Institutional Influences on the Adoption and Non-Adoption of Information Systems Innovations: Case Evidence from the Taxco Silver Handicraft Sector

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Table of Contents

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List of Tables

List of Figures

List of Images

Abstract

The University of Manchester

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Doctor of Business Administration

Institutional Influences on the Adoption and Non-Adoption of Information Systems
Innovation: Case Evidence from the Taxco Silver Handicraft Sector

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This thesis answers the research question: What role do institutions play in the adoption and non-adoption of Information Systems (IS) innovations?

In exploring this question, institutional theory is used to develop an interpretation of behaviour by Micro and Small Enterprises (MSE) related to the adoption and non-adoption of IS innovation within the Taxco Silver Handicraft Sector. The research categorised the emergent data into established Mexican institutions, which allowed for the analysis of institutionalised responses to the introduction of new social structures. There is a need to understand behaviour related to adopting IS innovations through the beliefs of local agents. Interpretivist literature was used to explore how the adoption of IS innovations is influenced by the local context.

This research developed a theoretical framework that combines Scott's (2008) three-pillars of institutions (regulative, normative and cultural-cognitive); with the Seo and Creed (2002) framework for exploring the institutionalisation of IS innovations. This theoretical framework allowed for the exploration of the contestation between institutional entrepreneurs (agents advocating the adoption of new social structures) and those resilient to institutional change.

This research makes a number of key contributions to the field of study. The development of a new theoretical framework is designed to assist future researchers in exploring the institutionalisation process. The methodological contribution emerges from the demonstrating the value of ethnographic case studies within handicraft sectors in developing economies. The practical contribution of this research lies in increasing our understanding of how and why new social structures are developed.

Lay Abstract

The University of Manchester

John Alver Dobson

Doctor of Business Administration

Institutional Influences on the Adoption and Non-Adoption of Information Systems

Innovation: Case Evidence from the Taxco Silver Handicraft Sector

2014

This research explores the adoption and non-adoption of Information Systems (IS) innovations (such as cell phones, the Internet, social media and websites) by micro and small enterprises (MSE) within the Taxco Silver Handicraft Sector in Mexico. With both international aid agencies and national government advocating the adoption of IS innovation as key to improving incomes of poor people. This research poses the research question: What role do institutions play in the adoption and non-adoption of IS innovations?

The data was categorised into existing Mexican institutions related to cultural-cognition and norms. This approach enabled the analysis to consider the challenges underpinning the successful adoption of IS innovations. The research found that the individuals under scrutiny had adopted IS innovations for their personal use, but not for business use. The findings indicate that an informant's world view is often at odds with many of the assumptions surrounding how IS innovations are diffused. Existing institutions have created behavioural norms that are designed to be inefficient. However, simply showing how IS innovations can improve efficiency is likely to fail, since doing so ignores the cultural-cognitive rationale for the established inefficiency. This research develops a new theoretical approach for exploring the institutional influences on sectoral behaviour. This theoretical approach can be used to further investigate the concept of a 'local culture'; and explore the friction that can arise when new social structures are introduced. This research further demonstrates the methodological value of conducting ethnographic research in order to obtain a richer interpretation of the context. Additionally, this research offers practical methods to increase the success rate of the adoption of IS innovations.

Declarations and Copyright Statement

This thesis is based on ideas and previous research, detailed below, by John Dobson on the topic of the adoption of IS innovations by MSE in the Taxco Silver Handicraft Sector.

Conference Papers:

Dobson, J., Duncombe, R., & Nicholson, B. (2010) Utilising the Internet to improve peasant artisan incomes: Evidence from Mexico. *World Computer Congress: Brisbane, Australia. September 20-23.*

Dobson J., Duncombe, R. & Nicholson, B. (2011) The active hand: Applying Porter's diamonds of determinants to handicraft production in less developed countries. *International Federation of Information Systems (IFIP) Working Group 9.4; Kathmandu, Nepal. May 22-25.*

Dobson, J., Nicholson, B. & Duncombe, R. (2013) Micro and small enterprise resistance to ICT adoption: A case of the silver market in Taxco, Mexico. *International Federation of Information Systems (IFIP) Working Group 9.4; Ocho Rios, Jamaica. May 19-22.*

Dobson, J., Nicholson, B., & Duncombe, R. (2014) The impact of conflicting institutional logics on the adoption and non-adoption of ICT tools within handicraft production: A case from Mexico. *Conference of the International Consortium of Innovation and Entrepreneurship Research (ICIER); Rio de Janeiro, Brazil. November 21-22.*

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Acknowledgements

Thank you to all the informants that allowed me to meet with them and develop the case study on the Taxco Silver Handicraft Sector. The complete list of informants can be found in Table 4.2 of Chapter 4.

This research was iterative process, and as a result I would like to thank all the anonymous reviewers of conference papers and the academics that provided feedback during my presentations. A special thank you must go to my two supervisors, Dr Brian Nicholson and Dr Richard Duncombe, for their feedback and support.

Dedication

This thesis is dedicated to my children (Edmund, John Paul, Kate, Bruce, and Ben). I also wish to thank my friends and family for their emotional support, especially my wife Lisa, for she has supported, accompanied, and encouraged me throughout this journey. We have both worked with handicraft producers for over 25 years, and I depended wholeheartedly on her for feedback and insights into the data; and more importantly, for her unstinting dedication. This research was motivated by a hope that it will help me and other development practitioners gain a better understanding of the complex issues related to improving the incomes of the very poor artisans.

Lo Hecho!

About the Author

John Dobson was born and raised in Mexico. His family migrated to Mexico in the 1800s, as part of the diaspora of British engineers moving to the newly independent republics of Latin America to help in industrial development. In the 1970s Mexico experienced significant social, political and economic upheaval; causing his family to migrate to Canada. As a teenager he travelled back to Mexico, in order to reconnect with its culture. This visit provided an opportunity to sell Mexican handicrafts in Canada, and the launch of an import/export business that specialised in handicraft production from Mexico. He began his entrepreneurial journey as an undergraduate student in 1986, which coincidently was the same year that Mexico joined General Agreement on Trade and Tariffs, the precursor to the World Trade Organization.

Over time, this business has grown into a multi-million dollar company. During this time, the author observed a number of disconcerting trends. At the macro-economic level, he witnessed the uneven development occurring in Mexico, where in the face of rapid socio-economic development, the indigenous populations were falling behind. At the micro-economic level his business experienced recurring challenges related to the dilemma of how to increase the quantity of production while maintaining quality and cost.

Such professional experience revealed the mismatch between western assumptions related to how business functions, and the belief systems operational within indigenous communities. A search for theoretical explanations led him to enrol in the Masters programme in development management at the London School of Economics and to subsequently pursue his DBA at the University of Manchester. Currently, he is an assistant professor of international entrepreneurship at Seton Hill University, whilst continuing to work with artisans in Mexico.

Chapter 1: Introduction

1.1. Introduction

The Royal Society's motto *'Nullius in verba'* translates as 'take no man's word for it and come find out for yourself' (Royal Society, 2014); providing an explicit mandate for researchers to verify all statements through experimentation. This thesis records the examination of institutional influences on the adoption and non-adoption of information systems (IS) innovations. This academic journey began with an adherence to positivist assumptions regarding the process of adoption of IS innovations, however, this research has fundamentally challenged the rational assumptions about exactly why and how IS innovations are adopted. A search for alternative explanations led to a realisation that local context plays a significant role in the diffusion of innovations. By allowing the data to speak, listening to informants, learning from their behaviour, and from personal experience enabled the development of an interpretation of sectoral beliefs related to the adoption and non-adoption of IS innovations. Consequently, this thesis explores the intersection of historically embedded institutions and the introduction of IS innovations, with a principal focus on the contestation between proponents of adoption against those resilient to change. What follows is an ethnographic case study conducted on the Taxco Silver Handicraft Sector, relying on both the author's 25 years of professional experience working in the sector, and field research conducted in January 2010 and June/July 2012.

1.2. Background to the Research

Visitors to developing economies (DEs) often encounter locals selling handicrafts, which are locally made or brought in from various regions of the country, in order to satisfy tourist demand for 'authentic' goods. Purchasing such items is considered integral to both the visitor's tourist experience and constitutes an important income strategy for peasant communities. This research focuses on how this sector is utilising IS innovations to improve its sectoral performance.

This research is intended to increase understanding of how institutions influence the adoption and non-adoption of IS innovations within handicraft sectors at the base of the pyramid (BOP). IS innovations and the emergence of corresponding information and communication technologies (ICT) tools, such as the cell phone and the Internet have been proposed by international agencies as providing significant opportunities to improve incomes for DE (World Bank, 2012); with some agencies identifying the potential benefit of ICT tools to help extricate from poverty marginalised peoples within the handicraft sector (UNCTAD, 2003). The importance of this issue cannot be understated, with some 4-5 billion people living on less then $2 a day (Prahalad, 2004). Throughout the world, most artisans live on the fringes of society, experiencing a marginal and precarious existence (Scarse, 2003). Handicraft production has historically been identified as providing an integral survival pattern to peasant communities (Medina & de los Santos, 2008), with handicraft long identified as key to the economic development of poor people in developing countries. This fundamental area of trade and development is thus crucial, and a number of organisations, including UNESCO through their 'Seal of Excellence' (UNESCO, 2006), and the Fair Trade Movement are attempting to improve the artisan incomes that derive from the expansion of the global market for handicrafts. The Millennium Development Goals (MDG) posit that ICT tools can be used to help bridge the development divide (United Nations, 2014), with Goal 8(f) focusing on the use of ICT tools to improve market opportunities for poor people, aiming to help Information System Innovations for Development (ISI4D) practitioners and the artisans themselves, adopt IS innovations in ways that will help them to improve their perilous economic circumstances.

The adoption of ICT tools is driving economic growth in many parts of the world. ICT tools have been widely credited with improving both organisational performance (Jorgenson & Vu, 2005), and participation in international trade by developing countries (Wareham, Zheng, & Detmar, 2005). The role of ICT in facilitating development has been well established in both research and public discourse (Heeks 2008, Chew, Ilavarason & Levy 2012), however, supporting evidence of successful adoption from developing countries remains limited (Avgerou 2009, Donner, 2009). Prior research has posited that the low level of institutional quality may explain differing ICT adoption rates and corresponding lower levels of economic

development (e.g. Piatkowski, 2006). Such differences in institutional quality impacts upon ISI4D initiatives (Avgerou & Walsham, 2000), and may also help explain differing adoption rates (Billon *et al*., 2010); and therefore the economic benefits of adopting ICT tools will not be fully realised until there are improvements in institutional quality within these countries, leading to a growing acknowledgement of the role that institutions play in influencing adoption (Piatkowski, 2006).

This research was motivated by a desire to better understand the adoption and non-adoption of IS Innovations in the handicraft sector, which is typically comprised of peasant owned and operated MSE. The distinctiveness of this research originates from its use of Scott's (2008) three pillars and Seo and Creed's (2002) institutionalisation process to explore IS adoption and non-adoption behaviour within the handicraft sector in developing economies (DE). The appropriation of this theoretical framework provides a richness of data not available when researchers rely solely on one framework (Walsham, 2013).

1.3.   Definitions

The main concepts that will be used throughout this thesis are described and summarised below.

Indigenous people:	The definition of exactly who is indigenous is a contentious issue in Latin America, where countries tend to allow for self-identification of indigenous status on censuses and surveys. Researchers have noted that such self-identification appears to be partially related to the continued use of the mother tongue, the wearing of traditional clothing and living on traditional lands (Hall & Layton, 2006).
Information and Communication Technologies (ICT):	The term ICT covers a diversity of both goods (computers, cell phones, digital cameras, software and peripherals) and

services.

Information System (IS) innovations:	Defined as the process of technology and knowledge transfer and adaptation to local conditions. There are two aspects to IS innovation that this research will consider: the adoption and non-adoption of ICT tools including cell phones, the Internet, and functional platforms (websites); and the knowledge transfer, the extent to which such tools are adopted (or not adopted) into business processes in order to improve organisational performance (Avgerou, 2008).
Micro and Small Enterprises (MSE):	The small enterprises that comprise the Taxco Silver Handicraft Sector. Typically, these are home-based enterprises that employ immediate family members in various aspects of jewellery production.
Organisational field:	Refers to the organisations, that when combined, constitute a recognised area of social life. This includes suppliers, consumers and regulatory agencies, as well as other organisations that produce similar products or services (DiMaggio & Powell, 1983).
Peasant:	Peasants tend to be poor people based in rural areas that engage in subsistence farming, or who produce cash crops for their survival. They often engage in self-employment in order to earn additional income. In Mexico, peasants are not only rural dwellers, but may also include village dwellers (Edelman, 2013).
Sector:	Defined as "a concentration of enterprises"

that produce similar products, with the characteristic that they are clustered around a small geographical area (Schmitz, 1999, p. 3).

1.4.   Research Question

According to Barrett, Heracleous and Walsham (2013, p. 201) a central question in the ICT for development discipline is "how or why do some IT related innovations diffuse widely, while others do not?" In response to this question, this thesis will explore the adoption and non-adoption of IS innovations within the Taxco Silver Handicraft Sector in Mexico.

The research question is: What role do institutions play in the adoption and non-adoption of IS innovations? The objective of this research is to interpret MSE behaviour as it relates to the adoption of IS innovations, considering how institutional factors influence behaviour. As such, it responds to the call by Avgerou for researchers to scrutinise the institutions into which IS innovations are being introduced (Avgerou, 2003).

1.5.   Thesis Structure

To answer the research question outlined above, this thesis is organised into six chapters. Chapter 2 details the research topic, provides background information, and identifies the research question.

 Chapter 2 presents the literature review and the theoretical framework adopted, and some key debates in the adoption and non-adoption of IS innovations is discussed. This chapter also develops its own theoretical framework through which the research will analyse the findings. This framework combines Scott's (2008) three-pillars of institutions with the Seo and Creed (2002) framework for institutionalisation of IS innovations, focusing on the interaction between contradiction and praxis to explore the contestation between both change agents and conformists. This analysis will draw

upon Scott's three-pillars to explore how institutions influence the behaviour related to the adoption and non-adoption of IS innovations.

Chapter 3 outlines the research methodology. A review of ontological and epistemological perspectives is undertaken, including a discussion of positivism, critical realism and interpretivism. This section reviews four of the most common qualitative research approaches, namely action research, grounded theory, case study and ethnographic research, and the rationale for selecting an interpretive ethnographic case study approach is explained, along with the research design and methods adopted. Chapter 4 provides the case description, situating the research in a specific place and time, describing some of the national government policies regarding handicraft development. Further information about the development of the Taxco Silver Handicraft Sector is provided, including giving information of the structure of the market and its jewellery producing enterprises.

Chapter 5 presents the findings of the research, relying upon the theoretical framework introduced in Chapter 2 to explore the contestation between institutional entrepreneurs and agents resilient to change. Institutional theory is used to explore the emergent themes of the sources of resilience to the adoption of IS innovations.
Finally, Chapter 6 discusses the findings and proposes the key contributions of the research. Furthermore, the limitations of this research are presented and recommendations for further study are identified.

Chapter 2: Literature Review and Theoretical Frameworks

2.1.   Introduction

This chapter reviews the current discourse on the adoption and non-adoption of Information Systems (IS) innovations, as the analysis of these two areas will assist in developing an understanding of the historically embedded institutions into which IS innovations are introduced.

Innovations are considered central to building successful organisations, societies and nations in the modern world (Hage & Meeus, 2006). Contradictions often emerge within the organisational field in response to the introduction of new innovations, which are resolved through the contestation of embedded structures against new or imaginable structures (Cho, Mathiassen & Robey, 2007).

This chapter presents the two theoretical frameworks that will be combined in order to guide this research. Firstly, the Scott three pillars of institutions (2008) will provide a useful lens for examining the institutional forces that influence adoption and non-adoption behaviour. Secondly, the Seo and Creed (2002) research on the potential for conflict present within institutional change, which emerges as a result of institutional contradictions and is resolved through praxis, will also be considered.

This chapter is organised into four sections, beginning with the discussion of IS research on adoption and non-adoption. This will be followed by the analysis of new institutional theory; after which the section will identify gaps in current research. Finally, the theoretical framework adopted to guide this research will be outlined.

