes, it will contribute to the increase of <u>corporate income by increasing the number of customers</u> and thus will <u>contribute to the economic</u> sector of Libyan country.	- Mutuality of Stakeholder Benefits. - Reliability of Electronic payment.
	<b>Participant 3:</b> There is no doubt, especially given <u>that the micro-projects are supporting the major projects</u> . When the companies adopt this new system it will lead to greater support to the national economy.	- Mutuality of Stakeholder Benefits.
16) Do you have anything to add to the topic of adoption of the E-payment system in the Libyan context?	<b>Participant 1:</b> Yes, If the <u>electronic payment system is initiated</u> it will encourage use of the Internet.	-Availability of the system.
	<b>Participant 2:</b> <u>understand the Islamic transaction process of</u> avoiding interests through the dissemination of Islamic awareness among the people	- Awareness about Islamic transactions process: Interest free dealing
	<b>Participant 3:</b> The electronic payment	-Economic support.

	system will <u>contribute to the support of the other service sectors</u> and will work to ensure the success of sales to these sectors.	
--	--	--

## 9.5 Appendix E: Examples from empirical study interview (Arabic version)

RES87

- 1) نظام الدفع الالكتروني يعني هو حل مشكلة التعامل مع الزبون مباشرة من غير اي مشاكل
- 2) لا لم يسبق لي التعامل به
- 3) يتم بالاتي: توفير عن طريق موقع الشركة الخدمة وذلك بسبب ان كثير من الزبائن :
  - 1) تفضل الدفع من خلال البيت
  - 2) تشجيع الزبائن من خارج ليبيا للتفاعل مع خدمات الشركات بدلا من احتكار الخدمة علي شركة واحدة.
  - 4) الادارة الجديدة تشجع التقنية وبالتالي سوف تؤثر في مواظفيها لانها ادارة متعلمة.
  - 5) الخدمة تعتبر مهمة جدا مما يوفر للزبون خدمة طيلة 24 ساعة علي مدار الاسبوع وبالتالي هذا الشغل يساعد في دعم انتشار النطاق Ly والكثير يعرف ماهية خدمة الشركة
  - 6) وذلك بتقسيم الناس الي فئتين :  
جزء للناس التي تفضل نقدي  
جزء للناس التي تفضل الدفع الالكتروني
- 7) عندا تتوفر راحة للزبون فبذلك يتم كسب الزبون وعندما يتم ارضاء الزبون وتوفير احتياجاته يخلق نطاق جيد للمنافسة بين الشركات
- 8) بالنسبة للجانب المالي: الاسعار مرتفعة وبالتالي تثار بمستوي دخل الزبون ويتم ذلك بتوفير بطاقات الدفع المسبق لتسهيل عملية الدفع
- 9) توضيح الاسباب التي تؤدي الي اعتماد نظام الدفع الالكتروني كما هو موضح في النقاط التالية:
  - 1) توفير نظام دفع الكتروني علي الانترنت يشغل مع منظومة شركات الاتصالات
  - 2) توفير نظام حماية لعمليات الدفع عبر الانترنت
  - 3) توفير نظام يشغل طول اليوم 24 ساعة علي مدار ايام الاسبوع
  - 10) التعاون من المفترض ان يتم :
    - 1) داخل الشركة لتوفير كروت خاصة ومسبقة الدفع
    - 2) الادارة التجارية بالشركة
  - 11) نعم الاسعار عالية وتعتمد علي مستوي دخل الفرد وحسب الخدمة التي يحتاجها الزبون
  - 12) عدم وجود قوانين في البلاد تجرم الجرائم الالكترونية عبر الانترنت  
دعم الحكومة يؤكد الثقة بين الزبون والحكومة
  - 13) نعم هناك دعم حكومي من حيث توفير الخدمة
  - 14) الثورة خلقت بيئة مفتوحة امام الجميع من حيث تقديم الخدمات وبالتالي الثورة غيرت عدة جوانب ومنها الغاء النظام المركزي الذي كان موجود وهذا ما جعل الثورة اثرت اجتماعيا علي ابناء المجتمع

15) سوف يكون نظام جيد ومدعوم من الحكومة شاملا القوانين واللوائح التي تجرم اي خلل ممكن ان يحدث اثناء البيع عبر الانترنت

16) الجانب الاجتماعي الاقتصادي السياسي

17) المجتمع غير مدرك لاسباب التي ادت الي تاخر اعتماد نظام الدفع الالكتروني

18) توفر الخدمة للزبون من بيته وبالتالي تقوم الشركة بتوفير خدمة داخل البلاد وخارجه وبالتالي تفتح امام شركات الاتصالات ميزة المنافسة التي تؤدي الي تحسين الخدمات التي ينتج عنا زيادة دخل الشركات والتي بدورها تعود نفعا علي اقتصاد البلاد

- 1) المصطلح يعني امكانية الشراء والبيع عبر الانترنت
- 2) لا، لانه لا توجد هذ الخدمة في بلادي وكذلك عدم حصولي علي بطاقات الدفع
- 3) 1) بتوفير الانترنت وتسهيل استعمالها لانها تشجع المستخدم علي استخدام البيع خدمات الشركة عبر الانترنت .
- 2) تفعيل نظام delivery system عنوانة الشوارع والمؤسسات
- 4) في الوقت الحال نعم (( لقد شهدت الشركة تغير في الادارة خلال المدة الفاتنة (( كل شي بالاوراق بينما الان كل الاجراءات اصبحت عبر الانترنت )) بقوة الشباب الجدد ممكن ان تدفع وتشجع للقيام بخدمات مثل هذه الخدمة.
- 5) يحطم الحواجز بين السلعة والشاري والزبانن في اي وقت ومكان .
- 6) فرصة السرقة باستخدام نظام الدفع الالكتروني اقل
- ترسيخ ثقافة التعامل عبر الانترنت بنظام الدفع الالكتروني بين موظفي الشركة
- تشجيع الزبانن بالشراء عبر الانترنت
- 7) الكل مقتنعين بالفوائد من استخدام هذه التقنية ولكن يعتمد علي رؤية الادارة باعتماد طرف افضل وتوفير خدمات البيع عبر الانترنت .
- 8) مستوي المعيشة للافراد تتاثر بالاتي:
- الناس المتعلمة هم من يهتم بنظام الدفع الالكتروني اكثر من غيرهم. ولهذا يعتبر مستوي المعيشة عامل مهم في اعتماد هذا النظام.
- 9) النزاهة - نظام مصرفي جيد واسلامة الاجراءات
- شركة مزودي الخدمة يجب ان لاتكون هناك احتكار في تقديم الخدمة فمثل ما هو موجود من قبل company spider Libyan
- 10) المصارف - وزارة المالية لاصطدار كروت بلاستيكية - الحكومة - المستهلك
- 11) نعم لان المستخدم يعاني بشكل كبير من الرسوم وخاصة لذوي الدخل المحدود
- 12) في العهد السابق لا يوجد اي دعم ولكن في الوقت الحالي نري هناك مؤشرات تدل علي ذلك الدعم متمثلا في منظومة المصرف والسجل المدني ومنظومة الاحوال المدنية
- 13) نعم فاذا لم يتوفر هذا الدعم من قبل الحكومة لن تحصل اي فائدة دعم التعاون يتحقق بين ضمان الاجراءات ومصارف توفر الخدمة. ب) الدولة , شركة البريد , المصارف , الجهات المسؤلة عن تسلم الطرود
- 14) اوليات الناس تغيرت فنظام الدفع الالكتروني سوف يحدث تغيرا فعليا في الادارة والتي منحت افاق للجميع لتقديم الافضل

- (15) في الوقت الحالي تعتبر الانظمة غير امنة ولكن في المستقبل اعتقد ان يكون افضل
- (16) الفنية - الاقتصادية - النظام الاجتماعي - السياسي
- (17) نعم وخاصة الطبقة المتعلمة
- (18) نعم لتوفير الوقت والوقت من ذهب اي ان الوقت له ثمن وتقليص التعامل بالورق.

- (1) هو عبارة عن دفع الفواتير او اجراء مالي عن طريق الانترنت وله ميزات من توفير الوقت والمكان
- (2) لا بسبب عدم وجود الخدمة في ليبيا
- (3) يتم عن طريق تشجيع المستخدم باستخدام هذه الميزة وذلك بتوفير ميزات تختلف عن استخدام الدفع نقدا واعطاء الزبون ميزات اضافية عند اعتماد نظام الدفع الالكتروني
- (4) استخدام الاعلان التي تساهم في توعية الناس  
اختبار الخدمة قبل تطبيقها ومعرفة العراقيل التي يمكن ان تواجهها
- (5) يعتبر اعتماد هذه الخدمة مهم بالنسبة للزبائن لان الشركة تغلق ابوابها الساعة 4 وبالتالي بتوفير الخدمة يستطيع الزبون ان يتحصل علي الخدمات 24 ساعة
- (6) تعتمد علي مدي دعم الحكومة لتطبيق هذه الخدمة وبالتالي تحت الشركة علي اعتماد الخدمة وبنشر الوعي بين الناس والقيام بالدعايات الكافية.
- (7) ماذا يقول الشرع في تطبيق نظام الدفع الالكتروني وباعتبار ان الخدمة موجودة في العالم فليس علي الشركة الا اصدار قوانين وسياسات تخدم نظام الدفع الالكتروني
- (8) العوامل كله مرتبطة مع بعضها فمثلا مستوي التعليم فالانسان المتعلم يستطيع ان يتحكم في مصاريفه بناء علي مستوي تعليمه ودخله وبالتالي يستطيع ان يقتن امور الدفع ويستفيد من ميزات الدفع الالكتروني.
- (9) الدولة من الضروري ان ترسخ ثقافة الدفع لان الشخص يتق في الحكومة اكثر من الشركة  
نشر الوعي باستخدام الوسائل المتعددة  
مرعاة الجانب الاسلامي في تطبيق نظام الدفع الالكتروني
- (10) لكي يتم اعتماد نظام الدفع الالكتروني من الضروري وجود تعاون بين الافراد – الشركات – المصارف – الحكومة التي تشجع الشركات بتوفير البنية التحتية وتشجيع الزبائن
- (11) نعم تعتبر عالية لان تكلفة الخدمة تعتبر عالية
- (12) الحكومة من المفترض تسن قوانين تحمي حقوق المواطن فعندما يري الشخص الحكومة داعمة لمشروع نظام الدفع الالكتروني عند ذلك تزيد رغبته في اعتماد هذ النظام
- (13) نعم
- (14) تاثير الثورة ليس واضح من البداية فمن المفترض ان تربي الحكومة الجديدة ثقافة نظام الدفع الالكتروني وتنشر الوعي بين الناس
- (15) ليس بشكل كافي لعدم توفر البنية التحتية
- (16) الجانب الاقتصادي – السياسي – الفني – الاجتماعي
- (17) لا مازال الشعب غير وعي بسبب ان النظام السابق لم ينشر ثقافة الانترنت بين الافراد
- (18) نعم قطاع الاتصالات هو المستفيد الاول من نظام الدفع الالكتروني وبالتالي يعود فوائد اعتماده علي الدولة

19) أهمية إصدار قوانين تدعم نظام الدفع الإلكتروني وتكون هادفة وتخدم الجانب الإسلامي