2.2.   Research on the Adoption and Non-Adoption of Information Systems

The literature review will examine the research on adoption and non-adoption of IS innovations, considering how such research has been applied to marginalised communities, specifically in Mexico, to further development. The approach espoused in this review is consistent with Tolbert and Zucker's (1996) belief that positive and interpretive approaches represent the two ends of the decision-making continuum. They argue that theoretical discourse is needed to decide when behaviour is more

likely to be 'rational' or instead bound by institutions. As such, the first section reviews both the positive and interpretive approaches used in adoption and non-adoption of IS innovations research for development. Section Two will explore the literature on IS adoption research, including analysis of four of the most widely used positivist frameworks: the diffusion of innovation, the perceived characteristics of innovations, the theory of reasoned action / planned behaviour; and the technology acceptance model. The key findings, strengths, weaknesses and how researchers have used these approaches in research focused on IS innovations for development (ISI4D) is outlined. The literature review will then consider the interpretive approaches used to explore the adoption and non-adoption of IS innovations, which will examine further Scott's three pillars of institutions typology, discussing how researchers have adopted regulative, normative, and cultural-cognitive institutional pillars to explore IS adoption. Within this section, the key findings, strengths, weaknesses, and interpretive approaches in ISI4D research are presented. The final section will introduce new institutional theory, which will be followed by a discussion identifying gaps in existing research.

2.2.1. Positivist Approaches

The most common approaches in adoption research rely on rationalist models (Williams *et al.*, 2009), based on the assumption that adoption follows a predictable pattern. In 2006, Jeyaraj *et al.* conducted a meta-analysis review of the predictors, linkages and biases in IT innovation adoption; reviewing 99 papers published from 1992 to 2003. According to their research, the four most widely used positivist approaches were the diffusion of innovation (Rogers, 1962), the perceived characteristics of innovation (Moore & Benbassat, 1991), the theory of reasoned action (TRA) and theory of planned behaviour (TPB) (Ajzen & Fishbein, 1977), and the Technology Acceptance Model (TAM) and its associated modifications (Davis, Bagozzi & Warshaw, 1989).

2.2.1.1. The Diffusion of Innovation Model

Rogers' (1962) seminal work established an understanding of how innovations are adopted and disperse within sectors, with a sector defined as the geographical, cultural or institutional proximity that drives innovation (Porter, 1990). Within each sector are enterprises producing similar products (Schmitz, 1999), along with

suppliers and customers (Porter, 1998). A key feature of the model is that well functioning sectors permit IS innovation in order to increase efficiency and allow export-oriented production. It is for this reason that sectors are seen as an important part of international development (Schmitz, 1999). Paradoxically, successful development often relies on local knowledge that distant rivals cannot match (Porter, 1998).

The Rogers model is premised on 'early innovators' developing new structures and publicising success to 'early adopters'. A key assumption of the diffusion of innovation is that entrepreneurs become the 'early innovators' and 'early adopters'. These entrepreneurs tend to come from industry-leading firms, and ones with the strong finances that allow for the pre-testing of new structures. These entrepreneurs spread the word of the benefits, and thus encourage others to adopt the IS innovation; creating a tipping point; and once the critical mass of adoption is achieved, the innovation is readily adopted throughout the sector (Rogers, 1962). Rogers calculated that an acceptance rate of about 16% is required for an innovation to be diffused throughout the entire sector. The model has been tested numerous times and is now widely accepted (Midgley & Dowling, 1993), becoming the foundation for how the adoption of an innovation is researched (Orr, 2003). A key feature of the adoption of innovation framework is the assertion that the process is internal to the sector. According to Rogers, decisions about adoption are influenced by three elements, each related to individual, organisational and sectoral characteristics; and how these three components interact with each other.

Research has tended to support the belief that adoption is a sequential process in which 'innovators' and 'early adopters' start the process (Midgley & Dowling, 1993). For the rest of the sector, decisions about adoption are delayed until the benefits are more clearly understood. Information about the benefits of adoption is spread in two key ways. Firstly, the 'early adopters' tell others in the sector about the benefits of adoption; and secondly, members of the sector observe the benefits gained by both 'early adopters' and 'innovators', and subsequently copy their behaviour in order to remain competitive (Rogers, 1962). This understanding of the diffusion process has allowed ICT initiatives to focus on the key features that facilitate adoption, such as benefits and competition.

When using the diffusion of innovation theory in ISI4D contexts, the same assumptions are maintained, namely that 'innovators' and 'early adopters' will emerge to 'champion' the innovation. A second assumption is that the sector will readily imitate this behaviour, further disseminating information about the benefits of new structures, leading to successful adoption.

2.2.1.2.   Perceived Characteristics of Innovation

Moore and Benbasat (1991) developed an instrument to measure the likelihood of IS adoption, based on the belief that the perception of usefulness is a key determinant of IS adoption and non-adoption behaviour, building on the Rogers (1962) model. This model emerged after researchers began to examine the role of perceived characteristics of innovation (Moore & Benbassat, 1991), discovering that the intrinsic attributes of ICT tools were not a good predictor of adoption, and that to be effective in predicting adoption, research instead needed to focus on how individuals perceive ICT tools.

This research revealed that initiatives often focus on relative advantage, meaning that the adoption of ICT tools is partially stimulated by the potential gain over other Micro and Small Enterprises (MSE); result demonstrability, meaning that simply demonstrating positive outcomes is sufficient to diffuse an innovation; and that this visibility motivates individuals to share the benefits of adoption with others. These findings are important in understanding how ICT tools are adopted within sectors. These three findings are interrelated, and are consistent with the rationalist, neo-liberal world view (Andrade & Urquhart, 2012), reinforcing the notion that in order to be successful, ICT adoption initiatives must visibly demonstrate positive results and/or identify the potential for an individual to gain a relative advantage.

2.2.1.3.   The Theory of Reasoned Action / Planned Behaviour

The Theory of Reasoned Action (TRA) / Theory of Planned Behaviour (TPB) were first outlined by Ajzen and Fishbein in 1977, and have since been widely used to predict IS adoption and non-adoption behaviour (Maddon, Ellen & Ajzen, 1992). Over the years, researchers have noted that the model functions well in identifying strategies for increasing the individual adoption of IS innovation (Sheppard, Hartwick

& Warshaw, 1988). The theory is based on the belief that individuals have the ability to act with free will (Maddon, Ellen & Ajzen, 1992), and hold individual attitudes, perceptions of control, and subjective norms forming intentions to ultimately affect their behaviour. It is further believed that individuals have the freedom to choose and that this freedom is not constrained (Maddon, Ellen & Ajzen, 1992). Such assertions are based on the concept of self-efficacy, in which the more the individual controls (or believes that they control) the required resources, the greater the effect on adoption behaviour. The model argues that individuals conduct a cost benefit analysis, determining that if they can maximise the benefits and minimise negative consequences, then the behaviour will occur (Maddon, Ellen & Ajzen, 1992).

2.2.1.4.   The Technology Acceptance Model

The Technology Acceptance Model (TAM) has been referred to as the most influential and commonly used theory in IS research (Lee, Kozar & Larsen, 2003). Much of the early research on IS adoption focused on user satisfaction and attitudes (Viswanath, Davis & Morris, 2007), highlighting utilitarian perspectives that outlined the benefits of adoption, with the primary goal of increasing organisational performance (Al-Natour & Benbasat, 2009). TAM can be conceptualised as a model for examining adoption, in which an individual's belief about a product is critical in predicting their subsequent behaviour, requiring researchers to focus on an individual's attitude towards an ICT tool. Two of the most important concepts within the TAM framework are perceived usefulness (PU) and perceived ease of use (PEOU) (Davis, Bagozzi & Warshaw, 1989). PU relies on examining user perceptions about how useful an innovation is in helping an individual to accomplish their work. The PEOU considers how easy a new innovation is to incorporate into the workflow process, with the user comparing the complexity of the new innovation with the process that is currently employed.

The TAM simplified research on IT adoption (Benbasat & Barki, 2007), leading researchers to identify the need to increase PU or PEOU as the solution to non-adoption. However, this innovation has also become the model's weakness, with an unintended consequence being that it has encouraged researchers to simply focus on increasing PU and PEOU when non-adoption is encountered (Lee, Kozar & Larsen, 2003). Bagozzi (2007) contends that it may have been unreasonable to expect such a

simplistic model to fully explain adoption decisions across all technologies, sectors and situations. The focus on PU and PEOU resulted in researchers seeking to identify populations more likely to adopt new technology, identifying characteristics that differentiated them from non-adopters (Moore & Benbassat, 1991). The need to identify the characteristics of likely adopters provides a potentially endless list, and therefore arguably makes the TAM conceptually suspect. The subsequent modifications to TAM have created many volumes of articles, which whilst initially indicating progress, in reality do little to increase understanding of the adoption process (Bagozzi, 2007). TAM research has also paid little attention to the role of antecedents, such as IT artefact design and evaluation (Lee, Kozar & Larsen, 2003), and provides little insight into why mechanisms are different in divergent settings.

2.2.1.5.   Critique of Positivist Approaches

Research adopting a positivist approach has been very successful in predicting adoption and non-adoption in developed countries, with researchers devising various models to assist their analysis.   While the outcomes of interventions in the developed world tend to be predictable (Andrade & Urquhart, 2012), in the developing world there is a high failure rate (Heeks, 2008), leading to the belief that there are differences 'in situ' that account for divergent outcomes (Avgerou, 2008).

A key feature of diffusion of innovation approaches is the belief that the adoption of IS innovations can be accelerated by focusing on individual gain. However, simply identifying how an individual may gain relative advantage or prestige by adopting an IS innovation runs counter to anthropological theories regarding how marginalised communities in Mexico (and other countries) behave. In these communities, egoism is viewed as a social ill, and individuals who brag about their success are subject to ridicule (Aguilar, 1984). Therefore, while individualist approaches have proven durable within the developed world; in marginalised communities innovations are unlikely to be championed. Drawing on the anthropological discipline provides a valuable explanation regarding how relying on diffusion of innovation approaches, with an emphasis on individualism, may not work within marginalised communities in Mexico; and may also help explain why researchers have been unable to consistently apply positivist frameworks in ISI4D.   Therefore, it is apparent that a

limitation of Rogers' (1962) approach is that it does not allow for consideration of contextual factors.

Similarly, adopting the perceived characteristics of innovation approach within the context of marginalised communities contains a number of weaknesses, with researchers finding that poor communities tend to rely on community-based support systems, disapproving of individual gain (Aguilar, 1984); and that therefore, selecting a model of adoption that relies on individualist incentives runs counter to normative behaviour, potentially resulting in the sector resisting the adoption of ICT tools. A further weakness lies in the assumption that an individual's desire for relative advantage over their peer group will influence their adoption behaviour, as the assertion that gaining a relative advantage will motivate behaviour is similarly at odds with the social structures present in many marginalised communities, as support networks are contingent on individuals sharing equal levels of prosperity (Lomitz, 1977); with support only available from individuals at the same socio-economic level. Initiatives using this approach may require adopters to renounce their established support networks, in an attempt to gain social or economic advantage. Such an expectation presents a high-risk proposition, as a lifetime of relationship building is jeopardised on a promise that an ICT tool will eliminate the need for the established support system.

When using the TPB in an ISI4D context, researchers often assume that individuals conduct a cost benefit analysis (Maddon, Ellen & Ajzen, 1992). Aguilar (1984) noted the frustration of a development manager, who, after explaining the perceived high benefits and low risk of a project, was still unable to convince the community concerned to participate. Such reluctance is better understood when viewed through an anthropological lens. Marginalised communities have a tradition of not cooperating with one another on economic matters, and therefore the project concerned, while arguably representing low economic risk, was actually perceived by the community as being highly risky, since it would necessitate pooling their limited social capital with that of their neighbours. Researchers have noted that within marginalised communities, there is often a belief that social capital is a zero-sum-gain asset (Aguilar, 1984), as once social capital is used, it is difficult to restore, and therefore, must be saved for an emergency. Projects that focus on TPB to accelerate

IS adoption run counter to beliefs about how social capital is used and maintained. It therefore appears that individuals from marginalised communities consider vastly different factors when conducting a cost/benefit analysis than individuals in the developed world.

Approaches that use the TAM assume that leaders, key suppliers and customers play an important role in the adoption of an innovation, and that this requires a high level of trust between the MSE and the advocate of adoption. However, marginalised communities function on low levels of trust (Casson & Guista, 2004), with confidence in others built slowly over time, and subject to a constant fear of betrayal. Trust or *'confianza'* is a key term within indigenous cultures of Mexico (Bohannan, 1963), rarely extending beyond the nuclear family (Riding, 1985). Marginalised communities in Mexico have deeply held beliefs about exploitation, which arose during the Spanish conquest, and continued through peonage (serfdom) after independence (Riding, 1985). After centuries of such exploitation, it is arguably naïve to assume that marginalised communities would be willing to rely on the market system.

Table 2.1 summarises the four positivist theories presented in this literature review. The first column presents the four most widely use positivist theories. The second column highlights key findings of the research, while the third column outlines the strengths of each theory, and the fourth column identifies weaknesses and limitations. The final column uses trans-disciplinary research to identify that gaps in the understanding of IS adoption and non-adoption research within an ISI4D setting. While the positive approaches have proven reliable in some settings, there are significant gaps in understanding of IS adoption within the Taxco Silver Handicraft Sector.

Theory	Key Findings	Strengths	Weaknesses	ISI4D Setting
Diffusion of Innovation (Rogers, 1962).	Adoption predictable. Diffusion driven by competitive pressures, firm strategy, firm rivalry.	Adoption occurs in a predictable and sequential process (Midgley & Dowling, 1993).	Limited insight into how embedded technologies resist change (Rogers, 1962)	Champions unlikely to emerge in certain contexts (Aguilar, 1984).

Perceived Characteristic of Innovation (Moore & Benbassat, 1991).	Attitudes positively correlated with adoption. Adoption predicted by Relative Advantage, Results, Visibility, Trialability, and Ease of Use.	The development of an instrument to measure the likelihood of adoption (Moore and Benbasat 1991).	Downplays subjective factors that influence adoption (Tornatzky & Klein, 1982).	Individuals do not seek advantage over others in marginalised communities.
Theory of Reasoned Action / Planned Behaviour (Ajzen & Fishbein 1977).	Builds on TRA, by adding the perception of behavioural control. Adoption is enhanced when the level of perceived control is similar to the level of actual control.	Functions well in predicting adoption (Sheppard, Hartwick & Warshaw, 1988).	While is considers normative influence, it does not consider environmental or economic influences on behavioural intention (Boston University, 2013).	Individuals tend not to cooperate with one another (Aguilar, 1984).
Technology Acceptance Model (TAM) (Davis, *et al.* 1989)	Adoption is dependent on individual belief. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) increase adoption.	Focused on user satisfaction and attitudes (Viswanath, Davis & Morris, 2007).	Provides limited assistance when non-adoption is encountered beyond the need to increase usefulness or PEOU (Lee, Kozar and Larsen, 2003).	Marginalised communities operate with low levels of trust (Casson & Guista, 2004).
	Identified additional factors that predict adoption. The role of senior management, innovativeness of the individual, pressure from suppliers and customers and self image all impact upon adoption.	Identification of characteristics of individuals likely to adopt new technology (Moore & Benbassat, 1991).	Has not increased understanding of the adoption process (Bagozzi, 2007).	

Table 2.1: Strengths and Weaknesses of Positivist Approaches in ISI4D

2.2.2. Interpretivist Approaches

29

This section introduces interpretive perspectives on IS adoption and non-adoption, and discusses the key concept of new institutional theory and its application to IS research. This will include Avgerou's (2008) meta-analysis of ICT research, highlighting how researchers have used Scott's three pillars of institutions as a tool for understanding IS adoption and non-adoption behaviour.

There is growing body of literature that uses interpretivist approaches to explore the adoption and non-adoption of IS innovation. This research relies on the Myers (2013) definition of interpretive research, which assumes that access to reality is available only through the human constructions of social reality. The focus is not deterministic, as is the case in positivist research, but lies in understanding phenomena through the meanings assigned to them. The interpretivist literature in IS suggests that adoption behaviour is shaped by both internal and external influences, which are unique to the context. This belief is substantiated by a growing number of researchers, who believe that a phenomenon can best be explained by considering the role of context in explaining behaviour (Walsham, 2013; Avgerou, 2009; Hayes & Westrup, 2012).

Context is the setting or circumstance in which behaviour occurs, but also affects how it is interpreted (Myers, 2013). This chapter relies on the Hayes and Westrup (2012) definition of context, describing it as a dynamic concept resulting from processes of connection and disconnection. Context affects how individuals interpret the world, and is the circumstance in which behaviour occurs. Researchers must be aware that context defines the dominion over which information is drawn, and frames the assumptions used to design a study, setting the spatial and temporal limits within which interpretations are meaningful (Klein & Myers, 1999). According to Edington & Shin (2006), there is a need to understand how these contexts affect adoption and non-adoption.

The importance of context is also recognised in relation to the digital divide (Wade, 2002). A significant number of ISI4D projects led by both international agencies and national governments focus on bridging the digital divide and achieving the Millennium Development Goals. A number of researchers have specifically focused on handicraft production (Blue, 2006), and the projects designed to deliver ICT access in this sector. With this emerges a growing realisation that there are cultural

influences on how people adopt IS innovations (Madon *et al.,* 2009), with the inference that the successful adoption of IS innovations must be based on the customisation of initiatives designed to reflect the realities of the community (Avgerou, 2008). Institutional theory provides a useful mechanism by which to explore how local context influences adoption (Madon *et al.*, 2009). The institutionalisation process is a useful tool to explore how institutions influence the adoption and non-adoption of IS innovations.

2.3. New Institutional Theory

According to Scott (2004), the three key research areas of institutional theory are institutions, organisational field, and institutional isomorphism.

New institutional theory differs from classical institutional theory as the focus shifts from organisations to rules, which are not independent but fully embedded within the social system in which they reside (Lowndes, 2001). It is based on the premise that behaviour is shaped by technical demands, available resources and institutional forces (DiMaggio & Powell, 1983), which form the basis of structures within organisations and organisational fields.

According to Scott (2008), in the middle of the 20th Century, scholars such as Parsons (1934) and Selznick (1948) began to use institutional theories to explore the structure and behaviour of organisations, producing a body of work that has come to be known as neo-institutional theory (Scott, 2008). Table 2.2 outlines four key differences between classical and neo-institutionalist approaches identified by Scott.

	Classical	**Neo-institutionalist**
Interdeterminancy / determinacy	Assumed perfect competition	Pervasive market power even with competition
Endogenous / exogenous	Posits the primacy of individual needs or wants	Needs and wants are shaped by social institutions that require research
Behavioural realism / simplifying assumptions	Utilitarian assumptions of behaviour	More pragmatic and realistic models of economic motivation required
Diachronic /	The economy is timeless	Focus on how the economy

synchronic analysis	and shapeless	achieved its current features

Table 2.2: Comparison of Key Concepts within Classical and Neo-institutionalist Theories

Institutional theorists rely on Weber's concept that legitimacy is a form of organisational structure that is not related to the technical components of the work itself. According to Scott (2008), one of the earliest researchers to identify the role of institutions in influencing behaviour was Merton's 1936 work, which found that managers typically focused on conforming with rules even when they were contradictory to organisational goals. Selznick (1948) relied upon the teaching of Merton to develop his concept of institutionalisation, in which organisations create instruments in order to achieve specific goals, with the outcomes shaped by the context in which they occur. As institutions gain value, agents act to preserve the structure (Scott, 2008). Parsons (1934) furthered neo-institutionalism by examining the relationship between the organisation and the environment in which it operates. Individuals' normative behaviour is based on internalising the common cultural institutions, and the purpose of cultural norms is to legitimise both the organisation and the pattern of behaviour. As behaviour is internalised, individual behaviour is rational, but remains bound within the structure of the institution (Scott, 2008). Table 2.3 summarises some early research and its key findings on the role of institutions.

Key Research	Key Findings
Parsons (1934)	Norms legitimise institutions
Merton (1936)	Rules trump instrumentalism
Simon (1945)	Organisational structures are designed to simplify decision making through the re-enforcing mechanism of bounded rationality
Selznick (1948)	Means become infused with values

Table 2.3: Early Institutional Theories (Adapted from Scott, 2008)

Over the last 35 years, there have been a number of important works in new institutional theory, including Meyer & Rowan (1977), Zucker (1977), DiMaggio & Powell (1983), and Scott (2008); that have worked to differentiate new institutional theory from traditional institutionalism through the focus on the role of previous assumptions of agents (Thornton, Ocasio & Lounsbury, 2013). New institutional theory is based on the belief that behaviour is 'rational', but that it is also bound to the

context in which individuals reside. In 1945, Simon developed the concept of 'bounded rationality' as a way of exploring how institutions reduce the discretion of individuals (Scott, 2008). Meyer and Rowan (1977) continued to develop alternatives to classical institutional theory by focusing on three central tenets: institutional rules, legitimacy, and isomorphism. Allowing researchers to focus on the proposition that conformity and isomorphism (how organisations in the same sector resemble each other, and may become decoupled from best practice) is based on institutional rules. Organisations follow the cultural myths and symbols of the environment in which they operate as a strategy to build legitimacy and ensure survival, resulting in organisations beginning to resemble each other (Thornton, Ocasio & Lounsbury, 2013).

There is some disagreement over the term 'institutions', and therefore this work draws upon Scott's (2004) definition, which describes durable social structures that include symbolism and social actions, and which allocate and use resources. Institutions are commonly viewed as enduring structures (Oliver, 1992), formed through human activity (Jepperson, 1991). A key feature of institutional theory is that individuals engage in behaviour that may be contrary to self-interest (Tolbert & Zucker, 1996), with individuals responding to new situations by relying on deeply embedded beliefs to make sense of it and to find an appropriate response (DiMaggio & Powell, 1983). In summary, classical institutional theory examined how institutions persist, while new institutionalism tends to focus on change (Cousins & Robey, 2005). The result is that institutions generate action(s) designed to preserve existing institutional arrangements (Tolbert & Zucker 1996). As such, Jepperson (1991) noted that institutions are resistant to change, with ideas transmitted across generations (Zucker, 1977).

Even though institutions are often viewed as enduring and resistant to change, change does nevertheless continue to occur. Institutions are modified and in certain circumstances are rejected (Oliver, 1992). This occurs when their meanings and actions are discredited or no longer support their existence (Avgerou, 2009). Therefore, a key feature of new institutionalism is a focus on the deinstitutionalisation process (Oliver, 1992), with researchers exploring how institutions are both weakened and may disappear (Scott, 2008), with the displacement of one institution resulting in

the formation of a new one (DiMaggio & Powell, 1983). The emergence of any new institution requires consensus building, to enable the creation of the new institution to replace or modify the existing institution (Nicholson & Sahay, 2009). Institutions influence behaviour at both a macro and micro level. The definition of macro influences used in institutional theory concerns influences emerging from outside the organisation, whilst micro influences are seen to reside within the organisation (Thornton, Ocasio & Lounsbury, 2013). Macro influences include global, national, local, sectoral and social networks (Zaheer & Zaheer, 1997). Within an organisation, micro influences that reside within cultural norms include notions of trust, exploitation, gender roles, egoism and community responsibility.

In response to Meyer and Rowan's work (1977) on isomorphism, DiMaggio and Powell (1983) began exploring the structural dynamics of organisational fields, which, they assert, is a key tenet of new institutionalism. The focus of this research is on how groups of organisations interact with one another to generate systems of meanings that are similar amongst various organisations. Such organisations have significant interaction with each other, and organisational fields are said to exist only to the extent to which beliefs and behaviours are institutionally defined (DiMaggio & Powell, 1983).

The overarching proposition of DiMaggio and Powell (1983) is that an organisational field increases structuration, which is defined as the development of patterns in social relationships or social phenomena, and is the internal skeleton that guides behaviour (Giddens, 1984). The more organisations resemble each other, the more they become isomorphic. The definition of an organisational field is an aggregate of organisations that engage in a social life; including competing organisations, suppliers, customers, resources and regulatory agencies (DiMaggio & Powell, 1983). However, the very concept of 'organisational field' is contested. According to DiMaggio and Powell (1983), it refers to the proliferation of isomorphism amongst organisations within a community; while for Scott, an organisational field represents the differences between organisations, being about competition and not isomorphism (Thornton, Ocasio & Lounsbury, 2013).

New institutionalism focuses on the cognitive-cultural components of institutionalisation and the consensus that has emerged within the organisational field. Identifying actions and responses that serve to reinforce legitimacy. While such structures may be legitimate within the context, they may no longer efficiently maximise economic outcomes (Thornton, Ocasio & Lounsbury, 2013; DiMaggio & Powell, 1983).

Institutional theory regards the diffusion of innovations to be a socially embedded process, reflecting institutional forces (DiMaggio & Powell, 1983). This allows researchers to explore the possibly divergent outcomes when ICT tools are introduced (Avgerou, 2010). Institutional theory is based on the premise that behaviour is shaped by technical demands, available resources, and institutional forces (DiMaggio & Powell, 1983). Institutional forces (coercive, normative and mimetic) shape the nature of how institutions are created, exert isomorphic pressure, and have strong influence on the organisational field (DiMaggio & Powell, 1983). Coercive factors relate to the role of the state in devising regulation and compelling compliance, which is accomplished through the exercise of political power and embedded cultural expectations within the sector. Normative factors relate to the role of peer groups, professional organisations and education on influencing concepts of accepted behaviour. These structures emerge through the rise of professional organisations that set standards for behaviour. Mimetic isomorphism relies on market forces and describes the habits and norms that dictate responses to new situations (DiMaggio & Powell, 1983).

The emphasis on institutional forces allows research to focus on rules, which are often not clearly understood. Scott (2004) developed a three pillar theoretical lens to allow researchers to explore how institutions are embedded within the social system in which they reside (Lowndes, 2001).

2.3.1. Scott's Three Pillars of Institutions

Scott (2004) further developed the DiMaggio and Powell hypothesis of institutional pressures, which he called the 'three pillars' of institutions, identifying regulative, normative and cultural-cognitive components. Whilst Scott's three pillars share common elements with DiMaggio and Powell, there remain notable differences.

Whilst DiMaggio and Powell focus on the elements that constrain behaviour, such as the need for legitimacy, mechanisms of structuration and isomorphism; Scott moves beyond this to explore relational factors such as cooperation and competition. This modification allows researchers to explore why some organisations become indistinguishable from one another, while others diverge (Thornton, Ocasio & Lounsbury, 2013).

Scott reconceptualises the institutional pillars, arguing that institutions are embedded within carriers, which are repositories for the symbolic systems, relational systems, routines, and artefacts of each of the three pillars. Table 2.4 summarises the key concepts of each carrier on Scott's three pillars, and each of the three pillars contains the carriers. The carriers are the sources of legitimacy through which structures are generated. The first carrier is the symbolic system, which Scott defines as relating to the models, classifications, representations and logics (Thornton, Ocasio & Lounsbury, 2013). The second carrier explores the relational system of each pillar, which is defined as the pattern of expected behaviour that is applied to specific positions and roles, and relates to aspects of governance and power systems. The third carrier is routines, which is defined as patterns of actions that reflect tacit knowledge and that provide protocols and standards. The fourth carrier relates to artefacts, which are objects that comply with mandates. Artefacts are the humanly devised objects used in the performance of task (Thornton, Ocasio & Lounsbury, 2013).

Carrier	Regulative	Normative	Cultural-Cognitive
Symbolic	Rules and laws	Values and expectations	Schema
Relational system	Governance systems	Regimes, and authority systems	Structural isomorphism and identities
Routines	Protocols, standards and procedures	Jobs, roles and obedience	Scripts
Artefacts	Objects that comply with mandates	Objects meeting conventions and standards	Objects possessing symbolic value

Table 2.4: Institutional Pillars and Carriers (Scott, 2008)

2.3.1.1. Regulative

Institutions can be thought of as having rules, both formal and informal, that structure social interaction. Formal rules are defined as rules that are enforced by third parties, such as the state, professional associations or accrediting agencies; while informal rules are internal to the organisational field and are self-enforcing (Helme & Levistky, 2006). Scott (2008) identifies the first pillar as 'regulative', and argues that all institutional scholars recognise the importance of institutions in regulating and constraining behaviour, with the primary mechanism for regulating behaviour coercion (DiMaggio & Powell, 1983). Scott (2004) believes the regulative pillar encompasses not only legally mandated laws, but also informal rules, which while not having the coercive backing of the state, still enforce compliance through informal mechanisms, such as conventions and codes of conduct. The regulative pillar is significant as within it reside the regulatory processes of rule setting and sanctions (Scott, 2008).

The discussion of the regulative pillar in relation to this research will explore the role of the state on IS adoption, and how, in certain contexts, local factors exert a stronger influence than regulations on IS adoption and non-adoption.

Legal mandates have long been identified as a commanding influence in accelerating ISI4D, with national governments seen as having a key role to play in the enacting of regulations, including the impartial contract enforcement (Oxley & Yeung, 2001) that accelerates adoption (Commander, Harrison & Menezes-Filho, 2011). Government policies act as a principle force of isomorphism within organisational fields (Hu, Hart & Cooke, 2007). However, in many developing economy settings there is an awareness of the limits on both government power and the resources required to guarantee successful ISI4D, with Bass, Nicholson and Subrahmanian (2013) finding that there are limits to the role of the state in furthering ICT development. They confirm that, in their area of study, while government policies had a positive impact, the ISI4D project in question garnered limited success, due to the insufficient levels of state support, which resulted in a lack of sufficient skills. This underlines that in some contexts, the regulative power of the state is stymied by a lack of resources.

Furthermore, simply ensuring the adoption of ICT tools, while necessary, is not sufficient to improve organisational performance (Donner, 2009). When exploring the role of governments in Latin America, researchers have discovered a number of context specific issues that are undermining adoption rates. Governments have sought to encourage the use of ICT tools by businesses, but it appears that this has not been enough to substantially increase their use, suggesting that regulation is not a determining factor in IS adoption. Hilbert's research (2001) found that a 'lack of trust' rather than a 'lack of access' was the cause of low adoption rates of e-commerce methods. The trust issue will be explored in greater detail in the section on cultural-cognitive factors; however, part of the reason for low adoption rates is because the process of establishing the necessary rules and enforcement mechanisms becomes difficult when transactions are conducted via ICT tools. The process of building a virtual exchange system requires a belief on behalf of the buyer that a seller will follow the accepted rules. However, transactions may not be subject to regulative institutions (e.g. legal rules if crossing international boundaries) and therefore the buyer recognises that they have very little recourse if a seller acts dishonestly (Ba, 2001). While it is widely understood that trust must be established in order for ISI4D projects to succeed (Gefen & Straub, 2004), the challenge remains that successful projects require potential users to widen their current trust mechanisms to encompass the virtual realm, without the safeguards of traditional enforcement mechanisms that exist in current regulative institutions.

Ngwenyama and Morawczynski (2009) argue that macro policies are insufficient, and that greater attention should be directed at the micro or meso level to encourage ICT adoption and use. Researchers exploring the micro level have found that an MSE's small size is often a deterrent to adoption, with small enterprises requiring special assistance with ICT adoption (Bharati & Chaudbury, 2012). This leads to the conclusion that specific policies must be designed to manage the context in which MSE operate (Chacko & Harris, 2006; Konstdakopulos, 2005). Nevertheless, it must be remembered that creating customised approaches is both more costly and time-consuming, and ultimately may prove futile, as in many initiatives, widespread IT dissemination never occurs, as only a few MSE will ever adopt (Chew, Ilavarasan & Levy, 2012).

The key finding from this literature review is the identification of the importance of the regulative pillar in influencing behaviour. However, changes in formal regulations may not be enough to accelerate IS adoption, if informal rules are not equally supportive. The literature supports the notion that the regulative pillar, within developing economy settings, may not have as strong an influence of adoption behaviour as non-compliance with regulation or legal mandates may result as a consequence of the limited power and resources of the state, while resistance also emerges from low levels of trust in both the state and the ICT tools in question (Hilbert, 2001). The implication is that increasing ICT adoption requires more than simply increasing access to ICT through formal regulation. As an illustration, when exploring ISI4D in Mexico, research found that the establishment of tele-centres in poor communities did not have an impact on improving organisational performance of MSE in rural Mexico (Mariscal, Gil-Garcia & Aldama-Nalda, 2011). This is further complicated in handicraft sectors, which typically operate outside of a formal regulatory environment (Stromberg-Pellizi, 1993), and therefore there is a gap in understanding regarding how the regulative pillar influences behaviour within this organisational field. Scott's research (2008) does provide some insight, stating that there is an interdependence between the pillars, suggesting that organisational fields with weaker formal regulative pillars may rely on normative pillars to stabilise the institutional environment. In this way, the regulative and normative pillars can be mutually reinforcing (Hu, Hart & Cooke, 2007).