- (1) الدفع الالكتروني يتم عن طريق مواقع متخصصة في الدفع الالكتروني تكون امانة للحفاظ علي سرية المعلومات باستخدام بطاقات الدفع مثل فيزا
  - (2) نعم داخل ليبيا بواسطة بطاقات مصرف الامان وعن كريك شركة FEDEX بتوفير عنوان فعلي في اي دولة يتم توصيل البضاعة المشراة ومن تم توصيلها الي الزبون عبر عنوان الشركة
  - (3) توفير ميزات تضاف الي مستخدمي الدفع الالكتروني تكون اكثر من الدفع النقدي تشجع الناس علي اعتماد نظام الدفع الالكتروني
  - (4) يتم تشجيع الموظفين بتوفير خدمات تكون مخصصة لهم فقط لكي يتم الشراء عبر الانترنت
  - (5) عن طريق الدعم الفني لمستوي معين مجاناً ولوتم اختيار الخدمة فانها تعتبر مهمة للشركة من الناحية المالية لما توفره من وقت واختصار المسافات التي يواجهها الزبائن في غير اوقات العمل الرسمي
  - (6) يتم التعامل معهم بنشر الوعي والاعلانات
  - (7) يعتمد علي توجه الشركة باعتمادها لنظام الدفع الالكتروني فانه سوف يقلل المصاريف من ناحية التسويق وكذلك لما يحققه هذا المشروع من ارباح تعود بالفائدة علي الشركة مما يجعل صانعوا القرار في الشركة يفكرون فيه لما له من مزايا عديدة
  - (8) تاثير مستوي المعيشة يختلف من مدينة الي اخري فمثلا في طرابلس يختلف عن الصحرافية فاحد العوامل المهمة هي وجود الخدمة وبالتالي يتم النظر في مستوي التعليم ومستوي الدخل فمثلا لو اراد الزبون شراء منتج عبر الانترنت ووجده اقل ما هو عليه خارجها فانه سوف يشريه بعد النظر في مستوي دخله الذي سوف يتناسب مع متطلباته. فهكذا توفير الخدمات يؤثر علي مستوي اعتماد الخدمة.
  - (9) توفير خدمة الانترنت في اكثر عدد من مناطق ليبيا، تحديد سعر مناسب للمواطنين، جودة الخدمة
  - (10) يعتمد التعاون علي دور الدولة ومدى دعمها
- الشركة – المصارف – الحكومة – فمن الضروري دراسة الجدوي الاقتصادية بالنسبة للمشروع وماهية الفوائد التي تحصل عليها
- المصرف هو المستفيد الاول لما له من دور في تسهيل اجراءات الدفع الالكتروني وفتح حسابات بشكل ميسر الافراد عندما تري انها وسيلة للتسويق جديدة
- (11) نعم ولقد حاولت الشركة بعرض باقات تكون مناسبة لمستوي دخل الافراد وبالتالي تكون قد خلقت حلا لغلا الاسعار باستخدام الانترنت
  - (12) تفعيل القوانين واللوائح لحماية حقوق الافراد وكذلك لا ننسي الجانب الامني للموقع
  - (13) نعم بتوفير الثقة بين الزبون والشركة
  - (14) استخدام الانترنت بعد الثورة زاد بشكل مظاعف من الناحية الاجتماعية واصبحت الدولة متفتحة ولايوجد بنود اقتصادية تحمي المستهلك ولكن من الناحية السياسية هناك تطور ملموس في تقبل الناس للفكرة لو تم عرضها
  - (15) الان يعتمد علي الشركة التي سوف تعتمد نظام الدفع الالكتروني فمثلا شركة LTT لو اعتمدت الخدمة

سوف يكون اكثر امان لان الشركة متخصصة في الانترنت وخدماتها

16) لا اعتقد ان الناس عندهم وعي

17) ممكن علي مدي بعيد وباعتماد ميزانية معينة

18) تطبيق البرنامج عمليا لمعرفة مدي الايجابيات والسلبيات الواقعية

- 1) عبارة عن شراء عبر الانترنت الكترونيا
- 2) نعم خارج ليبيا لشراء تذاكر سفر
- 3) - توفير مزايا للزبانن وذلك بتوفير الخدمات 7/24
  - الدعاية
  - التوعية
- 4) يوجد عناك تخوف من اعتماد نظام الدفع الالكتروني
- 5) يعتبر مفيد لشراء الحاجيات التي توفرها الشركة في اوقات بعد الدوام الرسمي لعمل الشركات
- 6) يعتمد علي توعية الزبانن للعروض مع تطبيق نظام الدفع الالكتروني بصورة تجريبية حتي تتعرف الشركة علي المشاكل التي تواجه الزبانن
  - يجب ان تشعر الزبون بالامان يجب ان تشعر الزبون بان الامر اقتصادي
  - يجب ان تقدم مزايا لشراء الخدمات عبر الانترنت باقل ما هو عليه عبر الانترنت والابتعاد عن التعامل النقدي
- 7) نعم عندما تكون الشركة كبيرة ومستخدميها كثر فانها تكسب وقت وتحصل علي النقد بتوفير ميزة الشراء عبر الانترنت وبهذا تعمل علي زيادة الزبانن مع الاهتمام بالوقت
- 8) نعم مستوي دخل الفرد ومستوي تعليمه يثاثر بمدى تقبله لخدمة الدفع الالكتروني
- 9) سهولة استخدام تعتمد علي مدى توفر البنية التحتية في كل مكان فعندما تكون النت موجودة في كل مكان يتم تحفيز الزبون علي استخدام نظام الدفع الالكتروني في اي لحظة.
- 10) customer شركة متخصصة في عملية الدفع الالكتروني
- 11) نعم في حالة بقت شركة ليبيا للاتصالات محتكرة خدمة توفير الانترنت وحل هذه المشكلة يتم بتوفير المنافسة.
- 12) لا يوجد اي دعم حكومي في هذا المجال فلا توجد قوانين تجرم القضايا الالكترونية فمن المفترض ان يعرض نظام الدفع الالكتروني علي جهات متخصصة لايجاد حلول مناسبة لاعتماد نظام الدفع الالكتروني
- 13) اقتصاديا لو ركزت الدولة علي الجانب الاقتصادي الذي اري انه من اهم العوامل التي تاثرت بالثورة
- 14) الشركة التي تعتمد خدمة الدفع من المفترض توفر الامان والى الان لا يوجد هناك اي امان
- 15) الفنية security
- 16) المجتمع في ليبيا يشكل الشباب فيه بنسبة 85% من الذين يستخدمون الانترنت 10 % من كبار السن هم غير واعين بخدمة الانترنت والدفع عبر الانترنت
- 17) نعم عندما تتوفر الصفقات عبر الانترنت ل 7/24 اي يعني ان هناك سوف يكون شراء
- 18) لا

- 1) It means for me that i can reach my customer in get what i want immediately. i can provide the service
- 2) Personally, yes, it was from a stand point i used use EPS in regular to pay my bills. It was convenient for them as well for me. EPS a solution to avoid the headache
- 3) In terms of EPS, it takes some investments from the ministry infrastructure stand point. There is no link between the customer and banks except bank of Aman and bank of e-commerce and development. The percentages of Libyan working in public sector are very high. The mail system and how to deliver the products it should be think about it how to improve the mail system as ministry.
- 4) If you give me EPS we can change everything we have internet, mobile, land line, hosting, data centre, we have 17 products and we it's small company and small staff will do allot for looking a solution to avoid a headache in 24/7
- 5) From customer standpoint when they want something they need if now for example when you buy a product you see the advertisement in the TV. The customer want it, he/she get up and start his/her car and walk the place that they want.. It takes time, and sometimes you will find place closed, by adopting EPSP they give them more convince.
- 6) In terms of any company. If they adopt it, they are going for long time until they legalise the regulations for online transaction. It depends on the spread awareness among them to reduce the resistance.
- 7) It is simple map. When looking to Libyan Alamadar Company, they will have more customers on post-paid rather than pre-payment. It is 10% of the population used the internet now a day. It means it will reflect to the business of those companies, such as Libyana, LTT...
- 8) Debit card means that money in your account, the standard of living will effect on how much I can spend. If you consider about of standard of living, the standard of the quality of life will effect on the people what they need and how can they manage their account.
- 9) -Limiting offers  
Give them a reference for buying online they can used to get a bounce.  
Spread awareness among people.
- 10) In my experience the credibility is an important factor should be consider when dealing with credit or debit cards companies.
  - The fear factor

- Banks ( the main core)
- Third party trusted their customer

11) Yes it is not for excuse, the availability the service, if the customer have low income they can't used

12) The government must be provided the e-service, it takes time, we are going to push them. There are terms and conditions everywhere when you have a debit card the responsibility of finance ministry and parliament to make some things clear.

If the government does adopt EPS, the Libyan people are going to produce the service on line the government must look the companies' citizen.

13) Unrest situation affect everyone from EPS factors stand point. The revolution brought the new generation, new educated people, the unrest situation which we receive.

14) We can sell a product abroad now a days if we adopting EPS such as , hosting we sites It is not secure enough system one hindered issues, it is not the system itself but if the people must be aware about the web which the used for transaction.

15) Economic (banking), technical,.

16) education people who are consider the barriers

17) Definitely yes, it's going to get t the money through the banks account for example, after liberating Tripoli from gadafi regime the cash can withdraw is limited for every person from banks , if the EPS service available the people can get their products without any problems.

1 (م) دفع الكتوروني باستخدام اح الكروت ( فيزا او ماستر)

(ر) استخدام الانترنت لشراء بعض الاحتياجات

2 (م) لا

(ر) نعم باستخدام شركة DHL من ناحية العنوان

3 (م) توفير الانترنت

- سعر استخدام الانترنت يجب ان تكون مناسبة

-العنونة ( عدم وجود عنوانين للبيوت علي الرغم من استخدام عنوانين بعض الشركات العامة), نقص برامج التوعية من قبل شركة الاتصالات

(ر) توفير شركة وسيطة ليتم التعامل معاها من ناحية توفير الاحتياجات

4 (م) الثقافة تائر بالتقنية الحديثة فمن المفترض اني كزبون تتوفر الحاجات الاساسية لنظام الدفع الالكتروني

- توفير حسابات مصرفية للتعاملات المالية مثلا دفع فاتورة الكهرباء والغاز والبنزين

عندما يتم نشرها شينا فشيننا هكذا يكون احد الوسائل لنشر الوعي بين الافراد

(ر) الجيران او الاصدقاء او الدولة لو وفرت خدمة الدفع الالكتروني في هذه الحالة العلاقات الشخصية تائر باستخدام نظام الدفع الالكتروني

توفير هذه الخدمة باستخدام البطاقات خارج البلاد

5 (م) مثلا تعبئة رصيد للهاتف في اوقات تكون فيها الشركات مقفلة

اشترك الانترنت

فواتير الكهرباء والغاز حتي لاتقطع الخدمة

(ر) دفع فواتير البيت من كهرباء وغاز وانترنت

تعبئة ارسدة الهاتف الثابت والنقال

6 (م) توفير خدمات وميزات عبر الانترنت بزيادة خدمات اضافية مثلا اعطاء دقائق اضافية في ناحية

الهاتف النقال او اعطاء ساعات اضافية في اشراك الانترنت تكون مجانية

(ر) نسال الناس ماهي الاسباب للرفض؟

التركيز علي برنامج التوعية

نشر الثقة بين الافراد

7 (م) نعم يتم الاستفادة من توفير

خدمات ( توفير مراكز المبيعات)

عمالة

وكلاء او مندوبين

توفير مهندسون ذو خبرة

الزبون يستفيد من ناحية توفير منافسة بين الشركات وقيل هذا كله تركز علي التوعية التقنية

(ر) نفس الخطوات السابقة

(8م) يجب اعتماد هذه الخدمة في البداية بناءا علي المناطق التي يكون معظم سكانها متعلمين ومستوي الدخل جيد

الانسان الذي مستوي معيشته رفاهية يحول حياته الي نظام الدفع الالكتروني

(ر) مستوي الدخل بالنسبة للأفراد يلعب دور في التحكم في المصاريف وشراء الاحتياجات عبر الانترنت مستوي الحياة بالنسبة للأفراد يتاثر باعتماد هذه الخدمة

(9م) لو ان شركة الاتصالات قررت اعتماد نظام الدفع الالكتروني ومتوفر عندها كل الوسائل لاعتمادها الزبون من المفترض ان الشركات توفر دعاية

الزبون يعرض علي الشركات مقترحات فيما يتعلق باختيار نظام الدفع الالكتروني

الزبون يقترح علي الشركة عمل استبيان يوضح ماهية الحاجيات معاها

(ر) نفس الشي

(10) المصارف – الشركات – الافراد- الوسطاء

الشركات تعرض الخدمة التي يحتاجها الزبائن

المصارف عروض لتوفير الخدمات لكسب الزبائن

الافراد دوره مهم لو لم يكن موجود ماكانت الخدمة

(ر) المصارف

(11 م) نعم الشركة تقدم خدمة انترنت عالية

(ر)

(12) اصدار قوانين حماية المستهلك وقوانين الكتروني

(13 م) الانترنت بشكل جيد بحيث ساهمت في نمو السوق في ليبيا بسبب انتشار الوعي بين الناس بحيث الناس

صارت تبحث عن اشياء في الانترنت

(ر) من المفترض وجود ادارة حل الازمات

(14م) لا مازال الان الزبون غير واعي بالامور التقنية

(ر) لا لان احيانا البضاعة المشتراه تكون قد تعرضت الي قرصنة وتزوير

(15م) الاجتماعية الاقتصادية

(ر) الفنية

(16) لا

(ر) لا

(17م) نعم الربح الذي يعود علي الشركة وبالتالي يعود علي الدولة مما يساهم في تخفيض العمالة والوكلاء