2.3.1.2.   Normative

Scott (2008) identifies the second pillar in his typology as normative, which is defined as the prescriptive, evaluative and obligatory aspects of social life, with the two main concepts being values and norms. Values are the understood perceptions of the preferred/ ideal, along with the accepted standards by which beliefs and behaviours are assessed. Norms specify how things ought to be done and the appropriate methods employed to achieve desired objectives. Such internalised norms may not appear rational to an outside observer (Thornton, Ocasio & Lounsbury, 2013). For example, when exploring the development of peonage in Mexico, Knight (1986) found that the poor often willingly became indentured servants. While this behaviour may not initially seem rational, it was rational within the bounds of a society with limited resources, and was consistent with the institutionalised authority system for

the poor to become highly indebted, as there was an expectation that the wealthy aristocracy would assume responsibility for their care. Within the normative pillar, the symbolic systems dimension refers to values and expectations of individual behaviour in specific situations. A consequence of this hierarchical society (Crouch, 2004) is that Mexico has lower levels of investment in ICT tools, with all Mexican GDP growth from 1989-2003 coming from labour inputs rather than efficiency gains (Jorgenson & Vu, 2005). The relational system, with its concomitant regimes and processes of authority, results in a near universal response from members of the handicraft organisational field to the introduction of a new IS innovation, which reinforces the notion of complete adherence to institutional structures (Parsons, 1990).

There has been a growing interest in the role of normative influences, not only because norms are used in the construction of standards, but also because of the notable decline in the effectiveness of formal legal mandates, leading to an increased use of normative pressure through associations (Higgins & Hallstrom, 2007). Lamb and Kling (2003) identified three types of normative pressure that aim to elicit coercion to adopt IT: professional affiliation, the nature of the relationship, and the interaction between agents. The idea that social norms influence IT adoption is a recurring theme in IS research (Hu, Hart & Cooke, 2007; Kshetri, 2007; Silva & Hirschheim, 2007). For instance, Silva and Hirschheim (2007) recount the case of the implementation of a strategic information systems (SIS) project in the Ministry of Health in Guatemala. The SIS project was designed to improve the service delivery, relying upon the establishment of a temporary parallel structure. This structure created a suspicion in the interaction between the agents, with researchers finding that the doctors and healthcare administrators were fearful of the new agents empowered to implement the project. However, it was the nature of this relationship, which was highly centralised and had extensive formal controls, which proved the most difficult norm to overcome in the institutionalisation process of the SIS project, as the agents hired to implement SIS were granted limited powers to alter existing organisational arrangements. The overarching finding was that the fiercest resistance arose from the normative structures in place, and not the agents themselves, substantiating the position that normative institutions (in this case, the core values that were ambivalent towards change led by a centralised authority) played a significant role in preventing adoption.

Therefore, to be successful, IS innovations must be aligned with the norms of the operational context and become cognisant with the nature of the relationship of the existing network. A relevant example comes from an ISI4D project in Morocco, where the IS initiative was designed to use the Internet, and specifically a website, to expand market opportunities for traditional weavers. The project was designed to assist the almost exclusively female weavers increase their incomes. The proposal was that when a rug was sold through the website, the aid agency would pay the weaver for the product. It was decided that the proceeds from rug sales should be given to the male head of the household rather than the female weaver, designed to avoid a potentially awkward situation of women receiving monies that, according to cultural norms, should go to the male head of the household (Rhodes, 2009). By proceeding in this way, the project achieved a degree of success, as it remained consistent with the nature of the relationship of family dynamics. The findings suggest that the success of this project can partially be attributed to the aligning of the IS innovation within the existing obligatory aspects of social life of Scott's normative pillar, thus demonstrating the value of a contextual approach in IS adoption. However, the research found that whilst such cultural adaptations can produce success at a micro-level, projects can encounter obstacles when they attempt to scale up (Sahay & Walsham, 2006); leaving researchers puzzled as to how to make projects sustainable or widened to include the broader community.

Chaudhuri (2012) further explored contextual differences by focusing on the interaction between agents to help understand adoption decisions made by marginalised communities. The research found that ICT adoption and non-adoption behaviour is influenced by two distinct factors, with ICT tools, which have an emotive impact, gaining the highest acceptance amongst the poor. Cell phones have been widely accepted because they have such an emotional component, for example by providing easy access to distant family members. However, other ICT tools, such as computers and the Internet are not as widely accepted, because their adoption is based on a utilitarian purpose. The findings indicate that there is less likelihood of marginalised individuals allocating their scarce resources to ICT tools if they must determine the profit potential of such a decision. Research has shown that M-Pesa and other forms of electronic money transfer have become readily accepted because

they simplify the process of sending money home (Donner & Camilo, 2008). While this adoption serves a utilitarian purpose, M-Pesa's appeal is also effective at an emotional level, as it facilitates the economic betterment of distant family members. However, a strong counter argument can be found in the research by Aker and Mbiti (2010), which revealed that farmers were using ICT tools to check prices of various suppliers or buyers, in order to determine the most profitable course of action. While this and other research finds a utilitarian use for ICT tools, the majority of the literature finds that ICT tools are more readily adopted for personal use (Chaudhuri, 2012); indicating a strong influence of social norms in adoption decisions. The research identified the norm of taking care of family by sending money home, which the IS innovation facilitated more effectively.

The research on ICT adoption by marginalised groups finds differences in their behaviour from that of other groups. Beckinsale and Ram (2006) found that behaviour was more strongly influenced by peer group in MSE than in larger enterprises, which suggests that ISI4D projects aimed at MSE should focus their training and development components not at an individual level, but instead at the meso level. It appears that failure in adoption is often the result of resilient normative beliefs being at odds with the intended purpose of newly introduced ICT tools. Andrade & Urquhart (2012) found that ISI4D projects that do not take into account locally accepted beliefs and embedded power structures are more likely to fail. The examples discussed here serve to highlight the importance of Scott's normative pillar, and specifically how positioning an IS innovation as a tool designed to improve an individual's ability to fulfil the 'obligatory aspects of social life' has a strong influence on adoption.

2.3.1.3. Cultural-Cognitive

Anthropologists such as Berger, Goffman and Meyer; and organisational scholars including DiMaggio, Powell, and Scott have all emphasised the centrality of cultural-cognitive institutions (Scott, 2008). According to Scott (2008), a central tenet of neo-institutional research is a focus on cultural-cognitive institutions, which are comprised of the shared conception of the nature of social reality that form a world view that individuals then use to make sense of the world; thereby placing the adoption of IS innovations firmly within the social context (Avgerou, 2003). This allows researchers

to move beyond the assumption that individuals simply imitate behaviour; to instead allow the exploration of issues of identity and the interpretation of meaning. This pillar includes objects processing, the symbolic meaning assigned by individuals to certain articles, and how this is used for sense making (Thornton, Ocasio & Lounsbury, 2013). The symbolic systems refers to categories and schema, while the relational system relates to structures and identities that individuals possess. As such, the cognitive-cultural pillar is concerned with presumed behavioural assumptions, in which the artefacts are objects considered to possess symbolic value. Noir and Walsham (2007) further argue that ceremony and symbolism predominate in IS adoption behaviour, which aligns with Andrade and Urquhart's (2012) belief that there is a modernity bias surrounding adoption, and therefore IS adoption is less about action and instead more about a world view that prioritises development, even in the absence of evidence of improvements to organisational performance (Avgerou, 2009).

Within the cultural-cognitive framework, researchers have tended to focus upon the reconciling of the external world and an individual response, which is based upon an internalised symbolic representation of the world (Scott, 2008). Successful research therefore requires the consideration of objective behaviour as well as an individual's subjective interpretation of an action. Every humanly devised institution is arguably the sedimentation of meaning, with culture providing the pattern of thinking and acting that varies by societal context and which is often contested (DiMaggio & Powell, 1983), and is therefore adopted and adapted to suit vested interests (Madon *et al.*, 2009). The implication is that ISI4D researchers should be aware of the deeply embedded institutions present in the organisational field.

Berger and Luckmann (1967) argue that responses to ISI4D projects are based on both the individual and group subconscious application of rules and customs, coupled with implicit responses to new innovations. It is the shared awareness of the essence of how society functions, and how individuals comprehend their world that influences behaviour (Scott, 2008). Since compliance is based on institutionalised habits, individuals may be unaware that their behaviour is a cultural response (Grewal & Dharwadkar, 2002), and that consequently adoption decisions are dictated by the sense of self. For example, once a professional association establishes an Internet presence, members establish an on-line profile. The nature of the relationship with

their peers influences an agent's behaviour when modifying this on-line profile, in order to maintain a sense of self within the professional organisation operating through the new IS innovation (Lamb & Kling, 2003). When exploring the role of the cultural-cognitive pillar within the ISI4D setting, it is apparent that behaviour is often at odds with assumptions. For example, Caceres, Aguero and Cavero (2012) conducted exploratory research into the handicraft production of furniture in El Salvador, finding both positive supplier and customer ICT adoption, but very limited lateral use; revealing that the MSE used ICT tools to improve operations with both suppliers and customers, but did not use the ICT tools to improve coordination amongst enterprises within the sector, and that these MSE opted to use ICT tools only within certain areas of their business. The researchers adopted a positivist approach in this research, which whilst identifying important behavioural differences, was unable to answer the more pressing question of why this was the case. The researchers did not explore why the IS innovation was only adopted by certain members of the organisational field and not others; suggesting that there are a number of contexts where it makes sense to use ICT tools, and not others; and that these contexts are poorly understood.

Research exploring the role of influence of individualist versus collectivist societies found that the sense of self had a strong influence on adoption decisions (Gambrel & Cianci, 2003). Aguilar (1984) found that collectivist societies focused on the collective benefit and were not motivated by individual gain, and these findings help increase understanding of the reluctance on behalf of some individuals to adopt ICT tools. Therefore, ISI4D focusing on individual gain (Aguilar, 1984), may find that resistance actually emerges from the cultural-cognitive sense of community responsibility; indicating that in such situations, an individual's desire for personal advancement must be located within a community wide development initiative. Cultural-cognitive institutions vary from context to context, and require researchers to explore how such institutions increase (or constrain) the likelihood of successful ISI4D. There is currently a gap in understanding regarding how adoptive and non-adoptive behaviour emerges within collectivist organisational fields.

Table 2.5 summarises the key findings of the research discussed here, categorised according to Scott's three pillars. The keys findings are presented in the first column;

the second column identifies some of the strengths of the research, while the third column summarises the weaknesses of each pillar. The fourth column highlights the findings of research done in the Mexican context.

Pillar	Key findings	Strengths	Weaknesses	ISI4D in Mexico
Regulative	Primary mechanism is coercion (DiMaggio & Powell, 1983). Monitor and sanction behaviour (Scott, 2008).	Regulative forces are powerful drivers of change (Hu, Hart & Cooke, 2007).	Regulative tools are not enough in some developing country contexts (Hilbert, 2001). Weak state has limited ability (Ba, 2001).	Connectivity had limited impact on organisational performance (Mariscal, Gil-Garcia & Aldama-Nalda, 2011).
Normative	Near universal adherence (Parsons, 1990). Internal norms may not appear 'rational' to outside agents, but behaviour is consistent with the social life within the organisational field (Thornton, Ocasio & Lounsbury, 2013).	Peer pressure is a powerful tool in motivating behaviour (Lamb & Kling, 2003; Beckinsale & Ram, 2006). ICT tools have an embedded agenda (Andrade & Urquhart, 2012).	Norms maybe significantly different requiring customisation to local context (Rhodes, 2009). Inability to scale up projects (Sahay & Walsham, 2006).	Hierarchies of power limit investments (Jorgenson & Vu, 2005).
Cultural - Cognitive	Taken for granted assumption of how things work (Zucker, 1977) The shared conception that make up the nature of social reality and becomes the lens through which sense is made (Scott, 2008).	IS innovations take place in a specific social situation (Avgerou, 2003). ICT is more about ceremony and less about action (Noir & Walsham, 2007).	Lack of the exploration of the institutionalisation process (Madon *et al.*, 2009). ISI4D projects are adapted to suit the needs of vested interests (Madon *et al.*, 2009).	Lack of trust impacts upon behaviour (Hilbert, 2001).

Table 2.5: Strengths and Weaknesses of Interpretivist ISI4D Research

2.4. Research Gaps

The central question within the ISI4D discipline is "how or why do some IT related innovations diffuse widely, while others do not?" (Barrett, Heracleous & Walsham, 2013). The literature has reviewed two philosophical approaches (positivist and interpretive) that have been widely used to explain IS innovation adoption and non-adoption.

The findings of this literature review are consistent with those of other researchers (Avgerou, 2009; Heeks, 2008; Walsham, 2013), highlighting the need for research to consider local realities as a potential cause of ISI4D failure. ICT tools may be viewed as artefacts designed to improve organisational performance, however, within many development settings this is often not the case; and therefore the focus of research needs to move beyond the technical divide to increase focus on the cognitive divide (Fonseca, 2010). It is clear that there is a gap in understanding regarding how context influences the supposed 'irrational' behaviour of agents; and specifically for this study, in the Taxco Silver Handicraft Sector.

As discussed in Section 2.3.3.1, the regulative pillar relates to both formal and informal rules, and how these rules interact with the organisational field. The first gap is associated with the assumption that ISI4D initiatives introducing IS will drive development (Jorgenson & Vu, 2005). Yet Donner's (2009) findings indicate that it is difficult to measure the usage within the ISI4D setting, since any one telephone call may contain both personal and business aspects. Thus while research indicates that IS innovations are mostly used for personal purposes, Donner argues that it must also be improving MSE operations. There are a number of studies that support that assertion, such as Jenson's (2007) paper on the fishermen in Kerala, India. However, the connection between adopting IS innovations and economic development remains unclear at the BOP. Research by Chew, Levy & Ilavarason (2011) found that cell phone usage could explain some of the improvements in MSE performance. However, the authors believed that other factors are at play, which they were unable to identify. Therefore, this research intends to fill the gap in understanding how MSE are using IS innovations to improve organisational performance. Exploring other

factors, which may influence adoption will simultaneously increase understanding of how MSE are using ICT tools.

Whilst Tolbert and Zucker (1996) argue that adoption can be predicted on technical feasibility and economic viability, it is clear that issues surrounding trust have a substantial impact upon individual decisions, and that there is therefore a gap in understanding regarding how institutions of trust are impacting on the adoption of IS innovations. The literature reviewed identified the challenges faced in low trust societies, and the answer to this predicament may lie (at least in part) with the fact that simply passing a regulation may not overcome deeply embedded levels of distrust present within these organisational fields. This research intends to further existing understanding of how trust building operates within the organisational field, and how this may be harnessed to increase the likely success rate of future ISI4D initiatives. This research is consistent with Avgerou's (2001) assertion that research should explore various levels of context and explore the ways these levels are connected. It intends to expand the work of Hilbert (2001) and Ba (2001) to explore how trust is impacting MSE behaviour in the context of the Taxco Silver Handicraft Sector.

This literature review has also identified a knowledge gap in the normative pillar, which is concerned with the relational systems between agents. The gap is based on Robey and Sahay's (2001) identification of how local context influences views of IS innovations, and how this translates into behaviour (in the form of adoption or non-adoption) that furthers the embedded agenda. There is currently limited understanding of the dialectics involved in the adoption and non-adoption of IS innovations (Cho, Mathiassen & Robey, 2007); and this research intends to use examples gathered from the organisational field to illustrate the hidden agendas that reside within the organisational field and how this is demonstrated in understanding, in order to build a theoretical understanding of the dialectical resistance to ISI4D.

The literature review has also identified a gap in the understanding of the cultural-cognitive impacts to ISI4D. Heeks (2008) established that there is often a mismatch between donor and recipient expectations of projects; which is attributed to high levels of ISI4D failure. This research intends to demonstrate this mismatch in order to explore the failure; considering MSE adoption behaviour in the absence of a donor

driven model. Madon *et al.*, (2009) argue that researchers need to explore the institutionalisation process; a process that Noir and Walsham (2007) have begun to investigate through their research, finding that IS innovation adoption involves significant amount of ceremony. This research intends to build upon existing knowledge regarding how the institutionalisation process operates by exploring assumptions about 'local culture' (Avgerou, 2010), and the relationship between agents and institutions (Avgerou, 2010).

Table 2.6 summarises the gaps found in the literature that this research intends to address.

Research Gaps
Adoption of IS innovations has significant role in organisational performance, but business use is hard to measure (Donner, 2009)
Ba (2001) identifies a gap in understanding how on-line communities are built. There is limited research on how to build trust within the informal sector to facilitate the development of on-line market exchange.
ICT tools have an embedded agenda, there is need to explore the hidden agenda of ISI4D (Andrade & Urquhart, 2012) that often results in a mismatch and subsequent high failure rate (Heeks, 2008)
Understanding of local culture needs to move beyond stereotypical assumptions and study the relationship between agents and institutions (Avgerou, 2010)

Table 2.6: Gaps in ISI4D Literature

2.5. Theoretical Framework

Whilst scholars are keen to promote contextual approaches to adoption research, one of the biggest challenges in this area is often the constant reframing of the context (Hayes & Westrup, 2012), as research may struggle to establish the boundaries necessary to ensure manageability, whilst simultaneously retaining sufficient context to accurately explain the phenomena. This section presents the theoretical framework that will guide this research. As discussed above, this will involve combining Seo and Creed's (2002) model for exploring the process of institutionalisation and institutional change; with Scott's (2004) three pillars of institutions in order to analyse the empirical data; thus permitting the scrutiny of both persistence and change within the Taxco Silver Handicraft Sector.

2.5.1. Scott's Three Pillars of Institutions in ISI4D Research

The rationale for choosing new institutional theory to explore the institutionalisation process draws upon the useful frames developed by Scott to explore adoptive behaviour. It is also appropriate to investigate the relationship between IS innovation and organisational fields, within broader development objectives (Avgerou, 2009; Orlikowski & Barley, 2001).

Figure 2.1 presents the theoretical lens that will be adopted in this research. It draws upon Scott's three pillar framework to explore how individuals make sense of the introduction of an IS innovation, and how ICT tools are institutionalised within the sector. A key assumption is that there is an interrelationship between the three pillars (Hayek, 1979), making it problematic to treat each pillar in isolation, with Scott (2008) arguing that each institution is embedded with elements of each pillar. Consequently, this framework will employ Scott's three pillars as overlapping lenses that represent the interrelationship of each pillar on institutions, in order to analyse the empirical research data.
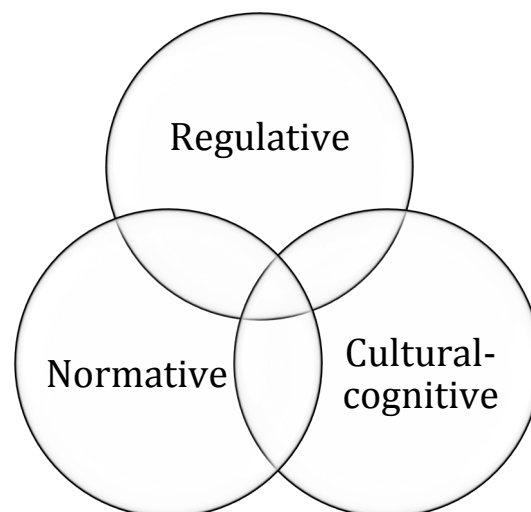
Figure 2.1: Scott's Three Pillars Presented as Overlapping Lenses (Adapted from Scott, 2004)

2.5.2. Institutionalisation and Institutional Change

Using a dialectical perspective, Seo and Creed (2002) developed a framework for understanding the process of institutional change. Their framework seeks to include both the historically embedded nature of institutions as well as the dynamic

contestation involved in building new institutions, along with the subsequent necessary deinstitutionalisation of existing structures.

2.5.2.1. Sources of Institutional Contradiction

According to Holm (1995), institutional theory possesses the inherent contradiction of embedded stability and agency. The paradox surrounds how agents can change institutional arrangements if their actions and world view reside within the very institutions that they propose to alter. A potential solution lies in focusing on the mechanisms that facilitate institutional change or reinforce institutions.

Institutional contestation within the organisational field begins with the introduction of a new IS innovation, which may come from exogenous, endogenous, or idiosyncratic sources. After the introduction of a new IS innovation, multiple contradictions emerge. This concept of contradiction is not new to institutional theorists (Seo & Creed, 2002), and many concur that it is these very contradictions that can lead to the development of new institutional arrangements (Powell & DiMaggio, 1991; Friedland & Alford, 1991; Jepperson, 1991), with the new arrangements being convergent or divergent to the previous institution (Scott, 2008).

There are four possible sources of contradiction (Seo & Creed, 2002). Firstly, structures that provide legitimacy may also undermine efficiency. This has been thoroughly explored in the works of Meyer & Rowan (1977); and DiMaggio & Powell (1983). Institutions often focus on establishing and maintaining legitimacy, which may result in the persistence of structures that undermine organisational performance. Researchers have identified a decoupling process that allows agents to keep rituals of legitimacy from interfering with operational efficiency. However, whilst decoupling may help solve some contradictions in the short term, in the longer term, legitimacy seeking behaviour tends to institutionalise the structures that undermine efficiency (Seo & Creed, 2002).

Secondly, organisational adaptability may limit future adaptability. Researchers have long noted that organisations operating within the same organisational field tend to resemble each other. While the development is similar, structures amongst competing enterprises may have originated as a result of competitive pressures (Scott, 2008).

Once institutionalised, such adaptations are perceived by agents within the organisational field as both natural and legitimate (DiMaggio & Powell, 1983), and become resistant to change, owing to the embedded networks that have been developed (Seo & Creed, 2002). The result is that behaviour, while consistent with internal norms, becomes unresponsive to changes in the external environment.

Thirdly is the institutional conformity that creates incompatibilities with external institutions. This contradiction moves beyond the organisational field and explores the dynamic societal context, involving multiple levels and complex elements of interconnectedness (Seo & Creed, 2002). That individual agents reside in multiple organisational fields was addressed by Friedland & Alford (1991), through the concept of competing institutional logics. Individuals are often exposed to multiple and potentially contradictory institutional structures, as they operate within multiple organisational fields. This interconnectedness may result in individuals attempting to silo the inherent contradictions between institutions. The nature of social relationships leads to the constant creation of new structures, which in turn require the constant modification of existing institutions, with the implication that over time such constant modifications exacerbate the contradictions found within institutions as well as between them.

Fourthly comes the development of isomorphism that conflict with divergent interests. Institutional theorists have long noted that existing structures are likely to reflect the needs of the most powerful interests within the relevant organisational field (Seo & Creed, 2002), with the resulting institutional arrangements satisfying the needs of some individuals more than others. According to Seo & Creed (2002), it is the interests of the least powerful that are most likely to be marginalised within any institutional arrangements. The institution is stable for as long as divergent interests are subsumed, but as the contradiction grows, individuals may engage in actions designed to contest existing institutional arrangements. While the emergence of contradiction is a requirement for institutional change, the interpretivist assumption is non-deterministic, in that the correct outcome is inevitable, and therefore the research is not about identifying the triggers that accelerate adoption but in exploring human praxis.

2.5.2.2.   Praxis as the Core Mediating Mechanism of Institutional Change

The concept of dialectics allows researchers to attempt to comprehensively explore the sources of contradictions and possible outcomes of the praxis. Praxis is defined as a purposeful departure, based on some level of understanding of the limits of the current structure, as well as the potential benefits of the proposed structure (Jepperson, 1991), whereas Seo and Creed (2002) define behaviour as an automatic response. Human action is the mediating mechanism of social reconstruction, which attempts to recast the social structure. It is important to recognise that contestation unleashes the forces of opposition, which have organisational resilience and are institutionalised as survival strategies to maintain existing social structures (Cho, Mathiassen & Robey, 2007). According to Seo and Creed (2002) there are two underlying concepts in human praxis. Firstly, is the role of partially autonomous agents situated within a contradictory social world in generating praxis. Benson (1977) suggested that humans possess a degree of autonomy from the institutions in which they reside. This is consistent with DiMaggio and Powell's (1983) idea of loose coupling. Nevertheless, a question remains about how praxis takes place, or under what conditions individual interests are sufficiently unmet to warrant the alternative action. Seo and Creed (2002) suggest that the likelihood of praxis increases as an actor's social experience is continually confronted by ever increasing tensions that emerge from contradictions both within and across institutions. It is the development of such social contradictions that permits the development of increasingly autonomous agents, with the agents transforming from a passive role to a more active one.

Secondly is the action by and crafty exploitation of institutional contradictions by agents. Praxis requires active participation in the reconstruction of the institution by agents (Seo & Creed, 2002). Friedland & Alford (1991) present agents as being able to artfully mobilise different institutional logics in order to serve their own interests, demonstrating that institutional change requires human agency, which in turn relies on growing institutional contradictions to trigger such human action.

There are four discrete ways in which institutional contradictions may enable or limit institutional change. The four triggers are the misaligned interests of potential change

agents; the reflective shift in collective consciousness; the mobilisation for persistence or reconstruction; and collective action.

Agents who are conscious of an institutional contradiction may mobilise resources to challenge the existing institutions. Greenwood and Hinings (1996) identify the level of satisfaction as either a predictor or praxis. The contestation may emerge from one agent or a multitude of agents who are not satisfied with the outcome of current institutional arrangements.

The assumption that praxis requires a reflective shift in collective consciousness arises from a belief that the objective situation in which agents reside is necessary but not sufficient for praxis (Benson, 1977). The strength of institutions lies in their ability to constrain behaviour and thus limit adaptation to new situations. It is the level of non-adaptability that creates contradictions in situations, which in turn become sources of praxis. This may occur as a gradual shift (from within) or as a result of radical disruption (from outside) on collective consciousness. This change can emerge from efficiency gaps or through inter-institutional incompatibilities that encourage institutional agents to critically evaluate and search for alternative structures, as the existing structures cease to provide (or provide in ever decreasing amounts) legitimacy as the outcomes of inefficient structures become more apparent.

The final source of institutional contradiction may result as a collective action from a group of entrepreneurs (Seo & Creed, 2002). The outcome of this praxis may not produce the intended consequence, since existing institutions serve the interests of the current beneficiaries, who have the desire and ability to contest any proposed change to institutional structures. This type of contestation involves the alignment and realignment of frames of reference and cultural-cognitive schema amongst a multitude of agents. For collective action to occur, a significant number of agents must alter their cognition. This may be precipitated by a crisis, which triggers dissent and allows previously marginalised groups to gain legitimacy. Such a crisis may also limit the access to resources of supporters of the current structures, which undermines their legitimacy and vested interests. Figure 2.2 publishes Seo and Creed's (2002) depiction of the development of institutional contradiction, praxis and institutional change.
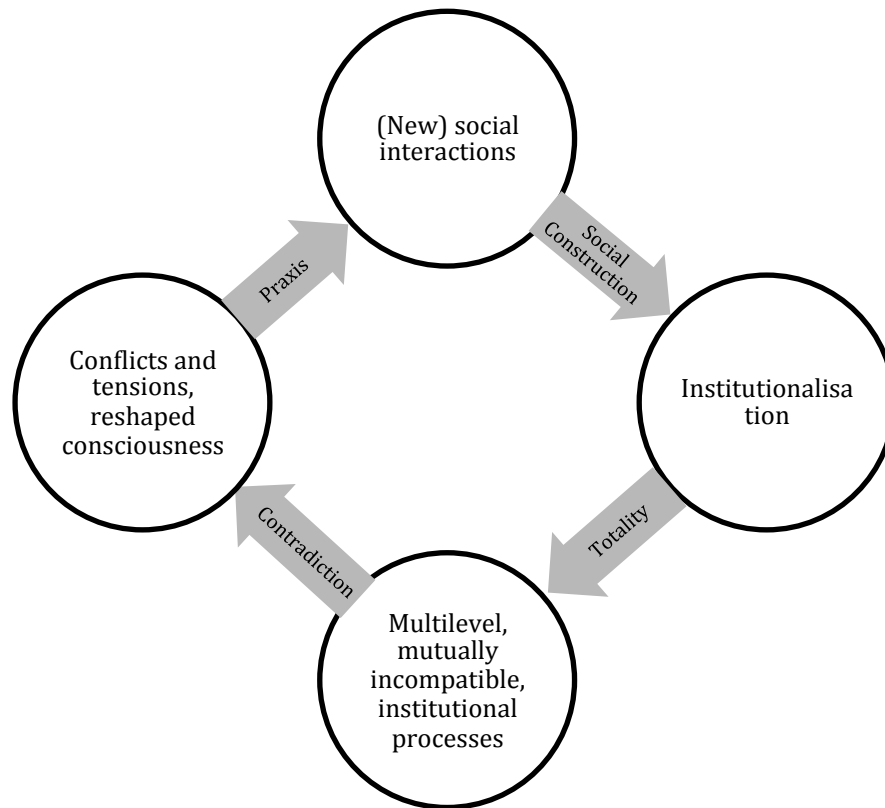
Figure 2.2: Institutional Contradiction, Praxis and Institutional Change (Seo & Creed, 2002)

Regardless of the outcome of any contestation, and whether the new structure is institutionalised or not, contestation leads to a change to the institutional structure. Any failure of the proposed new structure may result in changes to the organisational field and engender strengthened resolve against future IS innovations and/or become contracted and set aside until the contradiction develops sufficiently to warrant renewed contestation once more.

2.5.3. Theoretical Lens

Figure 2.3 illustrates the theoretical lens that will be utilised in this research to explore the empirical data. The three overlapping lenses of regulative, normative and cultural-cognitive will be used to view and explore institutional influences on behaviour, with the research exploring the institutionalisation and institutional change

process through an institutional lens, and specifically related to the adoption of IS innovations into the organisational field of the Taxco Silver Handicraft Sector. The sources of contradiction occur exogenously, endogenously or idiosyncratically to the organisational field, emerging from the consciousness of one or more agents, who are autonomous enough to attempt an action to change current institutional structures, with the result being a contestation between vested interests and these institutional entrepreneurs. The goal is to develop interpretations of the data, which rely on institutional theory.
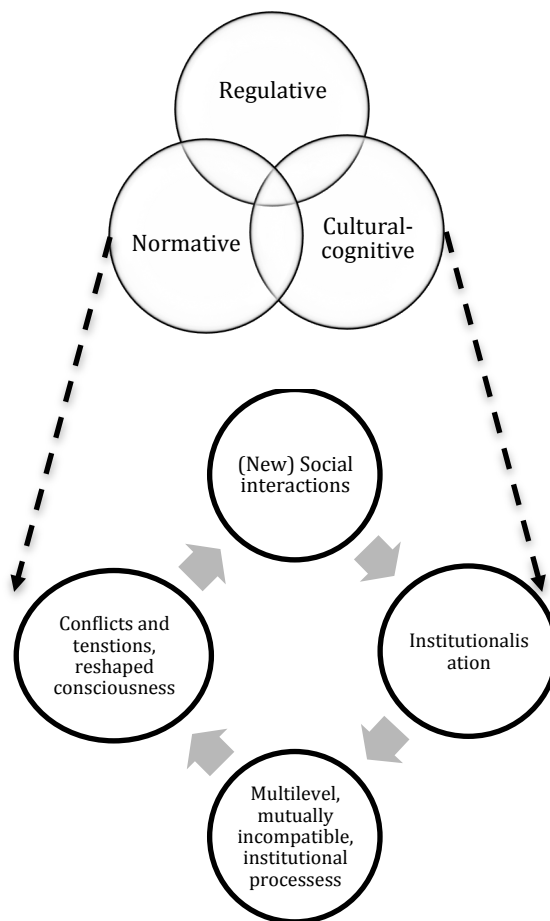
Figure 2.3: Theoretical Lens

2.6. Summary

This chapter has outlined the foundation for this research. It reviewed key IS literature on the adoption and non-adoption of ICT tools. The most widely accepted

positivist models have been scrutinised, finding them lacking appropriate tools for exploring the adoption and non-adoption behaviour of ISI4D, given their propensity to simply propose more of the same interventions that have previously failed. The focus on technically feasible and economically viable options omits an essential component, namely that the IS innovation must be institutionally permissible. The theoretical framework that has been introduced will be used to explore the institutional causes of adoption failure. Through a focus on institutionalisation and institutional change, this theoretical framework is designed to fill a gap in the understanding of the institutional contestations that result in the adoption and non-adoption of IS innovations. This theoretical framework provides the foundation of this study, guiding research design and methodology and supporting the research findings, analysis and policy suggestions presented in further chapters.

Chapter 3: Research Design and Methodology

3.1. Introduction

The research methodology outlines the approach used to collect data (Bryman & Bell, 2007). This research employed qualitative methods, with the ethnographic field research utilising interviews, observations, and the review of archival data with owner operators of MSE. The subsequent data analysis was informed by interpretive epistemology (Klein & Myers, 1999), and follows Walsham's (2006) definition of interpretivist methods, advocating that the perception of reality is a social construct, with meanings formed by inter-subjectivity, and not objectivity.

Ethnographic research is characterised by the observation of the phenomena of interest from within its natural setting, over a period of time (Bryman & Bell, 2007). Such a methodology allows for the discovery of insights through interviews, fieldwork observations, and reviewing archival data as collection techniques. In this research, archival data refers to the information that the informants had collated as a part of the MSE operations, such as catalogues, emails and websites. A case study is defined as qualitative research in which the researcher conducts an in-depth exploration of a case (Creswell, 2009); and which requires that the researcher use a variety of data collection techniques to analyse an event, organisation or sector (Myers, 2013). This method was selected over others, as it allowed for an in-depth exploration of the adoption of IS innovations within the Taxco Silver Handicraft Sector. The structure of the methodology enabled this research to move beyond simplistic explanations for the adoption of IS innovations, and to capture more complex informant perspectives, allowing the data analysis to compare competing agendas within the sector.