(ر) نعم

(18) غرفة التجارة والتنمية يجب ان تعلم بقوانين هذا النظام ووزارة الاتصالات من المفترض ان تبدأ بهذه

العبارة

- 1) عملية الكترونية لشراء الاحتياجات عبر الانترنت في كل زمان وفي كل مكان
- 2) نتيجة لبعض الصعوبات التي يواجهها المواطن وهي مقصورة علي رجال الاعمال
- 3) الدعاية بتعريف المواطن ماهي الفوائد التي يمكن ان نجنيها من استخدام هذ النوع من الدفع الالكتروني ( تجديد اشراك علي الانترنت + الخ) مما يوفر للشركة مصاريف متعلقة بالنظام السابق  
نشر الوعي بين المواطنين  
تكلفة التخزين , المعاملة مع الوكيل
- 4) نعم ادارة الشركة تلعب دور كبير بتدريب المواطنين علي كيفية استعمال النظام  
هذه الشريحة تؤثر علي بقية افراد المجتمع
- 5) عندما يواجه الزبون مشكلة يحاول اللجوء والاتصال بالشركة في اي وقت وفي اي مكان. فعندما تتوفر الراحة للزبون من قبل الشركة الوسيلة للاتصال مع الشركة في اي وقت وفي اي زمن
- 6) من الضروري في البداية توفير الخدمتين النظام العادي والنظام الالكتروني الي ان يتم تكيف الاعلام والدعاية ونشر الوعي
- 7) الجدوي الاقتصادية من استخدام هذا النظام يجب ان يتم حسابها لمعرفة ماهية التكاليف التي كانت تصرف وبالتالي فانها تؤثر علي القرارات التجارية في الشركة
- 8) مستوي المعيشة يلعب دور كبير في اعتماد نظام الدفع الالكتروني فاذا كان دخل الفرد لا يكفي في سد مستلزمات الحياة لكن اذا كان دخل الفرد يشبع حياته فالاقتصاد مقام علي رغبات الاشخاص فعلي العكس في ليبيا الاقتصاد يتحكم في رغبات الاشخاص اذا تم رفع سعر عن سلعة ما فان المواطن يفكر بتغير حول تلك السلعة العامل الاقتصادي يؤثر في حياة الافراد فعندما يكون دخل الفرد جيد ومستوي تعليمه ممتاز فان ذلك يجعله يتاثر بمتطلبات الحياة
- 9) يجب ان توفر الشركة الخدمات المتمثلة في الاتي : نشر الوعي والدعاية الاستفاداة من شركات عالمية اعتمدت نظام الدفع الالكتروني
- 10) الدولة تعتبر الحلقة رقم 1 في خلق التعاون ثم بعد ذلك ياتي دور الشركة في توفير الخدمة الافراد تتوفر لهم راحة في التفكير بان النقوذ موجودة في امان
- 11) نعم تتغير اسعار استخدام الانترنت فهي ليست في متناول الجميع لان وضع الاسعار الحالية لم تتم علي اسس عالمية اي سعر التكلفة لا يكفي سعر الخدمة  
يجب ان تكون الاسعار مناسبة مع سعر التكلفة  
اسعار استخدام الانترنت ليست عائق في حد ذاتها وانما العائق الاساسي هو دخل الفرد
- 12) دور الدولة يجب ان يكون قائم
- 13) اكثر فائدة وبالنسبة للزبائن  
من الناحية السياسية عندما القرار فردي كانت الدولة في السابق قائمة من اجل شخص فالان بعد 17 فبراير تغيرت الامور التقنية بعد 17 فبراير ازداد عدد مستخدمي الانترنت الي اكثر من الضعف



ثورة 17 فبراير غيرت مدي الوعي بين الافراد بدليل ان الافراد اجهت الي الانترنت والان الشركة ساعية الي القيام بتوفير خط فاير لتوفير المزيد من الخدمات

15)مازال لعدم توفر الامور الفنية بين الشركات والمصارف

16) الاقتصادي

7/1 كلما تحسن دخل المواطن ارتقي تفكيره ويتعتبر الشعب الليبي لازال غير واعي نتيجة للثقافة

18) يساهم في رفع الاقتصاد في ليبيا لان هناك شريحة كبيرة واعدة تستخدم الانترنت ونسبة كبيرة من رجال الاعمال وبالتالي سوف يساعد في دعم ورفع مستوي الدفع

- (1) هو عبارة عن استخدام الانترنت في القيام بالدفع
- (2) لا
- (3) شركات الاتصالات يجب عليها ان توفر البنية المناسبة للدفع الالكتروني وتبدأ مبدئياً في استخدام الدفع الالكتروني عبر استخدام الموبايل وبالقيام بتوعية الناس
- (4) نعم لهم دور مؤثر فإذا كانت الإدارة واعية وفاهمة باعتماد نظام الدفع الالكتروني وبالتالي يلعبوا دور مؤثر علي الموظفين في الشركة
- (5) الغاية والغرض من الاستفادة من استخدام التقنية, هي توفير الوقت تعتبر هذه المزايا هي الحلقة الناقصة لكي تستفيد من اعتماد هذا النظام
- (6) الوضع الطبيعي لاي نظام يجب ان تعتمد النظام السابق مع النظام الجديد للدفع الالكتروني ثم يتم الامر تدريجياً الي ان يتم اعتماد هذا النظام
- (7) كشركة يجب مثلها اي شركة تجارية تتفهم القرارات التجارية التي تؤثر في اي قرار تجاري ممكن تاخذه
- (8) الافراد تقيم النظام اللالكتروني الجديد للدفع
- في العادة اعتماد النظام الدفع الالكتروني يستهدف فئة معينة من الافراد الذين لهم معرفة بالانترنت ومستوي تعليمهم يكفل لهم الاستفادة من هذه الخدمة
- (9) توفير الاشياء البسيطة التي تسهل علي الزبون استخدام نظام الدفع الالكتروني بطريقة بسيطة وامنة اسهل وصول واقل مشاكل
- (10) شركة ليبيا تشغل علي E.auction قد تصل في مرحلة الي التأكد من الحساب المصرفي للزبون الزبائن - الشركة - المصارف
- الزبائن هم المستهدف الاول والاخير وهو الذي سوف يدفع من اجل الحصول علي الخدمة
- (11) في المرحلة الحالية لا وفي المستقبل تعتبر اسعار استخدام الانترنت تعتبر عائق
- (12) من وجهة نظري قرار اعتماد نظام الدفع الالكتروني لا يحتاج الي قرار سياسي فمن المفترض وجود قوانين تجرم الجرائم الالكترونية حتي يشعر الزبون بان العملية امانة
- (13) اكد, توجد جهة تضمن لك حقك
- (14) يوجد عدة جوانب سلبية ومن ناحية سحب النقود يوجد هناك سقف محدد لسحب النقود من المصرف . اما بعد الاحداث هو ان الشركة تريد ان ترفع بالخدمة الي ماكانت عليه في السابق فالوقت مازال لفتح باب التنافس
- (15) من ناحية التقنية نفس الشركات العالمية تستطيع شركات الاتصالات توفير كل الاحتياجات المتعلقة بنظام الدفع الالكتروني
- (16) الاقتصادية الفنية ملزمة بها جهة معينة
- (17) غير عارفه لان الناس لم تطلب هذه الخدمة
- (18) عندما يسهل علي الناس القيام بهذه الخدمة فان الشركات تقوم بتوزيع الارباح وبالتالي تعود هذه الخدمة علي اقتصاد الولة ويزيد من دخلها

1 ( ن) طريقة للدفع عبر الانترنت بعرض بعض المنتجات

( م) طريقة للدفع عبر الانترنت

2 ( م) نعم لحجز فندقي خارج ليبيا ( يوجد عندي بطاقة انتمان مصرفية من مصرف الامان )

( ن) لا

3 ( م) توفر لهم عروض اضافية بالحصول علي نقاط ممكن تتحول الي رصيد للحصول علي نسبة معينة

توفر الشركة للزبانن كروت يتم من خلالها تحويل القيمة الموجودة فيه لغرض الحصول علي الخدمة

الدعايات لتوضيح اهمية الخدمة

توضيح الجدوي الاقتصادية اعتماد نظام الدفع الالكتروني

( ن) يعتمد علي شركة الاتصالات في كيفية استخدام هذا النظام وامكانية تحويل الرصيد النقدي الي طريقة تكافي

القيمة المالية وهذا يعتمد الي برامج التوعية

4 ( م) نظام الدفع الالكتروني يتم عن طريق فيزا او حساب مصرفي

حملات توعية او منشورات مما يجعل الزبون يقتنع بالنظام وبالتالي يعتمد الخدمة

( ن) اسلوب التعامل مع الموظفين تختلف عن التعامل مع الزبانن حتي لاتقع في عوانق امامها والحل يمثّل في

كيفية اجتياز عملية الرفض لتوضيح اهمية استخدام هذه الخدمة وتوشيح العملاء بانه سوف يحسن من دخل

الشركة وبالتالي يؤثر علي دخل المواطنين

5( م) من المفترض ان يكون حسابي موجود فيه قيمة مادية فعند الخروج وفي حالة الطواري يتطلب الامر البحث

عن هذه الخدمة وبالتالي تجد ان اهمية اعتماد نظام الدفع الالكتروني

( ن) اي فرصة لن تضيع امام المستخدم ولو ان الزبون يوجد في حسابه قيمة مادية فانه يستطيع ان ينتهز الفرص

المتاحة امامه وبالنسبة للتاجر يعتبر مفيد له علي الرغم من انه موجود في المحل ولكن خدمة البيع تتم عبر

الانترنت في اي وقت

6 ( م) حملة دعائية تتمثل باعطاء مزايا عند استخدام هذه الخدمة ومن الضروري توضيح الامور بحيث تكون

واضحة من البداية

التحدث مع الموظفين ثم التحدث مع الموظفين علي اهمية هذه الخدمة

ادارة الشركة توضح ابعاد المشروع وماهي المزايا والفوائد التي يوفرها المشروع للموظفين

7( م)فتح قنوات تحصيل مداخل اخري عند التعامل شركات البطاقات (( يتم فتح حساب خاص بحيث نضع فيه كمية

من النقد ومن تم نراقب الحساب )) ويعتمد علي قرار الادارة باتخاذ القرار لفترة محدود ولا بد ان يكون الموقع

اكثر امان ومثال علي ذلك pay pal

( ن) لا بد ان يتماشى مع اهداف الشركة وقرارات البنس

8 ( ن) نظام الدفع الالكتروني يوفر كل الامكانيات للزبون ويعتمد عي مستوي التعليم للافراد وثقافة الانسان في

مدي وعي الافراد للتعامل مع هذه الخدمة

( م) عملية الدفع الالكتروني سوف يكون دافع للاخرين في ان يقبلوا مثل هذه الخدمة بالنسبة الي ليبيا توجد هناك

مشكلة في توصيل البضاعة وحل هذه المشكلة هي توفير ان شركة RMX وفرت هذه الخدمة في ليبيا وبتحديد مكان virtual ويتم تحديد سعر التواصل ويوجد هناك شركة اخري اسمها اليمامة توفر نفس الخدمة

(9) كل شركة عندها رخصة التعامل مع الناس لبيع الاشياء فما هو رأي الشرع من هم المصارف التي تقوم بذلك كبيع التعامل بالرجوع الي الشرع

(ن) ضمان التفاهم والاتفاق مع المصارف دراسة المخاطر وتجهيز البنية التحتية وخاصة الجانب الامني لها

(10) (ن) المصرف للقيام التعاملات المالية الكترونيا المستهلك

التاجر هو الذي يقوم بتوفير البضاعة شركة الاتصالات هي الذي توفر الخدمة الحكومة لوغير الجانب القانوني لضمان الاجراءات المالية بطريقة امنة

(م) نفس الاشياء السابقة بالاضافة الي وسيط يمثل في شركة فيزا .. الخ

(2 م) الشركة (ن) المصارف

(11 م) نعم ارتفاع الاسعار يعتبر عائق مقابل الخدمة الاسعار غير مناسبة مع جودة الخدمة (ن) نفس الشيء

(12 ن) الوضع الحالي في ليبيا غير مستقر وضع الدعم الحكومي في الغالب يكون غائب لان الحكومة مؤقتة وفي حالة توفر الاستقرار السياسي يعتمد علي الدستور الذي يحتوي علي مواد من المفترض ان تبحث الامور التتقنية وتشجع قوانين تساعد في الملكية الفكرية ويعتمد علي قرار الحكومة بحيث من الممكن توفر خيارات عديدة

(م) قبل الثورة كانت الحكومة منفصلة عن العالم ماليا بدليل انها لم تتاثر بالازمة المالية والثورة سوف تفرض قوانين جديدة

(13 م) يعتبر الدعم الحكومي اكثر دعم ويحقق فائدة والدولة من المفترض ان تدعم خدمة الدفع الالكتروني لمساعدة المواطنين ويجب ان يكون متماشية مع خدمة الحكومة الالكترونية

(ن) ليس بالضروري ممكن الامور تسير من غير الدعم السياسي

(14 ن) الثورة هي التي تعمل واثرت بالفعل في كل العوامل ولعبت دور ايجابي في نشر الوعي بين الناس مما زاد في عدد مستخدمي الانترنت

(م) الثورة اثرت في العوامل الفنية والاقتصادية ..... ايجابيا في كل النواحي

(15 م) مصرف الامان يعطيك ميزة لمتابعة الحساب وعندهم internet banking للبطاقات الخاصة بهم (ن) secure and safe من الجانب التقني والجانب القانوني من الجانب التقني كل العالم يؤكد ان عملية البيع

والشراء

يعتبر اكثر امان

ولكن من الجانب القانوني كيف يستطيع المواطن ان يسترجع نفوذه في حالة حصول جرائم الكترونية وهذا يجعل

من المواطنين عزوف علي استخدام نظام الدفع الالكتروني

(م) السياسي والاقتصادي

(ن) كل العوامل علي نفس الاهمية

(17 ن) الشعب ليس واعي بالمعوقات لانه ليس بواعي بخدمة نظام الدفع الالكتروني

(م) واعي لابد الانسان البسيط واعي بان الخدمة تتم عن طريق الانترنت ولكن كيفية اعتمادها لايعرف

(18 ن) اكيد العامل المشترك بين الليبيين هو الموبايل وعندما تعرض شركة مثل هذه الخدمة فان الوسيلة التي

تلعب دور في التأثير هي استخدام الهاتف بنشر الوعي بين الناس عبر ارسال رسائل

المصرف من المفترض توفير ادوات للتعامل مع هذه الخدمة

المواطن يستخدم credit في حالة عدم وجود رصيد او استخدام رصيد الهاتف

(م) في بعض المصارف تستخدم mobile banking وكذلك استخدام e-wallet و تحول رصيد من حسابك

لاستخدام في نظام الدفع الالكتروني

(ن) بالنسبة لشركات الاتصالات عملت علي تشريع من القيام بعملية الدفع الالكتروني

- (1) الدفع الالكتروني يتمثل في نظام المدفوعات الوطني منظومة حساب الزبائن , نظام معالجة الصكوك اليا , منظومة لمعالجة الحوالات بين فروع المصرف والمصارف التجارية الاخرى
- (2) لم استخدم هذا النظام ولكن علي علم بالمزايا والعيوب
- (3) نظام الدفع الالكتروني من الضروري يكون مدعوم من الحكومة بتوفير اساسيات البنية التحتية ودعم المصارف في هذا الجانب
- (4) الادارة الجديدة داخل القطاع المصرفي تتغير بزيادة الضغط من الزبائن وبالتالي تؤثر في موظفيها ولم توفر البيئة المناسبة واقناع المواطنين بتفعيل هذا النظام
- (5) عندما يفعل النظام الالكتروني يستطيع الزبون في اي وقت يقوم بعملية الشراء فتتغير طريق اخري لتقييم الموظفين من خلال قسم ادارة الموارد البشرية
- (6) غياب الوعي المصرفي في المجتمع الليبي هو السبب الذي جعل البساطة في التعامل مع المصرف ويتم التغلب علي ذلك
- نشر الوعي  
الاعلانات  
طريقة التخاطب مع الزبائن  
توفير ماكينات ATM
- (7) عند تفعيل الخدمة بين المصارف المختلفة بين المصارف وعند اصدار بطاقات debit يستطيع الزبون ان يستفيد من هذه الخدمة
- نظام المقاصة الالكترونية يجعل الزبائن يتقون اكثر في المصارف وتفضل الثقة المتبادلة بين الزبائن والمصارف من الناحية التجارية , الزبائن تحول مداخلها الي المصارف وبالتالي يستفيد المصرف من الاموال التي تدخل اليه
- (8) نظام الدفع الالكتروني يتاثر بمستوي معيشة الفرد وذلك عندما يتفعل هذا النظام يجعل من المواطن يبدع في شغله وبالتالي يتحصل علي مزايا مادية ومعنوية مما يزيد من دخله وبالتالي يستطيع الاستفادة من خدمة نظام الدفع الالكتروني
- المواطنين انواع متعلمين ومثقفين فالناس المتعلمة والمثقفة هم اكثر فئة في المجتمع يكونوا متلهفين لاعتماد هذه الخدمة
- (9) بضغط من الحكومة بتفعيل خدمة الاتصالات ف ربط شبكة ATM مع بعض من الناحية الفنية
- (10) الكادر الوظيفي للجهاز المصرفي
- ادارة راعية في ادخال نظام الدفع الالكتروني
  - الحكومة
  - التسويق ( تفعيل دور التسويق في القطاع المصرفي عن طريق اقناع الزبائن من خلال قطاع

(التسويق)

2) كافة اطياف المجتمع

صفوة الصفوة – المتعلمين والمتقنين

11) نعم من حيث التكلفة – الخدمة – العيوب كلها موجودة

12) عندما تكون هناك ارادة سياسية لاتخاذ القرار السياسي عندما يكون حازم وقوي وتفعيل نظام الدفع

الالكتروني

13) هناك فائدة من الدعم الحكومي

14) اثرث الثورة في العديد من العوامل وغيرت عدة امور منها انفتاح الناس علي الانترنت وسياسيا

اصبحت الحكومة واصحاب القرار يفكرون في مشاريع منها الحكومة الالكترونية وبالتالي الثورة غيرت

الامور الي الافضل

15) عملية البيع والشراء عبر الانترنت غير امنة في الوقت الحالي في حالة اعتمد ولكن في المستقبل نحتاج

الي بدل جهد تقني

16) العامل الفني متوفر من خلال الخبرات , العامل الاقتصادي ليبييا قادرة علي التقدم العامل الاجتماعي

ترغب في التطور

السياسي هم الاهم وهو العامل الغائب ولا بد من وجود هذا العامل لتفعيل هذه الخدمة

17) اهم حاجة في التوعية هي التسويق لان فيه الاعلان مراكز البيع

18) عن طريق تفعيل النظام الالكتروني الشركات الاجنبية عندما تاتي وتريد الاستثمار فيوجود نظام الدفع

الالكتروني للدفع يعمل علي دفع عملية التقدم الاقتصادية للبلد

- (1) هو عبارة عن استخدام الدفع الالكتروني باستخدام بطاقات مصرفية بطرق مؤقتة هدفها الرئيسي التقليل من التعامل النقدي
- (2) نعم فيزا وماستر استخدمته داخل ليبيا وخارج ليبيا في الحجز الفندقي ومن بعض هذه المصارف مصرف الامان
- (3) ضروري من توفيرها بشكل موسع  
توفير البنية التحتية
- توعية التجار
  - توعية التامين
- في هذه الحالة هذه الحالة تكتمل التوعية وهناك نظام واحد وموجود في شركة الصرافة وبشكل محدود للدفع الالكتروني
- EPS علي مستوي الشركات
  - Retail البنية التحتية في ليبيا ناقصة
  - البنوك قصور في التدريب وتوعية مواضعها
  - قطاع الاتصالات لاتوجد بنية غير كافية وحتى لو وجدت غير مستخدمة بالشكل الكافي
  - الناس
  - الكهرباء من الضروري توفير الكهرباء حتي لاتنقطع
- (4) توعية وتدريب وتشجيع علي بدل مجهود اضافي
- (5) مهمة جدا نلاحظ ازدحام غير عادي بسبب ذهاب الناس الي المصارف ولو وجدت وسائل الدفع الالكتروني لن تحدث الزحمة. الخدمة متوفرة خلال اوقات الدوام ويتوفير الخدمة سوف توفر الوقت وسهولة التعامل في لحظة
- (6) الرفض من الزبائن يتم مقاومته بتوفير الخدمة بشكل امن وبدرجة عالية لكي تحد من fraud
- حماية قاعدة البيانات لزيانها
- (7) الزبون عندما توفر له بطاقة اي يحدث هناك اي تواصل بين الزبون والمصارف وتزيد ارتفاع الثقة بينهم مما يجعل هناك رغبة الزبون للتعامل مع المصارف بطريقة الكترونية بعيدا عن استخدام التمويل
- (8) مستوي المعيشة مرتبطة بكل مواطن عندما يكون دخله جيد يستطيع ان ينظم الصرف
- Debit card اي شخص يستطيع اي شخص التعامل معها
- Credit card تعتمد علي نوعين السحب الاسلامي او غير الاسلامي
- المزايا توفر النقود في اي لحظة
- العيوب في اي لحظة تستطيع ان نسحب وبالتالي تزيد رغبة الزبون في سحب الاموال مما يجعل الزبون يبحث علي مصادر دخل يتناسب مع مصاريفه
- (9) تدريب المواطنين



- تجهيز الكوادر
  - البنية التحتية
  - التجار (تحتج الي و عي لخدمة سوق توفر له فوائد وينظم شغله بزيادة عدد الزبائن)
  - تشجيع الزبائن بتوفير مزايا يستطيع الحصول عليها اثناء عملية الشراء
- 10 Retail نظام الدفع الالكتروني عن طريق النت**  
عن طريق البطاقات
- (1 eps عن طريق البطاقات عملية الدفع تبدأ من التاجر الي
- (1 التاجر 2) مجمع البيانات المصرفية 3) assure bank ممثل فيزا و ماستر
- (2 المصارف
- (11 اسعار الانترنت مربوطة بالبنية التحتية فاسعار الاتصالات تعتبر عالية
- التاجر يوفر الانترنت كمبيوتر و ايجار الخدمة
- (12 من المفترض وجود دعم سياسي لنظام الدفع الالكتروني
- من ناحية مراقبة المشتريات وعمل الاحصائيات التي علي ضوءها يتم توجيه العائلات الي التحكم في الصرف
  - قوانين التجارة الالكترونية غير موجودة في ليبيا
  - من المفترض من الدولة مراقبة حقوق الافراد ومراجعة عقود الشراء والبيع
- (13 الدعم السياسي يعتبر اكثر فائدة لكل الاطراف
- شركات الاتصالات
  - البنوك
- (14 الثورة الغت بشكل المركزية واثرت علي كل القطاعات ومن المفترض يغير من الفساد الذي كان موجود في السابق
- (15 عدم وجود الخدمة لا يستطيع احد ان يجزم بانه secure وبالنسبة للبطاقات تعتبر عالميا متوفرة شروط الامن بشكل عالي
- (16 الجانب الاقتصادي بشكل اهمية تتمثل في البنوك لانه سيوفر ثقة في المصارف وبين الزبائن ويزيد المعاملات التجارية
- (17 لا لان معظم المجتمع الليبي يلوم المصارف ولكن العيب هو وجود النظام العشوائي في السابق اثر علي المجتمع
- (18 اكيد يحسن من الخدمة ويحسن من خدمات المصارف

1 (س) شراء عبر الانترنت باستخدام بطاقات فيزا

(ص) نفس الشيء

2 (ص) سبق لي استخدامه بالحصول علي بطاقات من مصرف الامان ومصرف التجارة والتنمية لانه يعطي ميزة معرفة transaction

(س) سبق لي ان استخدمته بالحصول علي بطاقات من مصرف التجارة والتنمية

3 (ص) عندي خبرة في التعامل مع مصرف التجارة والتنمية وعندما نشعر بتحسين الخدمة من قبل المصارف في تلك الاموال تقوم:

بتوعية الناس

وجود اتفاقية بين الشركة والمصارف لتوفير هذه الخدمة

(س) انشاء البنية التحتية

تفعيل العنونة بتوفير عنوانين بريدية لاستكمال عملية الدفع بتوصيل المنتج

4(ص) التوعية والوعي والارادة لتوفير هذه الخدمة

(س) نفس الكلام

5 (5) تغير اسلوب نمطه من الكاش الي الالكتروني وسبب تاثير الافراد باعتماد خدمات جديدة وبالتالي كيف ان الخدمة تكون متوفرة في 7/24

6 (6) عند توفر الوعي بين الافراد وتوفير مزايا مصاحبة للخدمة

7 (7) عندما يتم اعتماد هذه الخدمة تحقق جدوي اقتصادية وتقلل مصاريف طباعة الثروات والتخزين وحماية تلك الكروت ... الخ وبالتالي الشركة عندما تعتمد قرار الاعتماد فانه ينتج عنه مزايا وفوائد

8 (8) بالنسبة لمحدودي الدخل هم ما يتعاملوا ب credit وعندئذ فان الشخص ينظر لهذه الخدمة بالنسبة لمستوي دخله

(ص) مستوي معيشة الفرد يثاثر بالدخل الذي يتحصل عليه

مصرف الامان ياخذوا 4% عن كل ابداع

9(بتوفير موقع امن

وعي للناس

خدمات ومزايا للشباب

10customer هو المستفدين

الشركة تعرض للزبانن السلع

المصرف بتامين عملية البيع والشراء

2(المصارف

11 اسعار الانترنت تعتبر مرتفعة شيئا ما.