Figure 3.1, modified from Myers (2013), outlines the research methodology. However, while Figure 3.1 illustrates a linear process, in reality the technique is not sequential, as it relies upon multiple iterations; including revisions of earlier material, as preliminary data analysis identified gaps and emergent themes, which then required modification, such as changing the questions or returning to the field for further

observations. This iterative process thus permitted the development of more refined interpretations.

Philosophical Assumption			
Ontology		Epistemology	

Qualitative Research Approaches			
Action	Grounded	Case Study	Ethnographic

Research Approach		
Preliminary Problem	Phase 1	Phase 2

Data Collection		
Interviews	Observations	Archival data

Data Analysis	
Thematic Analysis	Hermeneutics

Written Report		
Theorising	Critical Assessment	Methodology Challenges

Thesis

Figure 3.1: Qualitative Research Design (Adapted from Myers, 2013)

This chapter is organised as follows. After the introduction, the second section discusses the philosophical foundation to this research, which is established through the review of both ontological and epistemological perspectives; which will also include a discussion of the three paradigms of positivism, interpretivism, and critical realism, and the justification for selecting interpretive research will be outlined. The third section presents qualitative research approaches, introducing four common perspectives (action research, grounded theory, case study and ethnographic), clarifying the rationale behind the selected approach. The fourth section presents the research approach, introducing the research problem, and the two phases of field research, undertaken in January 2010 and June/July 2012. The fifth section outlines the ethnographic data collection techniques, which included interviews, observations and the review of archival data. The sixth section reviews the data analysis, focusing on thematic analysis and hermeneutics, before the seventh section provides a critical assessment of the methodology.

3.2. Philosophical Foundations of the Research

This section explains the predisposition from which this research is explored, knowledge is built, and the practical implications that emerge for ISI4D, relying on the three classifications for qualitative research: positivism, interpretivism and critical realism (Myers, 2013).

3.2.1. Ontology

Ontology is concerned with the nature of social entities (Bryman & Bell, 2007). The two ontological foci outlined in this thesis are positivism and interpretivism. Whereas positivism stresses that reality is objective and can be measured, and thus that social phenomena and its meanings are independent of social agents; interpretivism proposes that reality is subjective, and that social agents are continually building social phenomena and its meanings. The ontological focus serves to frame both the research question and to determine how the research is undertaken.

Researchers who adopt an objectivist stance align with the classical approach to conceptualising organisations and culture, in which organisations use rewards and sanctions to ensure conformity (Bryman & Bell, 2007). A culture emerges as sources of shared belief systems are spread amongst all individuals within the organisation, resulting in the emergence of a social reality, with members believing that this reality is objective. By adopting a constructivist ontological position, researchers believe that phenomena and categories are in flux, and are only produced through the continuous interaction of agents, with policies and procedures dynamic, and constantly being created, established, learned, enforced, modified and forgotten. Such constant changes are the pragmatic response to new structures being developed. From this perspective, knowledge is not definitive, as objectivists propose solutions that simply reflect the current consensus, while agents assign categories allowing them to elucidate and to solve current problems. These solutions are then used as a guide when new situations arise. In this perspective, context shapes reality but is not an objective entity.

3.2.2. Epistemology

Epistemology is narrowly defined as the study of knowledge and justified true belief (Steup, 2013). Bryman and Bell (2007) propose that for business researchers, epistemology informs what is acceptable knowledge. It is important that researchers understand the foundation of such knowledge, as it structures how research is conducted and forms the basis for the validity of the findings (Myers, 2013). Such basic beliefs are framed by the discipline and orientation of both the researcher and supervisor. Within qualitative research, the three underlying philosophical assumptions are positivism, interpretivism, and critical realism (Myers, 2013). According to Myers (2013), these three epistemologies are often presented as separate entities, although other researchers posit that multiple paradigms can reside within a single world view, and therefore researchers should strive to entertain multiple paradigms within a study (Myers, 2013). Figure 3.2 illustrates the three philosophical assumptions underlying this research.
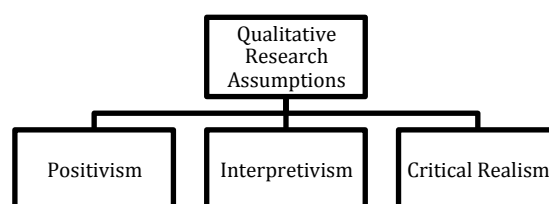
Figure 3.2 Underlying Philosophical Assumptions (Myers, 2013)

3.2.2.1.   Positivism

The following five principles describe the relationship between theory and research from a positivist epistemology. Firstly, knowledge can only be confirmed through the senses, requiring the researcher to conduct tests that are based upon the second principle of deductive reasoning. This permits the development and testing of a rational hypothesis, before knowledge is acquired by gathering empirical data. Research can be conducted objectively (value free), assuming that the researcher is able to undertake the research without influencing the test. Finally, the outcome of positivist research is a belief that true knowledge is achievable. Positivist researchers often present their research as a series of "scientific statements" (Bryman & Bell, 2007, pp.16), an approach that is most commonly used in quantitative research, with the purpose of reducing phenomena to its basic elements, and the goal of developing a hypothesis that can be repeatedly tested.

A positivist assumption allows the generation of propositions that can be tested, from which researchers can then decide how to improve a scenario or situation (Bryman & Bell, 2007). A belief in universal scientific truths results in a confidence that knowledge of best practices can be applied to other situations with the same results, and therefore a positivist would hold objectivist ontology. However, in the social world there is rarely one universal solution, because such social behaviour is imbedded within a larger cultural context, and therefore what is 'true' is relative to the frame of reference. Therefore, a positivist approach was not deemed appropriate for this study, as the literature review identified the low success rate of positivist assumptions in the predicting of behaviour.

3.2.2.2.   Critical Realism

Critical realism proposes that a real world exists, but that understanding of it is limited by the social constructs that impose constraints on human behaviour (Bryman & Bell, 2007). Individual behaviour can vary even within similar structures and mechanisms, and therefore, critical realism evokes a non-deterministic world view (Mingers, 2004), with the researcher able to hypothesise about observable events and predict possible outcomes (Bygstad & Munkvold, 2011), whilst seeking theoretically sound and pragmatic solutions. A researcher that adopts a critical realism perspective considers historical, political and economic factors within societies, and explores how such factors enable or constrain behaviour (Creswell, 2009). Theoretically this is important because it allows for a significant expansion in the possible outcomes of a variety of observable events (Bygstad & Munkvold, 2011). Finding solutions to problems is the objective of pragmatic research (Patton, 1990), which stresses the importance of using research to apply real-world solutions to real problems. The focus of critical realism is to determine to what extent societies can be studied in a similar way as in nature. Critical realism aims to keep the realist view within the ontological domain, while at the same time accepting that knowledge itself is socially constructed (Mingers, 2004); arguing that social structures are situated local to time and space, existing independently of social activities, but not of an agent's perception of the meanings assigned to those social activities (Mingers, 2004). The perspective proposes that the social system is open and interactive, and thus difficult to test, since the predicted outcomes may not occur, based on factors that are beyond the control of the researcher. According to Fleetwood (2005), critical realists assume four modes of

reality. The 'materially real' mode refers to physical entities such as oceans and mountains. Secondly, the 'ideally real' dimension refers to conceptual entities like language and discussions; while 'artefactually real' considers entities that are interpreted in various and potentially diverse ways, including items such as computers and cosmetics. Finally, 'socially real' refers to factors including social structures (Fleetwood, 2005). Critical realism assumes that there are limits to interpretations, and that all interpretations are not equal, with limits set by the material entity itself (Fleetwood, 2005). A critical realism approach was not selected, because it assumes that there are better interpretations of the adoption of IS innovations. This research followed an inductive approach, and thus a critical realism perspective would have placed unnecessary limits on the research. Conducting research with prior assumptions regarding the benefits of adopting IS innovations would have constrained the ability of informants to provide independent opinions about IS innovations, and ultimately, this research sought to gather informant opinions regarding IS innovations, and not to impose an external world view on the research.

3.2.2.3. Interpretivism

Interpretivism is an epistemological position that asserts that researchers should understand the subjective meaning that is attached to social behaviours (Bryman & Bell, 2007). According to this philosophy, people and the institutions in which they operate are significantly different from the natural world; as while the latter largely conforms to universal laws (or 'truths'), the former's laws are constantly under revision by the individuals operating within those institutions, with their value lying in the subjective meaning that is attached to interactions. Consequently, successful research requires the hermeneutical practice of using all available information in order to draw conclusions about human action (Myers, 2013). A key assumption of this perspective is that knowledge is filtered through social constructs such as language. An interpretivist researcher does not categorise independent and dependent variables, but instead attempts to build an understanding of the context in which decisions are made (Klein & Myers, 2001).

According to Walsham (1995), interpretive research draws heavily on anthropology to interpret patterns of behaviour, with the researcher relying on their own interpretation of observed social constructs. Primary data collection utilises interviews and

observation, whilst secondary data employs data analysis and existing literature, as the researcher attempts to interpret informants' answers to construct an interpretation. If this process in not fully conducted, the analysis risks reflecting an informant's hidden agenda. The anthropological tradition attempts to develop what Geertz (1973) calls "thick descriptions", with the goal not to generate truths, nor answer the deepest questions, but instead to produce an interpretation that provides a suitable record of the social construct. The interpretive approach allows for flexibility in methodology, whether contextualism, structuration or grounded theory is preferred. The interpretivist researcher attempts to remain open to emergent themes and thus avoids the rigid adherence to specific theoretical constructs. Glaser and Strauss (1967) go a step further, arguing that theory should be eschewed completely in the early stages of research. The interpretivist researcher must also decide whether to remain an 'outside observer' or to become an 'involved researcher' (Walsham, 2006). The benefit of becoming an 'involved researcher' is that informants may be more open and honest in their responses if they feel that the researcher is more fully invested in the process. However, a weakness of this approach is that spending more time in the field will not necessarily result in the production of better quality data, as the researcher may become overly socialised with the informants and thus lose academic perspective. Conversely, the outside observer attempts to have no influence on informants, although Walsham (2006) argues that even outside observers risk influencing their research subjects. This study has adopted the involved researcher perspective, a decision influenced by what Walsham (2006) calls the "researcher's starting position", as the author's existing professional experience of the sector dictated this perspective be adopted. Walsham (2006) identifies three additional challenges in field research that the 'involved researcher' status helps to overcome. Firstly, when gaining and maintaining access, existing personal connections allow for very easy access to informants, although inexperienced researchers may waste valuable time attempting to collect field data. In this research, the author's substantial professional experience and existing knowledge of the informants helped ensure the efficient use of time. Thirdly, while some researchers may find it difficult to work in other countries, the author's extensive sojourn in Mexico made it easy to conduct field research.

In summary, while the emphasis of positivist research is in explaining human behaviour in terms of static, universal laws; interpretive research focuses on how individuals make sense of their phenomenological reality (Bryman & Bell, 2007). A positivist approach defines behaviour as a one-directional, top-down process, in which fundamental laws of human behaviour guide individual action (e.g. equal opportunity is always good and will inevitably result in ICT adoption). An interpretivist approach is mindful that there are no universal scientific truths waiting to be discovered, suggesting that opinions are multidirectional, and that the behaviour of individuals in a system actively constructs social rules. For example, the essence of equal opportunity may conflict with dominant social customs and may not always result in ICT adoption. Therefore, as each context is different, researchers cannot rely on a 'best practice' approach as data will be based on the subjective interpretation of the members of the community under scrutiny (Bryman & Bell, 2007), and research must develop tools that reflect, as much as possible, the interpretation of that reality (Walsham, 2013).

3.3. The Qualitative Research Approach

Whilst there are many different ways to classify qualitative research, the essential purpose remains the same: to study a social and/or cultural phenomenon and the people involved. Myers (2013) identifies the four most common methods of qualitative research as: action research, case study research, ethnographic research and grounded theory.

3.3.1. Action Research

Action research is designed to solve problems, while at the same time increasing academic understanding (Myers, 2013). The purpose of action research is to first study and then change an organisation. The process is iterative, with interventions developed collaboratively with research participants. It is a two-stage process, comprising a diagnostic stage that analyses a given situation; and a therapeutic stage, in which an intervention is introduced and the results are subsequently observed. One of the challenges inherent in action research is balancing the action with the research, with many researchers overstating the importance of the intervention in an attempt to get their work published in academic journals. This method has a high level of

appeal, as at first sight it appears to offer the promise of solving the issue of the non-adoption of ICT tools, while also assisting in the development of IS innovations in a specific context. However, this method was not selected, as the purpose of this study was to develop an understanding of the contexts in which handicraft producers operate, in order to better understand their decisions regarding adoption and non-adoption, and a specific intervention was neither developed nor executed.

3.3.2. Grounded Theory

Grounded theory was designed to develop a theory regarding phenomena that are not well understood; based on a belief that theories are best developed from data (Glaser & Strauss, 1967). It is an inductive approach that supposes that the researcher holds no preconceived theoretical ideas prior to embarking on the research (Creswell, 2009). It differs from other qualitative approaches with its belief that there should be a constant interplay between theory and data (Myers, 2013), and thus is best suited to providing an explanation of any process-oriented description of phenomena. Its appeal for researchers lies in the possibility of generating new theories, and allows the researcher in the field to analyse data early in the research process, building a large data set to evidence any claims. However, the author's in-depth knowledge and previous theoretical reflexion on sectoral adoption and non-adoption behaviour precluded the use of this method.

3.3.3. Case Study Method

Case studies can be beneficial for both teaching and research. Research case studies are designed to increase the theoretical understanding of a phenomenon of interest (Eisenhardt, 1989); and usually follow either a critical realism perspective (Yin, 2003) or an interpretivist approach (Walsham, 2006). The value of case study research lies in its potential for both exploratory and explanatory research, allowing for the identification and understanding of real-life contexts and events that are operating at any given time; recognising that these factors are continually influencing the phenomenon of interest, but are beyond the control of the researcher (Myers, 2013). A key feature of case studies is that the boundaries of the research are not clear-cut. To be of value, case studies must convince the reader that there is an original contribution contained within the findings, or that there is a clear practical application, as is the case in most DBA research. Case studies are popular because

they have a high level of validity (Myers, 2013), as they represent real stories that should be of academic interest. Interpretive case studies may provide useful insights to researchers who seek to understand how organisations work, and to establish and maintain structures within existing contexts (Walsham, 1995). However, there are also a number of disadvantages related to conducting case study research. For example, there is often a difficulty in gaining and maintaining access to a case; establishing boundaries for what to include (and exclude) in analysis, and a potential lack of control over important factors. Despite these challenges, this method was adopted for this project, primarily given the author's extensive knowledge of the sector.

3.3.4. Ethnographic Research

According to Myers (2013) Malinowiski was one of the first proponents of researchers immersing themselves in different cultures, learning the language, and actually living within the community. This approach became known for producing intensive fieldwork, and is now referred to as the British anthropological tradition (Myers, 2013). This thesis is following the Chicago sociological tradition, which is defined as research in which the observer is partially known to the informants prior to engaging in the fieldwork, and is not required to completely immerse themselves in the community that is being studied (Myers, 2013).

Ethnographic research tends to be underpinned by an interpretivist paradigm. It is one of the most in-depth research methods possible, as it relies on observation and fieldwork in order to develop a deep understanding of a culture (Myers, 2013). This method allows the researcher to gain rich insights into many aspects of the business environment, because, as Myers (2013) states, the researcher can go "where the action is" and spend significant time with research subjects. This time spent in the field allows for the discovery of unwritten rules and norms, which is often key to unravelling how socially constructed reality impacts upon behaviour, although the commitment required to spend considerable time in the field is one of the limitations of this method.

According to Myers (2013), there are three major branches of ethnographic research: the holistic school, the semiotic school and critical ethnography. The holistic school

asserts that the researcher must reject all *a priori* expectations and assumptions, and approach the research question afresh in order to fully absorb the culture of the community. In contrast with other methods, which advise against researchers becoming too involved in their investigations, ethnography actually demands that researchers develop empathy with the community under investigation.

In contrast to ethnography, which requires empathy on the part of the researcher, the semiotic school proposes that such a bond is not required (Geertz, 1973), and rather, the researcher should focus on the subjective meaning of words, actions, symbols and institutions, with research exploring the inter-relationship of each of these components, as well as the whole. What emerges from semiotic analyses are thick descriptions of the phenomena, which help the researcher to understand and describe the context.