12 اصدار القوانين وتفعيل القوانين وتشريع القوانين

- (13) وجود الدعم السياسي يلعب دور مهم في دعم نظام الدفع الالكتروني
- (14) الدولة لن تكون دولة امانة تخدم في شخص واحد فلقد غيرت الثورة العديد من الاشياء
- (15) ليس امن بالصورة المطلوبة ومن المفترض اخذ ميزة الشركات الاخرى
- (16) الفنية الاقتصادية السياسية الاجتماعية
- (17) المجتمع واعى بدليل مستعد بتقبل اي خدمة جديدة مثل smart phones
- (18) نعم عندما يتم اعتماد نظام الدفع الالكتروني سوف يشجع الشركات الاجنبية وهكذا يزيد من دخل الدولة
- (19) ممكن ان تكون الخدمة متوفرة في الفنادق

- 1) يعني لي اسلوب دفع الكتروني عن طريق الانترنت
  - 2) نعم خارج ليبيا بسبب عدم توفر البنية التحتية داخل ليبيا
  - 3) في الوقت الحالي النائب الاول لرئاسة الوزراء بدأ في تفعيل الاشغال الالكترونية
    - من الضروري يجب ان تكون متفاعلة مع القطاع الاهلي وبناء قاعدة صلبة
    - الاستفادة من الخبرات السابقة
    - انتشار الوعي بين الافراد
    - نشر الثقة بين الافراد
  - 4) عندما يتم اعتماد هذه الخدمة فانه يؤثر علي الخدمة اي ان اي موظف يستطيع ان يقوم ويدفع مستحقاته عبر الانترنت وبالتالي تحافظ علي الخدمة
  - 5) من المفترض ان الانترنت متوفرة في كل مكان وبالتالي الخدمة توفر الخدمة في اي وقت ومن اي مكان
  - 6) سبب الرفض احيانا يكون سببه التخوف والفئة العمرية الاعلانات- الدعاية - والوعي قبل اعتماد النظام
  - 7) يوجد هناك افراد ولو وجدوا هذه الخدمة امامهم سوف يقوموا بمساعدة الدولة والحكومة في اعتماد هذا النظام
  - 8) مستوي دخل الفرد هو معيار التقدم للشعوب وما يترتب عليه من المصروفات
    - المستوي التعليمي له دور عندما يتخرج الطالب في سن مبكرة
    - المواطن يكن له وعي كاف من خلاله يستطيع ان يقتن اموره علي مصروفاته
  - 9) توفير البنية التحتية في الاتصالات
  - 10) حركة اجراءات المالية
    - المصرف ( هو الذي يعطي الموافقة لعملية transaction + debit + credit
    - الشخص الذي عنده المنتج customer
    - الشركة
- (2)البائع والشاري
- 11) نعم الانترنت اسعارها عالية
  - 12) اصدار القوانين وتفعيل القوانين وتشريع القوانين وتنظيم التشريعات في الحكومة ووزارة الاتصالات ولا توجد قوانين تتعامل مع التجارة الالكترونية
- تم دعوة الحكومة الي تسريع قوانين لحماية حقوق الافراد وعندما يجد الفرد تلك القوانين التي تحمي حقوقه بالتالي يتشجع علي اعتماد الدفع الالكتروني
- اصدار قوانين تشريعية تخص التجارة الالكترونية
- دعم الحكومة لمثل هذه المشاريع يجعل المواطن يحس بالامان عند استخدام نظام الدفع الالكتروني
- 13) نعم وجود الدعم السياسي يلعب دور مهم في دعم نظام الدفع الالكتروني

14) الثورة ساهمت في تغيير المفاهيم والمشاريع المحنكرة من قبل شركات معينة وعدم فتح المنافسة وبالتالي اشعر بان الثورة سوف تؤثر علي اعتماد المشاريع الرقمية وبدليل نسبة مستخدمي الانترنت زاد بعد الثورة وبالتالي هناك ثورة في المعلوماتية

15) في الوضع الراهن من الضروري توفير security بسبب وجود المال عبر الانترنت

16) الفني يعني السرعة والامان

السياسي

الاجتماعية يبحث عن القليل من الامكانيات

17) المجتمع الليبي واعى بدليل تعاملهم مع الثورة المعلوماتية

18) يعني ولكن ليس بالعنصر الاساسي ولكنه يلعب دور ويساهم في دعم عملية التقدم

20) يجب ان يتم التركيز علي الخبرات الليبية مع الاهتمام بالجانب الليبي

- 1) Electronic transaction, when the customer needs for purchase and he used a plastic card that has digital information related to bank information , it will enter the system where the system interact with provider, bank and customer
- 2) Of course, yes, I used a lot a board and there are any problems i have in the state. Advanced technology facilitating the process of E-payment system
- 3) -Provide the service in easy convince the way,
  - They have to advertise to the people and tell them and show them how the system work and convince. the people to buy without cash and go to adopt without any complication
  - They have to run the awareness to educate people through the media
- 4) If the infrastructure there, we will open training centre if we implement the system and we make them aware about the system.
- 5) They do not have in a specifically to be in the plane of company
  - Efficiency and when you need to buy some things you can do it 24/7 with the bank.
  - With the e-means all the facilities will be there
- 6) If we implemented the system (EPS) any project we have to do it must have the project plane, change management plane. How to manage the change which is resistance that study require to know the reason of resistance. According to infrastructure, when we defined that the factors that make the people resist the system.
- 7) They understand it very well there are huge of benefits. this is the money , because if they adopted e-means , that means minimise the cost , the only cost is how to develop the system
- 8) The more successful adoption of EPS in the west devolving countries, the way how do online transaction. All factors you name are very important the standard of living is related directly to the convent way of life. If I am leavening inconvenient way through cutting effort cutting money business means just only have pc to monitor their transaction. Finical status and is the main drive to adopt new technology such as E-payment system.
- 9) Security, the most important for all transaction between website seller :
  - convince
  - Friendly they don't aware about electronic means
  - Set transaction security protocol from my pc computer to the bank.

- 10) 1) customer, purchase and make the payment, eps provider, which is obligation for them
- 2) The provider the servicer such as Amazon  
 Payment gateway who facilitating the transaction  
 Bank that collect and give it to the provider  
 Credit card the bank goes through the credit card. We have 5 stakeholders
- 11) All of the stakeholder.
- 12) The cost of internet access is very important for the top management need a plane to reduce the money and provide the service in the highest that we can.
- 13) Of course, at any time the selling and buying would be dispute through third party. EPS has not implemented yet and the legal people will write the laws about of how the people can conduct their business online and how to provide privacy for people. Of course as politician make sure the privacy are provided to the people, and we have a plane to issue the legislation to criminalize the electronic criminals.
- 13) yes the political support is where everything start from the top of government who are can give a permit to conduct transactions, and the customer always going to the poltion to support them.
- 14) So, the 17 revolution, the government put in their priorities on the top to make sure the Libyan society will be equal when comes to adopt and participate higher technology as whole with other societies.
- 15) Right now, it is not, of course in future we will improve the system the infrastructure
- 16) Security, technically
- 17) Some of people ware the barrier especially highly educated people and the rest they do not know what the barriers are?
- 18) Absolutely, there are many foreign companies need to invest their money in Libya which that will be beneficial to the Libyan as a whole in specific the economic sector.
- 19) no, to ground the rules as government and build infrastructure and make Libya ready for any transaction and now we are prepare our self to start e-Libya .

- 1) نظام دفع يستخدم للتعامل عبر الانترنت للقيام بعمليات البيع والشراء
- 2) لا
- 3) اعلانات نصية  
رسائل نصية
- 4) اعتماد التوعية بين الافراد عبر وسائل الاعلام
- 5) يعتبر مهم للزبائن من ناحية توفير الزمن والوقت وكذلك ما يوفره من اموال
- 6) التوعية والاعلانات
- 7) لا بد ان تفهم الامور التجارية قبل ان تبدأ بالاضافة الي الوزارة من الضروري تفعيلها لانه يعود بالفائدة
- 8) يعتمد علي اقتصاد الدولة لما له من دور مهم في مستوي المعيشة للمواطنين يثاثر نظام الدفع الالكتروني كلما كان دخله جيد تزيد رغبته للشراء وكذلك يؤثر علي اقتصاد الدولة
- 9) التشريع  
البنية التحتية من الضروري تحسينها  
ربط المصارف مع بعضها وتكون مستعدة لخدمة الدفع الالكتروني
- 10) شركات خاصة مثل فيزا وماستر  
مصارف تدعم خدمات بطاقات الائتمان  
الزبائن مثل الافراد والاسواق  
جهاز ينظم العلاقات بين كل الاكراف يتبع الي الحكومة  
الزبائن
- 11) ليست عائق ولكن تحتاج الي تخفيض ومستوي المعيشة للمواطنين من الممكن تتحسن
- 12) جور الحكومة يجب ان تقدم اقتراحات لجهات الاختصاص فيما يتعلق بالقوانين
- 13) دعم الحكومة يعتبر مهم لما لها من فوائد مما تشجع الاخرين علي اعتماد نظام الدفع الالكتروني
- 14) ثورة 17 فبراير حركت كل الجوانب في ليبيا ونحن علي امل في ان تساهم الثورة في تطوير قطاع الاتصالات واحترام راي المواطن الليبي
- 15) التقنية في الوقت الحالي لا
- 16) كلهم علي حد سواء
- 17) لايعتبر الشعب واعى بالطريقة التي تجعله يعتمد النظام في الوقت الحالي
- 18) تسهيل الاجراءات وتقليل نسبة الاحتكار من قبل بعض الشركات والافراد



- (1 أ) دفع الفواتير بطريقة إلكترونية  
(ب) هو عبارة عن نظام يتم تحويل النقود عبر الإنترنت  
(ج) هو عبارة عن الدفع عبر الإنترنت  
(د) استخدام الإنترنت لتحويل أي قيمة نقدية عبر الإنترنت إلى مايكافنشا إلكترونيا
- (2) أ، ب، ج، د ( نعم  
(3) يعتمد على النظام كلما كان النظام بسيط أصبح من السهل اعتماده
- (1) التوعية والإعلانات  
(2) تشجيع الزبائن على عمل direct debit وإعلام الزبائن بموعد سحب الأموال  
(4) ثقافة الشعب هي الأداة للتعامل مع الخدمات الإلكترونية لأن الشعب يتقبل أي حاجة فيها تقنية  
(5) أكون مرتاح في أي وقت أستطيع أن أعمل تعبئة الرصيد وأنا في مكاني  
(6) system simple to use  
Cost of using the system  
(7) نعم
- (8) مستوى المعيشة لدى الأفراد يلعب دوراً ويعتمد على مستوى المعيشة لكل الأفراد  
المؤسسة ( الشركة)  
البنك  
الزبائن
- (9) يجب أن يكون النظام بسيطاً وأن تتوفر البنية التحتية  
(10) الشركة  
الحكومة  
المصرف يوفر عملية البيع بكيفية آمنة  
الزبائن  
(2) المصرف
- (11) عائق وتعتبر عالية بالنسبة بالنسبة لدخل الفرد  
Reliability للخدمة
- (12) لا يوجد هناك أي دعم من الحكومة للخدمات الإلكترونية في العهد البائد ومن المفترض أن يكون هناك دعم حكومي بتفعيل قوانين  
(13) نعم
- (14) زمام المبادرة عند شباب ليبيا الذي حرر ليبيا وهم من سيلعب دوراً في تطوير الخدمات في ليبيا ويوجد هناك تقدم في تصورنا في كل المجالات  
(15) يعتمد على service provider ماذا تقدم

(16) كلهم

الاجتماعية

الاقتصادية

(17) المجتمع يعتمد علي الشريحة المتعلمة التي تعرف ماهية الميزات والعيوب

(18) نعم مادام الامر مربوط بالوقت والوقت يساوي فلوس time is money

(19) بساطة النظام

## 9.6 Appendix F: Open coding categories (consumer perspective)

Category	Codes
1) Customer' characteristics	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Customer experience</li> <li>• Customer skills</li> </ul>
2) Social impact	<ul style="list-style-type: none"> <li>• Social influence</li> <li>• Resistance to change</li> <li>• Customer awareness</li> <li>• Age</li> <li>• Education level</li> <li>• E-payment system culture</li> <li>• Customer needs</li> </ul>
3) Economic factors	<ul style="list-style-type: none"> <li>• Perceived benefits</li> <li>• Cooperation</li> <li>• Mutuality of Stakeholder Benefits</li> <li>• Cost of Internet</li> <li>• Standard of living</li> <li>• Commercial awareness among customers</li> <li>• Withdrawal of control</li> <li>• Marketing business wariness</li> <li>• Feasibility studies for E-payment system</li> <li>• Islamic banking</li> <li>• Competition</li> </ul>
4) Technical concern	<ul style="list-style-type: none"> <li>• Security</li> <li>• Trust</li> <li>• Reliability to EPS</li> <li>• Acceptability</li> <li>• Ease of Use</li> <li>• Accessibility</li> <li>• Convenience</li> <li>• Post coding</li> </ul>

## 9.7 Appendix G: Open coding categories (organisation perspective)

Category	Codes
1) Staff characteristics	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Staff experience</li> </ul>
2) social influence	<ul style="list-style-type: none"> <li>• Social influence</li> <li>• Resistance to change</li> <li>• Staff awareness</li> <li>• Age</li> <li>• Education level</li> <li>• Change management</li> <li>• Ease of communication between companies and consumers</li> </ul>
3) Economic factors	<ul style="list-style-type: none"> <li>• Perceived benefits</li> <li>• Cooperation with external entities</li> <li>• Mutuality of Stakeholder Benefits</li> <li>• Cost of Internet</li> <li>• Competition</li> <li>• Withdrawal of control</li> <li>• Islamic banking factor</li> <li>• Banking infrastructure</li> <li>• Marketing business</li> <li>• Standard of living</li> </ul>
4) Technical concern	<ul style="list-style-type: none"> <li>• Security</li> <li>• Trust</li> <li>• Reliability to EPS</li> <li>• Technical infrastructure</li> <li>• Acceptability</li> <li>• Ease of Use</li> <li>• Accessibility</li> <li>• Convenience</li> <li>• Post coding</li> </ul>
5) Organisational factor	<ul style="list-style-type: none"> <li>• Change of management</li> <li>• Availability of the service</li> <li>• Training courses</li> <li>• Availability of electricity</li> </ul>
6) Political issues	<ul style="list-style-type: none"> <li>• Instability of political situation</li> <li>• Governed by a single person</li> <li>• Cooperation between government, banks and telecommunication companies.</li> <li>• Political power</li> <li>• Legal frame work</li> </ul>

## 9.8 Appendix H: Customer's questions

- 1) What does the term E-payment system mean to you?
- 2) Have you had the opportunity to use an E-payment system? If "yes," please explain, how and where?

If no, please explain why not?

- 3) In your opinion, what can telecommunications companies in Libya do to encourage their customers to use an E-payment system service? Please explain.
- 4) In your opinion, what methods must be taken into account by telecommunications companies/banks/governments when they are dealing with consumers who prefer to use a cash payment system? Please explain.
- 5) How can Libya's social and culture affect the adoption of an E-payment system?
  - 6) What features of an E-payment system are important to you? Please explain.
- 7) In your opinion, how can telecommunications companies and their customers benefit from adopting an E-payment system? Please explain.
- 8) How can the adoption of an E-payment system by telecommunication companies affect standards of living in terms of the quality and availability of employment, income, quality of education, cost of goods, economic and political stability and others? Please explain.
- 9) How will the E-payment system be accepted in the future? Please explain.
- 10) Explain the role of:
  - A) Cooperation between stakeholders and customers (Libyan individuals), telecommunication companies (staff and top management), banks (local Libyan and international banks), sellers, the Libyan government and intermediate

companies (e.g. Visa, MasterCard and other credit cards) in the case of an E-payment system adopted in Libya.

B) Who is/are the stakeholder/s expected to benefit from the adoption of an electronic payment system in Libya?

11) Do you consider the prices for the use of internet access affect the adoption of an E-payment system? Please explain.

12) How can there be political support for legislation and policies for the adoption of an electronic payment system?

13) In your opinion, how does political unrest in Libya since February 2011 affect the adoption of an electronic payment system in terms of political, social, economic and technical factors?

14) In your opinion, do you think that when you buy products online and pay using an electronic payment system, it is safe and secure in the context of Libya? Please explain.

15) In your opinion, what are the most significant factors affecting the adoption of an E-payment system in Libya?

16) In your opinion, according to the culture of E-payment systems, how can the Libyan people identify the barriers to the adoption of an E-payment system?

17) How can the adoption of an E-payment system by telecommunications companies contribute to economic growth in Libya?

18) Do you have any further comments regarding the adoption of an electronic payment system in Libya?

## 9.9 Appendix I: Organisation's questions

1) What does the term E-payment system mean to you?

2) Have you had the chance to use it? If "yes," please explain, how and where?

If no, please explain why not?

3) In your opinion, what can the telecommunications companies/banks/governments in Libya do to encourage the use of an E-payment system service? Please explain.

4) In your opinion, how can management within telecommunication companies/banks/government influence their staff toward adopting an E-payment system?

5) What features of an E-payment system are important to you? Please explain.

6) In your opinion, what kind of methods must be taken into account by telecommunications companies/banks / government when dealing with consumers who prefer to use a cash payment system? Please explain.

7) In your opinion, what are the factors that could assist the management of telecommunications companies / banks / government to adopt an electronic payment system? Please explain.

8) How can the adoption of an E-payment system by telecommunications companies / banks / government affect the standard of living in terms of quality and availability of employment, income, quality of education, cost of goods, economic and political stability and others? Please explain?

9) What steps can the company consider to ensure the E-payment system is accepted?

10) Explain the role of:

1) Cooperation among stakeholders in the case of an E-payment system adopted in Libya.

3) Who is/are the stakeholder/s that expected to receive benefits from the adoption of an electronic payment system in Libya?

11) How does the cost of Internet access affect E-payment system adoption in Libya? Please explain.

12) Explain the role of the government in the adoption of an electronic payment system process?

13) In your opinion, how does political unrest in Libya since February 2011 affect the adoption of an electronic payment system in terms of political, social, economic and technical factors?

14) How can government support become beneficial to telecommunications companies / banks for the adoption of an electronic payment system?

15) In your opinion, do you think that when telecommunications companies buy their products online and pay using electronic payments, it is safe and secure in the context of Libya? Please explain.

16) In your opinion, what are the most significant factors that affect the adoption of an E-payment system by telecommunication companies in Tripoli-Libya?



17) In your opinion, according to the culture of an E-payment system, how can telecommunications staff / banks / government consider the barriers to adoption of an E-payment system?

18) How can the adoption of an E-payment system within telecommunication companies enable Libyan people to take more control of their online transactions, and how can the adoption of an E-payment system within telecommunication companies contribute to economic growth in Libya?

19) Do you have any further comments regarding the adoption of an electronic payment system in Libya?

## **9.10 Appendix J: Theoretical explanation**

### **9.10.1 Introduction**

In this chapter, further explanations will be offered to obtain greater understanding of the emerged theory from the Libyan context. To achieve this, theoretical aspects in relation to factors affecting the E-payment systems as discussed in the following section and subsections will help to understand the findings of the current research. This section is divided into two main subsections; the first section will explain the nature of various kinds of theories used in information systems which are classified into five categories based on the objective of each of them, while the second subsection will explain the theory that is used for the explanation of more findings.

### **9.10.2 Theoretical aspects in relation to factors affecting the E-payment systems**

This section provides a theoretical background regarding the adoption of EPS. There are various kinds of theories used in information systems. They are classified into five categories based on the objective of each of them: Theory for Analyzing, Theory for Explaining, Theory for Predicting, Theory for Explaining and Predicting and Theory for Design and Action (McKelvey, 1982; Doty and Glick 1994; Iivari *et al.*, 2006; cited in Shirley 2006). However,

Currie (2009, p.66) claimed that most research on information systems has focused on individuals and organisational level. Based on that, the researcher argues that the theoretical aspects could help to understand and explain human behaviour, perspective and attitude towards the adoption of EPS.

The identified factors that were discussed in section 2.8 have an influence upon the participants' perspective, attitude and the decision to accept such systems (Ozkan *et al.*,

2009). Therefore, there are many theories that may explain the impact of economic, political, social and technical factors on the adoption of EPS, such as the following:

Firstly, theories of behaviour: the participants' behaviour can be explained by theories of behaviour which are classified under Explaining and Predicting theories, such as, Theory of Reasoned Action TRA (Fishbein and Ajzen, 1975), Theory of Planned Behaviour (TPB) is an extension of TRA (Manstead and Eekelen, 1998) and subsequent Technology Acceptance Model (TAM) (Davis, 1989; Bagozzi *et al.*, 1992). Theories of behaviour aim to understand, explain or predict how, why and what individuals or organisations will adopt as regards new technology (Friedman 1974; Nagel 1979; Ajzen, 1980; Achinstein 1983; Davis, 1989; Mayes 2004).

Secondly, organisation theory is utilized for identifying common issues for the objective of solving problems, maximizing productivity and efficiency and fulfilling the requirements of the stakeholder (Hatch and Cunliffe, 2006). It is closely linked to people's behaviour within organisations and how they act and behave (Robbins and Judge, 2011). It is classified into three categories (Daft and Armstrong, 2009; Tsoukas, and Knudsen, 2003). Firstly, the classical perspective, which emerged from notions of efficiency from the Industrial Revolution. Secondly, the neoclassical perspective, which emphasised the socio-psychological aspects of human behaviour within organizations. Thirdly, the contingency theory, which is the behavioural theory that can organize a corporation or lead a company, or make decisions. The best organization or decision making style depends upon various internal and external factors.

Thirdly, economic theories broadly fall under two categories (Wadley, 2011)..Firstly, micro-economic theories, which deal with a low level of economic activity, such as a

market for a particular product, or the behaviour of individuals within a particular industry. Secondly, macro-economic theories, which are concerned with studies at a national level. It prescribes policy which is based on the study of behaviour of the important key variables of theories such as output or income, unemployment rate, inflation rate and interest rate (Becker, 2007; Roycroft and Siriwan, 2003).

Fourthly, political theory; it is clarified and defined as a discipline to explain and justify the role of power in society (Azab *et al.*, 2009; Marsh and Stoker, 2010). It outlines the balance of power between government and individuals (Kelly, 2006). Essentially, power lies where the resources are, such as, personal, economic, moral, etc (Vatiero, 2009; Boucher and Kelly, 2003).

Fifthly, social theory; (John and Willcocks, 2004, p.9) asserted that any theory about human individuals is asocial theory. It would more be appropriate, they said, to discuss extra-individual entities, such as cultures and social structure rather than individuals themselves. Social theory can be defined as scientific methods of thinking about social life (Harrington, 2005). In other words, it evaluates how societies change and develop by using methods of explaining social behaviour, power, social structure, religion, gender and other aspects of social life.

Having discussed the theoretical background regarding the investigation of factors affecting the adoption EPS and given a wide range of theories that may be used for explaining further interpretation of data, via the use one or more appropriate theory to strengthen the level of academic research and theory application, it is subsequently appropriate to highlight the theory to be used for the purpose of the current research.

### **9.10.3 Diffusion of innovations theory (DOI) and its justification for selection for further theoretical explanation**

The events that exceed the level of early knowledge with regard to new services, new systems, products, or innovations in order to obtain/achieve a positive or negative attitude, accordingly leads people to decide whether to adopt or reject such new systems/services (Rogers, 1983). In actual fact, diffusion and adoption are two strongly linked procedures (Norazah, 2006). Thus, in the basic theoretical constructs on dissemination and adoption, researchers often concentrate on customer perceptions, acceptance, predicted behaviour, and finally the adoption of innovation.

Usually, the spread of Rogers's innovation is one of the important theoretical models applied in studies of behaviour prediction in divergent areas of social sciences. Anuar *et al.*, (2012A) argued that the Innovation Diffusion model provides the ability of scientists to investigate new ways of innovating or producing, or the acceptance of new services/systems between different groups of individuals, while Rogers has identified, in the 5th edition of his book, more than 5,200 studies that link to the adoption of new innovations, products, and systems (Hernandez *et al.*, 2009). The adoption is the process by which an innovation, a new service, a new system, or a new product is accepted is through the level of people's awareness (Rogers, 2003).