Critical ethnography proposes that the research process emerges from the dialogue that occurs between the researcher and informants, propounding that the social structure is socially constructed within contexts of power. This approach allows the researcher to explore the hidden agendas, power and politics that can impede behaviour. For example, if a male informant states that his daughter is in charge of adopting ICT tools and developing IS innovations, such a statement could be taken at face value, or instead the researcher could examine the covert existence of gendered roles. This approach requires that routine assumptions be questioned.

There are a number of limitations inherent in the use of ethnographic methods. The first is that the research tends to take longer (Myers, 2013). This type of research is also difficult to get successfully publish in peer-reviewed journals, as the all-encompassing nature of the research conflicts with the requirement from some journals for findings to focus on one key point. A broader set of criteria is also needed when evaluating ethnographic research, and these criteria should allow for an assessment of the overall contribution of the research, the richness of insights gained, an assessment of whether the findings are substantiated by the data, and a decision as to whether there is sufficient information about how the research was executed (Myers, 2013; pp. 99-100).

Initially, it was assumed that this research would adopt the holistic school method, as the author has a strong empathy for the artisans and their struggles to work their way out of poverty. However, it would be unrealistic to presume that with 25 years of experience and implicit judgements regarding Mexican life, the author could become a blank slate. For example, when he started buying from the sector, the author was just 18 years of age, and yet was afforded the title of *Don Juanito*, a title that dates back to the caste system of the 19th Century. Whilst initially considered unimportant, the application of this term reflects an acknowledgement by artisans of an unequal relationship. Therefore, while the author's relationship with the sector is extensive, with connections to many informants, ultimately his 'social reality' is significantly different, making it impossible to ever fully understand the 'social reality' of artisans, and instead the author's role is to build useful and valid interpretations of the data.

In consequence, a combination of critical ethnography and a semiotic approach is the most appropriate method for this study, since it allows for the exploration of the meaning of both words and actions; while the author's separation from the community provides an external perspective on the power centres and hidden agendas that may not be fully acknowledged by informants. The in-depth access to informants available provides a rich data set from which to explore how institutions impact upon ICT adoption and the development of IS innovations.

Table 3.1 identifies four of the most common methods used in qualitative research (Myers, 2013), also presenting the associated methods, mode and purpose. The last column notes which methods were used in the current research.

Method	Mode	Purpose	Research method selected
Action research	Intervention	To solve practical problems	No
Case study	Observation	To study people by exploring real life situations	**Yes**
Ethnography	Fieldwork	To develop a deep understanding and learn from informants	
Holistic school		Use empathy and identification with the	No

		social groups	
Semiotic school		No empathy required. Search out thick meanings of words, images, and actions	**Yes**
Critical		Question assumptions of social life	**Yes**
Grounded theory	Various	Theory development	No

<div align="center">**Table 3.1: Examples of Qualitative Research**</div>

3.3.5. Reasons for Adopting an Ethnographic Interpretive Case Study Approach

This thesis combines case study and ethnographic research approaches. This combination allows for the exploration of adoption and non-adoption in IS innovations within the sector. According to Myers (2013), case study research involves studying people, while ethnographic involves learning from people. The case study is the Taxco Silver Handicraft Sector, and the data collection method involves studying how informants interpret the introduction of ICT tools and the development of IS innovations.

Any researcher must develop an understanding of how a sector functions prior to attempting to explore informant behaviour within it. Informants rely on subjective interpretations that are historically contingent, in order to make sense of the introduction of ICT tools. The data collection in this study answers the call from Walsham (2013) to engage in trans-disciplinary research to better understand the context in which the phenomenon is occurring. This research combined the data collected alongside the author's reflection on the context in order to develop an interpretation of the outcomes. The ethnographic method is necessary to understand the meanings that informants are applying to the introduction of ICT tools; whilst observing the development of IS innovations requires an extended stay in the sector. The selection of both case study and ethnographic methods allows for an active discussion of the phenomena herewith.

3.4. The Research Approach Adopted

The data collection in this study consisted of two stages: Phase One, which occurred in January 2010, and Phase Two, which took place between June and July 2012; with preliminary findings submitted to conferences for both public discussion and feedback. Table 3.2 presents the research timeline.

Date	Data collection / analysis	Public discussion
2010	Preliminary identification of problem	**Conference Paper** World Computer Congress, Brisbane, Australia (September)
2011	**Phase One (January 2010)** 34 semi-structured qualitative interviews with MSE owners One qualitative interview with government official	**Presentation** Manchester Business School, DBA seminar, Manchester (January) **Conference Paper** International Federation of Information Systems (IFIP), Nepal (May)
2012	**Phase Two (June/July 2012)** 24 semi-structured interviews with MSE owners	
2013		**Conference Papers** International Federation of Information Processing (IFIP), Jamaica (May) International Consortium of Innovation and Entrepreneurship Research (ICIER), Brazil (October) **Workshops** MISQ workshop, Italy (November) JIT workshop, Italy (November)

Table 3.2: Research Timeline

3.4.1. Preliminary Identification of the Area for Scrutiny

Work on the study commenced in 2007, when broad base research problems and potential questions were identified. The initial intention of the research was to understand adoption and non-adoption behaviour, and the role of individual agents in

the process. There followed an extensive literature review regarding the adoption of ICT tools, to understand current issues in the area. The initial paper, presented at the World Computer Congress in Brisbane in 2010, focused on the potential of ICT tools to connect handicraft producers with global markets.

3.4.2. Phase One: January 2010

Phase One was designed to investigate the adoption of ICT tools in the Taxco Silver Handicraft Sector, and explore whether ICT improved sectoral efficiency. This phase discovered all informants has access to cell-phones and 32 out of 34 had broadband within their MSE. A combination of methods was used to select the informants, with a total of 34 individuals interviewed during this phase. A convenience sample of four informants was selected, who were MSE that had an existing professional relationship with the author, with the remaining 30 informants randomly selected at the Saturday market. A random number generator was used to select the numerical pattern of MSE approached, with the number generated being 37. Starting at the left end of the bus station and walking down the street, the author began counting individuals selling jewellery. When individual 37 was reached, the seller was approached and asked if they were willing to participate in an interview. The second Saturday, selection started from the approximate place where identification had finished the week before. While time constraints prevented the canvassing of the entire market, over the course of two Saturday markets, 30 informants were successfully recruited, who then became the basis of Phase One, with these 30 informants providing a rich data set for analysis. A total of ten MSE initially approached did not want to participate. When individuals agreed to take part, a pre-screening test was administered to ensure that they were owner operators of MSE. This step resulted in the rejection of two potential informants, as they turned out to be resellers and not artisans.

The interviews commenced on the following Monday. Interviews were scheduled and grouped by proximity, with MSE from the same village interviewed on the same day. After exchanging pleasantries and discussing the weather, the journey, and the ease of finding their home, the interview would commence. The interviews followed a semi-structured format, allowing some scope for deviation. The interview began by gathering general demographic information, before proceeding to explore four aspects of the MSE: firm structure, products, strategy, and operations. At the end of the

interview, time was set aside for unstructured conversation with the informant. The interview consisted of 48 questions and can be found at Appendix A.

The demographic information appears in two parts of the interview, at the beginning and at the end, with questions about income and sales located at the end of the interview guide. This change was made during the piloting phase, when it became clear that informants were reluctant to answer questions about sales and income at the beginning of any interview, and consequently, questioning commenced with issues of education level and residency. This change proved effective, as only one informant refused to answer the financial questions at the end of the interview, with the application of proxy measures for income later revealing that this was in fact the richest informant. These proxy measures were used as an additional way to determine income, with the questionnaire including questions about the presence of durable goods (microwave, fridge, stove, car). Such possessions were used as a proxy for income if information regarding income was not forthcoming.

At the end of the semi-structured interview, qualitative data collection began, permitting informants to provide their own insights into the sector. The format was left unstructured, taking the form of a conversation about the interview questions and other aspects of the sector. It was during these conversations that the author realised that even with 25 years of experience, there remained a gap in understanding about the sector. Analysis of this data revealed a rich data set to explore sectoral behaviour.

3.4.3. Phase Two: June / July 2012

Based on the findings of Phase One of the research, Phase Two was modified to allow the data to be gathered in a more natural and conversational way, with the original 48 questions reduced to just nine. Each question dealt with a specific aspect of MSE operation, and were more opened ended, allowing the informants greater freedom to say what they wanted (Myers, 2013); also asking questions such as 'can you explain how the silver market functions?' This approach also attempted to minimise any influence on the answer(s) provided. The interview guide was approved by the University of Manchester, and included a consent release form (Appendix C), pre-screening questionnaire (Appendix B), and full interview guide. The interview guide reflects a standard approach, ensuring that others will be able to conduct similar

research in the future. The English version of the interview guide can be found at Appendix B.

The second phase of data collection was conducted over three weeks during June and July 2012, involving 24 informants. The success of the qualitative interviews undertaken in Phase One prompted the adoption of a snowball strategy to identify informants. A snowball strategy is a form of convenience sample that is appropriate to use when researchers require inside information (Bryman & Bell, 2007). The strategy relied on personal connections to identify other MSE, and specifically those defined as 'entrepreneurial MSE'. The criteria adopted to determine entrepreneurial MSE was to identify MSE that were more active in designing new products, rather than relying on the piracy of existing designs. The rationale for adopting this approach is consistent with the literature, which identified a need to find institutional entrepreneurs (Powell & DiMaggio, 1991) in order to develop new structures. Potential informants were initially contacted by telephone, a strategy that proved more successful than the one used in Phase One, with only one MSE refusing to participate. As in the first data collection phase, interviews were organised according to the community in which informants lived, improving the efficiency of data collection and permitting multiple visits per day. The interviews were conducted in Spanish and lasted some 30 minutes, consisting of semi-structured questions covering the nine main topics. This technique enabled the author to not only ask existing questions, but also allowed further discussions to emerge, based on informant's opinions about what they believed important. This facilitated the exploration of relevant issues from multiple perspectives, allowing informants to explain at first-hand how the sector functions. This methodology was critical to the goal of examining the historical, political and economic institutions that frame social construct, meanings and shared understandings within the sector (Klein & Myers, 1999). In addition, the adoption of a semi-structured interview format was successful in acquiring a high level of informant voice.

3.5.   Data Collection

The data collection technique selected for gathering the empirical data was ethnographic field research (Myers, 2013). The data collection process is not a

sequential process of interviewing, observing and reviewing archival data, but instead varies according to the dynamics of the situation. However, typical data collection began with an initial interview, which was followed by observations, follow up questions and the review of any archival data. The review of archival data was prompted by any informant revealing that they had used IS innovations in their enterprise. An extended period of observation (between two to six hours) often led to further follow-up questions, as the author further scrutinised a phenomenon. The method provided the flexibility that allowed for a dynamic data collection technique. The informants were actively engaged in the process, by telling stories, talking about their ambitions for their MSE, their struggles in making a living and their dreams for a better future for their children; all of which provided deep insights and a rich data set.

3.5.1. Fieldwork

Fieldwork in qualitative research is defined as data that is gathered 'in situ', with a focus on creating a natural setting (Myers, 2013), with the goal that the researcher become personally immersed and involved in the situation in order to gain some level of understanding of the on-going social activity (Wolcott, 2005). As has been shown, the fieldwork in this study consisted of two phases. Whilst some may argue that two short stays in the field are insufficiently short for ethnographic research, the interview data was combined with both observations and the author's personal heritage and professional experience. The level of involvement in the sector allowed the author to gain informants' trust and forms the basis for the interpretation of the interview data. This personal and professional experience allowed for in-depth access to the people and issues that would be potentially unavailable to other researchers, producing a rich data set that strengthens interpretivist data analysis. During the fieldwork phase, the author was even invited to make some jewellery, as shown in Image 3.1.

Image 3.1 Learning to Make Jewellery

Ethnographic fieldwork requires access to the research subject, with the level of access gained significantly impacting upon the quality and nature of data that are collected (Myers, 2013). Ethnographic fieldwork consists of three phases: planning, collecting and analysing (Jackson, 1987).

In the planning stage the researcher decides what they are going to do and why. As has already been discussed, this research selected fieldwork, due to the author's existing extensive involvement in the Taxco Silver Handicraft Sector and corresponding access to informants. The plan was to meet the MSE at their home workshop, to enable the interview to be conducted in the natural work environment, whilst also permitting extended collection of observational data.

The second stage is the collecting phase. This involved visiting the informants at their home-based MSE. The subsequent interviews were digitally recorded and professionally transcribed. The semi-structured format provided scope for the informants to impart the information that they considered important. This approach proved particularly successful, as many times, multiple members of an MSE sat around the table and contributed their insights. Informants were observed as they went about their daily business, with follow up questions asked to clarify any observed behaviour that warranted further explanation. The data collection often extended over many hours, and the author was regularly invited to stay for lunch or supper. In keeping with rural Mexican traditions, the author was also almost always offered a *mezcalito*, a shot of hard liquor similar to tequila.

The final stage involves analysing the data; which involved reflecting on each informant's responses by listening to the digital recording whilst reading the transcripts; developing the themes that were further categorised and summarised. At this point, discernable patterns began to emerge, such as the gendered assignment of IS innovations, and a female informant's identification of male languor as an issue constraining the development of the sector. This process allowed for the emergent themes to be positioned within well-established Mexican institutions, for example, gender roles were situated in the institution of *machismo* and male languor into the institution of *mañana*. The process allowed for the reflection of the data through historically contingent institutions. This process enabled the research to situate the adoption of IS innovations within a broader historical context.

The main advantage of ethnographic fieldwork is that it permits the researcher to gain an in-depth understanding of the social context in which behaviour is occurring (Myers, 2013). Disadvantages include the often small size of the research pool, the time commitment required, and the potential difficulty of maintaining access to informants for sufficient time. These challenges were overcome through regular travel to Mexico and drawing upon existing extensive connections within the sector, both of which ensured sufficient access to the required informants during both data collection phases.

3.5.1.1. Interviews

Interviews are one of the most important data gathering techniques, best conducted in the informants' native language. A good interviewer prompts, guides and listens; while the informant's use of language should also be analysed, as it provides a glimpse into the world of the informant (Myers, 2013).

Myers and Newman (2007) provide an eight-step interview guide, outlined in Table 3.3, which formed the basis of this research. The third column outlines how this interview guide was applied to this research.

Concept	Description	Application in this research
Drama	The interview is drama, with stage, props, actors, audience,	Interview guide, costume, interviewer, and informants in

	script and performance	Taxco, Mexico
Stage	Setting and social situations. The use of various props	Most informants were interviewed within their home based MSE. Image 3.1 shows the author wearing a Guayabera, which is a traditional Mexican shirt. It was used as a prop to signal that he was part of the Mexican culture
		Phase One: the data was collected using pen and paper
		Phase Two: the was data was collected using pen, paper and digital recording
Actor	Both interviewer and informants as actors	Author is genuinely interested in the informants and their opinions
Audience	The audience is the interview, informant and the readers of any output (thesis, conference papers and presentations)	The audience expanded to include members of the family, who at times became actors
Script	The script guides the interview	The informants enriched the script through *ad libitum*
Entry	The first impression	Author speaks Spanish with a Mexican accent. The first impression is surprise, with the use of language becoming a comfort
Exit	Leaving the stage and perhaps preparing for a second act	The exit was an end, but there was almost always an open invitation to return
Performance	The interview produced a good or bad show	The performance involved lively conversation, and was well received. The author was often invited to dine with informants and almost always offered a beer

Table 3.3: Eight Step Interview Guide (Myers & Newman, 2007)

3.5.1.2. Observation

Observation is the process of watching informants, and as such, is an important part of ethnographic research. The data collection in this study included the observation of informant's behaviour after the initial interview. During this observation phase, the author asked follow-up questions when the observed behaviour required further explanation. This step involved two distinct elements: the interaction between an informant and other members of the MSE; and the interaction between an informant and their suppliers, with both elements requiring the noting of the content, symbolism and structure of the interaction. The author's goal during the observation phase was to

minimise any involvement, allowing informants to contribute data in a natural setting with minimum interference. This approach proved useful in the data analysis phase, and would have gone undetected if data collection had ceased after the interview stage. All observations took place within social settings, which aligns with the essential elements of fieldwork.

3.5.1.3. Review of Archival Data

The third strategy for data collection was the review of archival data. After the observation phase, informants who had confirmed ICT use were asked to provide archival evidence of such use, including emails, websites or a digital catalogue. The Hawthorne effect proposes that people behave differently when they are being observed, and that they will try to please a researcher (Myers, 2013), leading to a tendency for informants to provide the answers that they believe the interviewer wants to hear. For example, a number of informants stated that they had websites, digital catalogues, or corresponded via email. Mindful of the need not to offend informants, the subsequent request for archival data was done with great care. For example, an informant may have indicated that they had created a digital catalogue of their jewellery, but when asked to present the evidence, stated that the computer was not working at the moment. In such an occurrence, the author did not pursue the issue.