As is explained above, many theories are used in IS research. The researcher is interested only in theories about technology adoption. Therefore, the commonly used theories are the technology acceptance model (TAM) (Davis 1986, Davis 1989, Davis *et al.*, 1989), the theory of planned behaviour (TPB) (Ajzen 1985, Ajzen 1991), the unified theory of acceptance and the use of technology (UTAUT) (Venkatesh *et al.*, 2003), DOI (Rogers 1995), and the TOE framework (Tornatzky and Fleischer 1990). DOI is used in

this research to explain more findings, because it is a theory of how, why, and at what rate new idea, new services, new systems and new technologies are spread and accepted through society, operating at both individual and organisational levels. Rogers, (1995) stressed that innovations and new services can be seen through the DOI theory as being linked via certain channels over time and within specific social systems.

Rogers (2005) affirmed that central to the DOI theory is the process of individuals' experience. This involves five stages of accepting a new innovation: knowledge, persuasion, decision, implementation, and confirmation, as shown in Figure 9-1. If the innovation is adopted/accepted, it spreads via a variety of communication channels. During communication, the idea is rarely assessed from a scientific standpoint; rather, subjective awareness/perceptions of the innovation affect diffusion. The process will take place over time. Finally, social systems determine diffusion, types of innovation decisions, norms on diffusion, roles of opinion leaders, and innovation consequences.

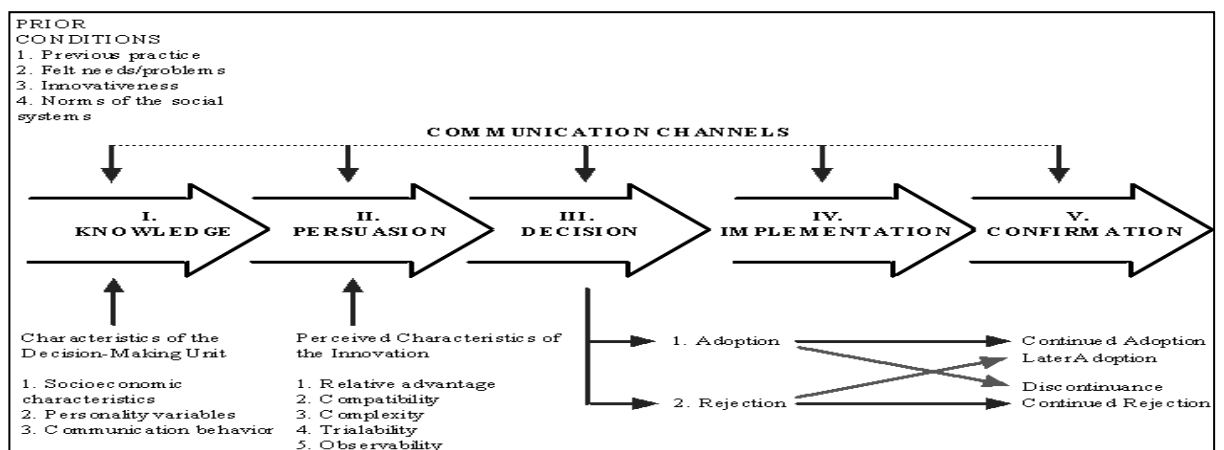


Figure 9-1 The 5 Stages in the Innovation-Decision Process

(Source: Rogers, 2003)

Individuals usually do have different levels of willingness to adopt/accept new systems, innovations and new services, and thus it is normally seen that a segment of society will adopt an innovation over time (Rogers, 1995, 2003). To add further theoretical explanation, Rogers' diffusion of innovations theory,(1995, 2003), has been extensively established as a powerful tool to explain the adoption of a variety of financial techniques and mobile technologies, including electronic payments (Szmigin & Bourne, 1999), mobile commerce (Teo & Pok, 2003), and mobile banking (M. S. Y. Lee *et al.*, 2003). In particular, the relative advantages, complexity, and compatibility constructs have provided the most consistent interpretation of the decision to adopt the technology (Tornatzky & Klein, 1982) and are therefore considered as valid predictors for the adoption of E-payment adoption as well. Nevertheless, the research has suggested that only the relative advantages, compatibility, and complexity are consistently related to innovation adoption (Rogers, 2003). Relative advantage is similar to the benefit seen, while complexity is similar to the perceived ease of use. Compatibility is the degree to which the innovation is seen to be consistent with the values of current and potential users of previous methods, and their needs. High compatibility will lead to successful adoption (diffusion and payment).

The Diffusion of Innovation Theory offers a framework for studying a phenomenon in its wider context. This research aims to explore and investigate the factors that influence the adoption of the E-payment system, the interrelationship between these factors and their impacts on each other, as well as the influences potentially leading to the adaptation of EPS in Libya by applying Roger's framework to explain them. This will be considered below. This is because DOI is an inclusive theory, comprising large

numbers of theories, with each one focusing on a different component to the innovation process.

According to Rogers (2003), adoption is a decision to make “full use of an innovation as the best course of action available” and rejection is a decision “not to adopt an innovation” (p. 177). Rogers defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system” (p.5). As articulated in this definition, innovation, communication channels, time, and social systems are the four components of the diffusion of innovations.

Having discussed in detailed the theoretical aspects in relation to factors affecting the E-payment systems, and justified the proposed use of the DOI theory, the following sub-sections describe these four elements: innovation, communication channels, time and social systems in more detail.

#### **9.10.4 Innovation**

Rogers offered the following description of an innovation: “An innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption.” (Rogers, 2003, p. 12). Rogers (1995) stated that an innovation may have been presented as a new idea, which leads individuals to perceive it as such. The innovation features of an adoption are more related to the knowledge, persuasion, and decision of the innovation-decision process (Rogers 1995). Uncertainty is a significant obstacle to the adoption of innovations. Consequences of innovation have created a state of uncertainty, “Consequences are the changes that occur in an individual or a social system as a result of the adoption or rejection of an innovation” (Rogers, 2003, p. 436). To reduce uncertainty in the adoption of innovation, individuals should be aware of all



its consequences in regard to advantages and disadvantages. Furthermore, Rogers declared that the consequences can be classified as functional or dysfunctional, direct versus indirect (immediate result or a result of an immediate result), and the expected and intended versus the unexpected. Rogers (1995) argued that there are four most important theories that deal with the diffusion of innovations. These are the innovation-decision process theory, the individual innovativeness theory, the rate of adoption theory, and the theory of perceived attributes.

The following sub-sections explain these four theories that deal with diffusion of innovations, followed by the justification of the selected theory for the purpose of this research, as explained in section 1.4.4.

#### **9.10.4.1 The Innovation-Decision Process Theory**

The theory of the innovation process is the basis for the decision on time and it consists of five distinct phases. Firstly, the phase of knowledge, in which the potential adopters must be the first to know the innovation. Secondly, the adopters must be convinced of the benefits of innovation. Thirdly, the adopters must decide to adopt the innovation. Fourthly, once the adopters adopt the innovation, they have to implement it. Fifthly, they must be assured that their decision is suitable. Diffusion depends upon these phases being attained (Rogers, 1995).

#### **9.10.4.2 Individual Innovativeness Theory**

Rogers gave the motivation for a number of studies in terms of innovation and individual creativity (Yi and Park, 2010; Kilicer and Odabasi, 2010; Yuan and Woodman, 2010; Brandon, 2008; Bailey and Nolan, 2008; Van De Vliert and West, 2004). Individual innovativeness is defined as improving, adopting/implementing an

innovation (Yuan and Woodman, 2010). Rogers (2003) declares that individual innovativeness theory explains why individuals adopt a new technology sooner than others, and why the new information within the social system is processed by adopters. Rogers stated that the Individual innovativeness theory is based on five categories; the innovators, the early adopters, the early majority, the late majority of adopters, and finally laggards, as is explained in Figure 9.2. There are a number of contextual factors, and some impressive results on the resolutions adopted towards adapting to innovation. There are likely to be some perceptions about the new technology that have been met in individuals in certain social environments. These perceptions are very important in terms of innovation. It is considered that individuals have different degrees of adaptation to innovation. In general, it is expected to be an almost normal distribution (Jackson, Yi and Park, 2010).

#### **9.10.4.3 Rate of adoption theory**

The rate of adoption is the relative speed of innovation that has been adopted by members of the social system. It is usually measured as some individuals who adopt new idea in a certain period of time, such as a year, a month, etc. As the number of people using the technology increases, the public becomes more aware of it and thus the rate of adoption increases until the adoption of technology is in common use, and the market will be in saturation status. At this point, the number of adoptions goes down, as new categories of consumers are less and less available.

#### **9.10.4.4 Theory of perceived attributes**

The researcher selected the theory of perceived attributes for the purpose of giving more explanation because this theory is based on the idea that individuals will adopt an innovation/new system if they perceive that it will add value, is easy to use and well-

suiting to their existing infrastructures (Bradford, 2001). It is recommended that relative advantage, compatibility, and ease of use are most closely related to adoption decision (Lemuria and Belanger, 2005). In addition, the use of an innovation is enhanced insofar as consumers perceive it as useful. Perceived usefulness is a vital component because it determines whether the perceived ease of use will lead to increased use of the product/new system and the level of market diffusion (Kent *et al.*, 2004). In addition to the above, Almobarraz, Abdullah, (2007) stated that the characteristics of innovation, as perceived by consumers, predicted innovation adoption. The Diffusion of Innovation theory explains adoption according to the perceived attributes of innovation, and the social system in which the innovation/new system is diffused, communication channels, and the length of time that the innovation has been around (Rogers, 2003). According to DOI, there are five innovation attributes that contribute to its allure, which are: perceived relative advantage, perceived complexity, perceived compatibility, trialability and observability.

#### **9.10.4.4.1 Relative advantage**

Rogers (2003) defined relative advantage as “the degree to which an innovation is perceived as being better than the idea it supersedes” (p. 229). The degree of perceived the relative advantage of adoption of EPS in the Libyan context among consumers is comprised of the first attribute of the element of diffusion process.

The researcher went back to the current research findings and discovered that the Libyan people are either consumers or organisational concerns about the availability of EPS. This is due to the lack of availability of E-means, in particular EPS, in Libya and especially Libyan telecommunication companies. In addition, this reduces Libyan people’s chances of increasing their dealing experience with Internet services. So they

will be less interested in the adoption of EPS as a method for purchasing products/goods via the Internet. The current research found, and literature affirms this, in regard to the availability of EPS. Transactions via the Internet could assist telecommunication companies to increase their production by ensuring timely availability of components from suppliers, and to create more transparent prices or the ability to find out the actual prices in the market (Laudon & Traver, 2002). The availability of the service, and the appropriate functioning of the companies will depend on the availability and successful operation of the payment infrastructure, (Medvinsky and Neuman, 1993, 1995).

In addition, the findings of the current research support the inclusion of perceived benefits which significantly improve the predication about the telecommunication companies' intention to adopt such a system in future. The research conducted in 2009 by Lee (2009) and Zhe *et al.*, (2006) confirmed that perceived benefits extensively affects the adoption of Internet transactions.

The lack of communication between consumers and telecommunications staff is due to the lack of convergent interests between them. For example, to know consumers' needs, it is necessary to avoid poor quality communication. The existence of this kind of poor communication is attributed to staff being unaware of the importance of communication a significant issue that leads to consumer satisfaction and willingness to ask for more Internet applications, such as the availability of E-payment services within telecommunications web sites. This defective communication has influenced staff skills, which are an essential condition of successful online payment services.

The better the perceived relative advantages of an innovation, the greater the speed of adoption in terms of flexibility and ease of use should be. It should be considered as a business need to make EPS easier, more accurate and faster, compared to traditional

cash payment. Government responsibilities towards the acceptance of new technologies, such as EPS (Seema *et al.*, 2012; Sumanjeet, 2009) also need to be considered. As mentioned by one of the decision makers in one of the mobile phone companies that the government supports, there must be a certainty regarding new banking systems and civil state systems in which every citizen would obtain national identity such as a national insurance number. This national number is the significant key to keeping track of all transactions and government services. Furthermore, the such a system could assist the government in meeting the requirements needed to attain or adopt EPS in Libya. In actual fact, that government support has been found in literature on the positive effects of the intention to increase the consumption of e-business systems in developing countries, such as Nigeria (Teo *et al.*, 1997; Chau & Jim, 2002).

The researcher revised the respondents' responses and found another advantage of the adoption of EPS in Libya. This is in line with existing literature which affirmed that individuals should assess the medium/website before they intend to use it (Ullah *et al.*, 2013; Abukhzam, 2010, p.2). Moreover, Kim *et al.*, (2003) also affirmed that the reliability of websites and response times are related to performing transaction.

It is therefore important to go back to the theory that emerged from the Libyan context: EPS will succeed, particularly when undertaken with a concern for the factors that influence adoption of EPS. These factors affect the relative advantage that Libyan telecommunications, government, banks and consumers expect from EPS. Its diffusion will increase their activities. This can be seen from the responses of some of the respondents, who need to adopt EPS in order to show their willingness to use it. This is in line with the answers from most of the respondents, which confirmed that the adoption of EPS needs to consider infrastructure and to establish regulation of Internet

transactions before adopting such a system. This is in line with the theory of rate of adoption, which affirms that the relative speed of innovation has led to adoption by great numbers within a relatively short period of time. Furthermore, as Rogers stated in the individuals innovation theory, there are categories emerging in Libya who are potential adopters of EPS innovation. The number of social systems in each category have different numbers of members, depending on their characteristics, for example, in Figure 9-2, the members' attitudes in each category are different to other categories.

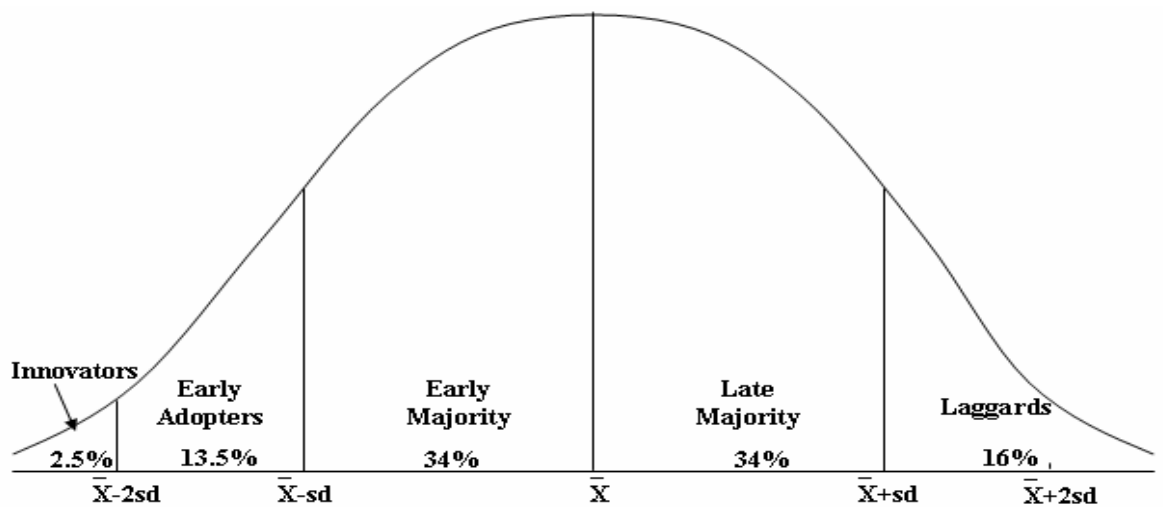


Figure 9-2 Adopter Categorization on the Basis of Innovativeness

(Source: Diffusion of Innovations, fifth edition by Everett M. Rogers, 2003)

The innovator needs to consider the characteristics of each category and accomplish their needs first. The current research findings confirm that the majority of Libyan people are still concerned about adoption of EPS. It means that Libyan people still lag behind those who adopt EPS.

#### **9.10.4.4.2 Compatibility**

Rogers (2003) stated that “compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (p. 15).

The compatibility of innovations to members of a social system is absolutely related to its rate of adoption of such a system. Libyan consumers' attitudes are affected by the level old consumers' beliefs. Most of the current research respondents affirm that E-payment services are not compatible with the current economic and technical infrastructure and customers' needs.

The researcher revised the current research findings and found that both organisational and consumers recognised the degree of compatibility to which an innovation is perceived as consistent with consumers' experience and the needs of potential adopters.

The interesting thing for Internet users is that their needs are met, and they need to control their accounts and expenses through the use of online banking services. By reviewing the withdrawal of control factor that emerged from the answers of respondents, it can be seen that their responses are consistent with pervious literature. Consumers can control their expenses by withdrawing money through electronic access to the source web site and by providing proof of identity, such as a digital certificate issued by a certification authority, or a combination of the credit card number and bank account number.(Shittu, 2010, p.54).

In this case, the perceived compatibility of new innovations which Libyan people can experience may lead to the adoption of EPS. The withdrawal of control is a factor that may influence the adoption of EPS in the Libyan context. The research findings are

consistent with compatibility to adopt new innovations, when respondents or consumers may prefer to manage their banking in different ways and with different types of control over it.

There is, however, a lack of communication between consumers and organisational staff. Social influence is another important factor that illustrates the challenges to individual or government adoption of EPS in the Libyan context. Defective communications have affected the skills of organisational staff which these are essential to adopting EPS, as was confirmed by many respondents of the current research. The research findings in terms of ease of communication between consumers and organisational staff are consistent with the results of previous studies, such as the study which was conducted by Harris (2011), which proved that the level of adoption of EPS is increasing by providing the easiest way to communicate between consumers and those organisations which adopt EPS. In addition, Truman *et al.*, (2003), Schwartz, (2001) affirmed that in order to make the E-payment service easier, faster, and more accurate, the online payment system must be flexible and easy to use. On this issue (ease of communication), the degree to which an innovation, such as EPS, is perceived as being consistent with the past experience and needs of possible adopters, the sooner it will be adopted.

Awareness represents the level of knowledge of the innovation that exists and which can motivate consumers or organisations. This is compatible with the chance of adoption of innovation, because individuals should have awareness prior to trial of this innovation. Thus, knowledge is essential for relatively complex innovations. In addition, the functioning principles of knowledge illustrate how and why an innovation works (Spotts, 1999; Rogers, 2003. p.21). In fact, to increase new knowledge,



awareness, innovation, education and practice it is necessary to provide not only the means to increase experience, but also that consumers understand why this is desirable.(Seemann, 2003).

In the context of assisting Islamic banking to implement payment services compatible with Islamic finance principles, the researcher found that some respondents suggested the implementation of Sharia banking would have a great positive impact on the development of the economic situation in Libya in relation to the adoption of EPS (Hamed and Berger, 2012). For example, the Libyan people prefer to use debit cards rather than credit cards because the debit card is more compatible with Islamic finance rules related to interest in general and particularly those to be paid on transaction.

The ease of use and convenience are the degrees to which an innovation appears difficult to use or understand. The researcher, when he revised respondent answers, found that new systems and new ideas that are easy to understand are more rapidly adopted than innovations that require the adopter to develop his skills and understanding of the methods.

#### **9.10.4.4.3 Complexity**

Rogers (1995, p250) claimed that innovations that are apparent as easy to use and understand are more easily adopted. Rogers (2003) added another definition of complexity as: “The degree to which an innovation is perceived as relatively difficult to understand and use.” (p. 15). Therefore, in the current research, it was found that complexity, as the degree to which the adopter in the Libyan context perceive this innovation (or EPS), in the easiest way to understand and use. However, the findings of the current research revealed that any payment system with complex characteristics

would not earn acceptability. Lack of reliability of EPS attributed to the unavailability of technical infrastructure such as networks and security of websites, which means that individuals tend not to use those kinds of websites. This then makes telecommunications websites unsafe for adopting EPS. For example, the researcher found, through the current research with respect to lack of trust, that reliability of E-payments influences decisions to adopt EPS in the Libyan context. Furthermore, when telecommunications build an infrastructure to adopt EPS, they need knowledge, awareness and experience to motivate the Libyan people to adopt EPS. This guarantees the influence of sufficient knowledge and awareness amongst individuals that consumers and organisations feel confident about adopting and using E-payments. In addition, Pons (2004) affirmed that the skills, the understanding of Internet applications, and awareness that is available amongst individuals comprise the main factors for diffusion of any new innovation. Thus, the individuals who are using the Internet have more experience to conduct their transaction by adopting EPS efficiently compared to those individuals who do not have enough experience to use the Internet (Alomari *et al.*, 2012). The researcher found that the education level in Libya is influenced by age .In other words, young people are motivated to adopt EPS due to their ability to understand and accept new technologies rather than elderly people, who don't have enough experience and knowledge about how to use the Internet, in particular EPS.

A lack of post coding is another factor emerging from the current research in Libya that affects the intention of stakeholders to adopt EPS as technical support. In other words, the lack of post coding services in Libya makes the use and adoption of EPS difficult. To buy products from telecommunication websites online is difficult, because there is no link between telecommunication companies, banks, and the exact address of the

Libyan citizen. Therefore, the lack of post coding in Libya will make the process of adopting EPS very complex and difficult until the government and telecommunication companies decide to resolve this problem.

#### **9.10.4.4.4 Observability**

Rogers (2003) defined observability *as* “the degree to which the results of an innovation are visible to others” (p. 16). With regard to the current research, the researcher sees observability as the degree to which the outcome of the adoption of EPS are visible for Libyan consumers. The respondents of the current research affirmed that the first procedures that should follow adoption of EPS would enable individuals to see the results of EPS. This would make them all the more likely to adopt it. During adoption of EPS, telecommunications companies should show how much better, faster and more efficient the new technology is by demonstrating its use in comparison to the traditional method. Consumers should be asked to believe what they see and offered a trial, preferably with a secure transaction.

The availability of EPS services is seen by most respondents as the important key outcome and motivational factor in the adoption and diffusion of EPS. One of the issues raised through the current research is the nonexistence of legislation, polices and electronic regulations which can be seen as a challenge for EPS adoption in the Libyan context and in particular the telecommunications companies .It is clear that the existence of regulation and E-laws in Libya will make the Libyan people feel confident to adopt such systems.

Experience and skills are another example from the current research which play an important role in the adoption of EPS. With regard to the staff or consumers who have sufficient experience of the use of EPS outside of Libya, they affirmed that the E-

payment process is easier to understand and quite simple, which they are happy to share with others. Another examples shows, from most of the respondents' responses, that the attitude of other people has influenced their desire to adopt payment via the Internet. This means that individuals estimate the amount of money they can put aside for their E-payment in order to keep their standard of living. This factor (standard of living) is obvious to the researcher and respondents said it had a great impact on their adoption of EPS.

#### **9.10.4.4.5 Trialability**

Trialability has been defined by Rogers, who defined it as: "The degree to which an innovation may be experimented with on a limited basis." (Rogers and Showmaker, 1971, p.155, 2003).

Lee (2007) argued that some studies should have been empirically tested to understand the relationship between trialability and intention to use a new system. However, with regard to the current research which has been conducted to investigate factors that have an effect on the adoption of EPS in the Libyan context, theoretically, innovation "that can be tried on an instalment plan" ( Rogers and Showmaker, 1971,p.155), will be accepted and adopted faster than less trialable innovations. It is clear from the current research that Libyan consumers are expected to increase their skills, awareness, and experience in dealing with online transactions. This is affirmed through consumers who have experience with E-payments in their online transactions. It means that the trialability or practice of the use EPS provides consumers with the ability to evaluate the benefits of the new system. Consequently, if consumers are relieved of certain fears regarding the inability to use or adopt new system, resistance can be reduced.

Another example shows that many respondents from the current research see the cooperation between stakeholders as another concern. They want to find out how it can influence EPS adoption, because the lack of cooperation between stakeholders (banks, telecommunications, government, and consumers) has a clear effect on decisions made regarding the adoption of EPS and that is apparent through the answers of respondents. This is consistent with literature related to EPS which found that cooperation amongst stakeholders has a great impact upon adoption of EPS (Mann, 2003). The successful adoption of EPS requires universal acceptance through investigation of barriers from the economic point of view (Baddeley, 2004). This only can be attained through cooperation with existing institutions within Libyan telecommunications companies, such as corporations, governments and banks.

#### **9.10.5 Summary**

To sum up, Rogers (2003) claimed that innovation provides more relative advantages, compatibility, complexity, observability, and trialability and will be accepted and adopted faster than other innovations. Rogers does concede that: “getting a new idea adopted, even when it has obvious advantages, is difficult.” (p. 1). So the availability of all these variables or components of innovations speeds up innovation diffusion processes. The current research findings show that all the emerged factors influence Libyan consumers and that there is a likelihood of organisations adopting EPS into their payment systems. This has emerged through discussing the theory that was revealed by the current research and this explanation is conducted based on the diffusion of innovation theory.