3.6. Data Analysis

Qualitative researchers often make clear distinctions between data collection and data analysis, and yet the iterative process in the various phases of data collection means that the two phases are clearly intertwined (Myers, 2013), as preliminary data analysis will inform subsequent data collection. This was evident in this research, as the interview guide used in Phase One was improved upon in Phase Two.

3.6.1. Thematic Analysis

The analytical strategy emerged from the interviews and observations. Thematic analysis involves identifying patterns of recurring themes across multiple data sets (Bryman & Bell, 2007), and is one of the simplest ways to analyse qualitative data. The thematic analysis can be a word or short sentence that summarises the data, that will be placed into that emergent theme or silo. This process allows for flexibility in

categorising and re-categorising the emergent themes. The development of the themes involved relating the data to institutional theory to help explain the phenomena, and therefore the theorisation and thematic analysis are closely linked, with themes and theories changing over time. As themes were developed, they were presented as conference papers, with the aim of initiating a public discussion and exposing the themes to a broader audience, in order to obtain as much feedback as possible. The research was therefore presented at four conferences and one paper development workshop. The preliminary research findings were also made available to all informants, with the purpose of providing access to the results and strengthening interpretations by generating further discussions.

The first paper was presented at the World Computer Congress in Brisbane in September 2010. This conference marked the first public presentation of the theoretical construct for the adoption of IS innovations within the Taxco Silver Handicraft Sector, and had a strong positivist approach. This approach was subsequently abandoned, as the initial data analysis indicated that adoption behaviour was not following a predicted pattern, as indicated by the robustness of the qualitative data.

The second paper used Porter's diamond (1990) as its chosen methodology, with initial analysis involving sorting the data according to Porter's diamond on determinants. This data sorting required placing the data into the four main elements of the diamond: firm strategy, customers, suppliers, and factor endowments; with the purpose being to explore each theme as they related to the adoption of IS innovations. This paper was presented at the IFIP conference in Nepal in May 2011. This second approach was also discarded when, under scrutiny, the Taxco Silver Handicraft Sector was found to be missing key elements of the diamond framework.

Further development of the themes led to the adoption of the Tolbert and Zucker (1996) framework regarding the institutionalisation of IS innovation. This framework employed a four stage process to explore the institutionalisation of IS innovations. The first stage is the introduction of the IS innovation, the second stage is reached when the sector begins to habitualise it. The third stage involves the objectification of the IS innovation, before finally there is sedimentation. Table 3.4 outlines the four

stages and the categories that were used. This paper was presented at the IFIP conference in Jamaica in May 2013, and at the JIT paper development workshop in Milan in December of the same year.

This approach was eventually jettisoned when the data revealed that the MSE were not adopting IS innovations into their operations.

Process	Categories
1) IS Innovation	
	Technological change
	Legislation
	Market forces
2) Habitualisation	
3) Objectification	
	Inter-organisational monitoring
	Theorising
4) Sedimentation	
	Measuring outcomes
	Interest group advocacy
	Interest group resistance

Table 3.4: Four Stages of Institutionalisation (Tolbert & Zucker, 1996)

The fourth paper was presented at the ICIER conference in November 2013. This paper used institutional logics to explain informant behaviour in relation to adopting IS innovations. The research helped to develop understanding of historically contingent institutions in Mexico, which were then applied to the Taxco Silver Handicraft Sector. It was this paper that helped crystallise the emergent themes that are applied in this thesis.

In summary, the public presentation and iteration process was as follows:

Pilot Project, DBA coursework. Manchester, UK; 12 February 2010.

World Computer Congress; Brisbane, Australia; 20-23 September, 2010.

International Federation of Information Systems Working Group 9.4; Nepal; 22-25 May, 2011.

International Federation of Information Systems (IFIP) Working Group 9.4; Ocho Rios, Jamaica; 19-22 May, 2013.

Conference of the International Consortium of Innovation and Entrepreneurship Research (ICIER); Rio de Janeiro, Brazil; 21-22 November, 2013.

Journal of Information Technology Paper Development Workshop; Milan, Italy; December, 2013.

Seminar, Centre for Development Informatics; University of Manchester, UK; 14 May, 2014

Over time, the emergent themes were developed further, with a regular review of the data identifying the process of thematic development. For example, two themes developed for conference papers were 'community responsibility' and 'community support network'. Upon reflection and further reading, these themes were further developed and interpreted to align with the institution of *el pueblo*. The analysis also required the application of a more sophisticated method to scrutinise existing institutions, which resulted in the increased use of institutional theory, and in particular, Scott's (2008) three pillars (regulative, normative, and cultural-cognitive) to explore existing institutions. However, relying on Scott's three pillars alone was not sufficient, as the analysis also required the exploration of the contestation between existing and new social structures. This led to the inclusion of the Seo and Creed framework (2002) to analyse the contestation that occurs when new structures are introduced into a sector. This immersion in the data, leading to an iterative process of reading, writing and critical self-reflection, resulted in the final formation of the themes inspired by institutional theory.

3.6.2. Hermeneutics

According to Myers (2013), hermeneutics suggests that an effective way to analyse data is for the researcher to understand the subjective meaning of the data to informants. Such an approach is valuable when data appears to be confusing or contradictory, as it extracts any hidden meaning present within the inter-relationships that exist between informants and the sector under investigation. In this study, this was accomplished through analysis of individual interviews as well as the entire data set. The comparison of separate responses (text, observations and archival analyses)

with the whole enabled a fuller meaning to emerge. The author's existing professional experience in the sector, coupled with an ability to speak Spanish, was an instrumental part of data collection. Informants were always surprised that a *gringo* spoke Spanish with a Mexican accent, and this knowledge of the language and its usage in Mexico guaranteed an understanding of any nuances in speech that would not have been obvious to a non-native speaker.

3.6.3. Theorising

The data was organised and re-organised into themes, with data from interviews and observations constantly compared to each other and with literature regarding Mexican institutions. This approach is considered empirically valid, since it permits individual data sets to be generalised across a sector (Eisenhardt, 1989). The final themes that emerged were those of *caciquismo*, *confianza*, *el pueblo*, *el artesano*, *machismo*, *mañana*, *egoismo* and *fatalismo,* each of which would be clearly identifiable to Mexicans as deeply embedded institutions. In the process of theorising, the research also follows an interpretive approach. The data was analysed using the theoretical framework outlined in Chapter 2, drawing upon the Seo and Creed (2002) concepts of contradiction and praxis to explore the competing world views regarding the introduction of ICT tools and the development of IS innovations. Informant behaviour is analysed using Scott's (2008) three pillars of institutions (regulative, normative and cultural-cognitive). The data was constructed into an interpretation, which was then compared and contrasted between the theory and the findings, with the role of the researcher being to build meaning from the data (Walsham & Sahay, 1999).

3.6.4. Generalisation

Walsham (1995) proposes that the validity of a case study is developed through logical reasoning rather than statistical generalisation. Furthermore, interpretive case studies are useful in developing concepts, providing rich insights and identifying context-specific implications from the findings. This approach provides generalisations related to a particular situation that can then be applied to a broader social structure. Walsham (2006) believes generalisation is achievable from a single case study, with four elements that permit such action: "data to description, from description to theory, from theory to description, and from concept to theory"

(Walsham, 2006; pp.322). This methodology is designed to capture both data and theory from the development of descriptions, which is accomplished through the application of trans-disciplinary approaches. In this interpretive approach, generalisations are facilitated by the methodology selected. The author's experience and the high level of interaction with informants permitted generalisations to develop from the interplay between the emergent themes and the existing literature.

3.6.5. Criteria for the Evaluation of Research Methods

Myers (1997) outlines six criteria for evaluating interpretive research. This study has made both practical and theoretical contributions to the field of ICT adoption, which will be presented in Chapter 6. The empirical findings offer a rich insight into the influence that the institutions of *caciquismo*, *confianza*, *el pueblo*, *el artesano*, *machismo*, *mañana*, *egoismo* and *fatalismo* have on the adoption behaviour of MSE. The methodology clearly meets the six point criteria as determined by Myers (1997).

Criteria for Interpretive Study	Methodology of this Study
Does the research make a contribution to the field? And has the researcher developed new concepts or theories?	The study has made theoretical and practical contributions to the field, as outlined in Chapter 6.
Does the author offer rich insights into the human, social and organisational aspects of IT and their application?	The empirical findings presented in Chapter 5 offer a rich insight into the role of institutions in influencing the adoption of IS innovations.
Does the research contradict conventional wisdom and provide richer understanding?	The study contradicts positivist assumptions surrounding ICT adoption, and provides richer insights into the contextual influences of adopting IS innovations within the handicraft sector.
Has sufficient quantity data been collected for insights to emerge?	The data was collected from 68 informants during two data collection phases.
Are multiple viewpoints and alternative perspectives represented?	The data collection includes data from various informants (both male and female). The interpretation relies on both the data and the author's experience.
Has sufficient information about the research method and process been presented?	Chapter 3 outlines the rationale for the research methodology adopted in this study.

Table 3.5: Six Criteria for Evaluating Research Methodology (Myers, 1997)

In addition, this research meets Klein and Myers' (1999) seven principles of interpretive field research. Table 3.6 summarises these seven principles, with the second column identifying how these seven elements were met.

Principle	Approaches taken in this study
Hermeneutic cycle Suggests that all human understanding is achieved by iterating between the individual and the whole.	The data analysis develops its overall understanding from individual data sets and their relationship to the whole.
Contextualisation Requires critical reflection regarding the social and historical background of the research setting.	The data analysis drew on consideration of the role of historically developed institutions upon the adoption process.
Interaction between the researcher and subjects Requires the researcher to consider how the data was constructed, through the interaction between the researcher and informants.	The author's professional experience provided unparalleled access to informants; whilst the data was also co-created.
Abstraction and generalisation Involves relating idiographic details gained through data interpretation and the application of principles one and two, to concepts that characterise the nature of human understanding and social action.	The author's childhood in Mexico, coupled with occidental experience provided interpretations and generalisations that draw on both heritages.
Dialogical Reasoning Requires an awareness and sensitivity to possible contradictions between theoretical preconceptions and actual findings, necessitating subsequent cycles of revision.	Existing literature provided an initial understanding of the context and helped guide the development of the theoretical framework, which was modified multiple times.
Multiple Interpretations. Requires an awareness of possible differences in interpretations amongst research participants.	The interviews relied on data from many different informants. The emergent themes and narratives analysed in the findings at conferences demonstrates that the data analysis has employed multiple interpretations.
Suspicion Requires an appreciation of possible biases and systematic distortions in the narratives collected from participants.	The research was suspicious of both biases and the Hawthorne effect. The research attempted to minimise this by drawing on both interview and observational data.

Table 3.6: Principles for Conducting Interpretivist Research (Klein and Myers, 1999)

The hermeneutic cycle proposes that all human understanding is achieved by iterating between the individual and the whole, a principle that was applied throughout the data

collection period. By relying on multiple sources, including the data collected from the 48 informants' interviews, helped develop an overall understanding of the phenomena. The cycle involved scrutinising existing literature while developing the theoretical framework, which was constantly updated during the research process.

The process of contextualisation requires critical analysis of both the social and historical background to the research setting. In this study, this was accomplished through the use of trans-disciplinary research in order to develop an understanding of the historically contingent institutions, thus allowing deep reflection of the impact of these institutions on the adoption of IS innovations.

The principle of interaction between the researcher and subjects requires the researcher to reflect on how the data was constructed, and the interaction between the researcher and informants. In this regard, the author's long-standing professional and personal experience of the sector was critical in the construction of the data, although it became apparent during the data collection phase that it was both desirable and necessary to permit informants a more active role in the creation of the data, leading to the data being co-created.

The principles of abstraction and generalisation demand that the process of data interpretation reveals the idiographic details. It is through the application of these principles that theoretical and general concepts are developed, which describe the nature of human understanding and social action. The interpretivist approach adopted in this study relied upon multiple iterations of data analysis. This approach overrules the suggestion made by Glaser and Strauss (1967) to avoid the use of prior theories; relying instead on Walsham's (2006) suggestion that a broad grasp of theoretical ideas is worthwhile in interpretivist research. This method proved useful in the development of the emergent themes, which would not have been possible without extensive background research about Mexico.

The principle of dialogical reasoning requires that the study be sensitive to possible contradictions between theoretical preconceptions guiding the research design, and the actual findings, with subsequent cycles of revision. This research demonstrates such a high level of sensitivity, most obviously evidenced in the willingness to switch

from a positivist to an interpretivist approach once contradictions were identified between the empirical data and the theoretical position. This dialogic reasoning continued as the theoretical framework was modified.

The principle of multiple interpretations requires a similar sensitivity to the possible differences in interpretation amongst research participants. The findings highlight a number of different interpretations from informants. For example, the findings explore the different views regarding the causes of poverty amongst MSE, and between men and women.

The principle of suspicion requires an awareness of possible 'biases' and systematic distortions contained in the narratives collected from research participants. This research was aware of the possibility of both the 'Hawthorne effect' and informant 'biases'. For example, the interview data found that a high number of informants responded positively to the question about using ICT tools in their MSE; however, the observational data found no such use. The findings section in Chapter 5 explores these issues and suggests that a modernity bias (Andrade & Urquhart, 2012) resulted in the affirmative response to verbal questioning.

3.7. A Critical Assessment of the Research Methodology

The research methodology adopted faced several challenges that required specific action be taken to ameliorate their possible impact.

3.7.1. Gaining and Maintaining Access

The biggest risk faced by the study was the low level of trust that permeates Mexican society (Aguilar, 1984). From the outset, there was a possibility that research informants would withdraw their co-operation. This risk was minimised by using existing business contacts to identify initial informants. These informants then became co-producers of the study, as the author relied upon them to identify any problems inherent in the survey instrument. These initial informants also became some of the first interview subjects. Informants were also asked to identify additional informants, a strategy that proved successful, with only one MSE refusing to participate.

3.7.2. Sharing of Relevant Data

The second risk inherent to interpretivist research is that the use of semi-structured interviews places a higher level of reliance upon informant voice. This raised the possibility that informants may be unwilling to divulge personal information.   In reality, this was not an issue, and in fact, the opposite was often true, with informants responding positively to the opportunity to provide their opinions. The subsequent lively discussions considered how the emergent themes of the study contributed to the inability of the sector to develop.

3.7.3. Cultural-Cognitive Barriers

A further risk is that the cultural prohibition against egoism may constrain how much information informants are willing to share regarding the successful adoption of ICT tools. In reality, informants did not appear constrained by the fear of appearing egoistic, and many participants responded positively about their use of ICT tools, although most were unable to provide any archival evidence to support such claims.

3.7.4. Findings of Limited Value

Transforming raw data collected and the various interpretations constructed into the written form can be challenging. According to Myers (2013), the final written report is the result of a complex decision making process, with decisions about what to include ultimately based on the study's audience. The audience for this study is in the first instance research supervisors; and secondly, the conference presentations and workshops. DBA research is different from PhD investigations, as there is less focus on the potential theoretical contributions, and instead an expectation of the practical application of the research, with the study designed to bridge the gap between theory and practice.

The final challenge comes from the potential for author bias, especially given the author's existing experience in the sector. This challenge was overcome by presenting the research for academic scrutiny at conferences and in conversations. Specifically, the input of Latin American academics was secured at two conferences (IFIP, Ocho Rios, Jamaica 2012 and ICEIR, Rio, Brazil 2013).

3.8.   Summary

This research adopts a constructivist ontology, which posits that a phenomenon is developed through the interaction of agents. As such, the understanding of social structures requires the consideration of how structures are developed and institutionalised; in this case the development of IS innovations, but also an examination of how phenomena may change in response to the introduction of new innovations, in the form of ICT tools.   Conducting an ethnographic case study permitted the in-depth exploration of the sector, while also ensuring that there was sufficient time to collect the data. The interviews proved useful as they allowed informants to help build the data, through the expression of their opinions.   The observation phase allowed the author to observe how informants interact with one another, while the review of archival data validated the interview data.   In recognition of the fact that informants may have their own agenda, interpretivist assumptions were incorporated into the research.   The ethnographic approach selected was semiotic, and into this no sympathy was required from the author.

Chapter 4: Case Description

4.1.   Introduction

This chapter presents the case study description of the Taxco Silver Handicraft Sector, in order to situate the case n prior to analysing and discussing the research findings in Chapters 5 and 6. Echoing the belief that institutions are historically contingent, this chapter will use institutional logics (Alford & Friedland, 1985), concentrating specifically on the historical background of the institutions of the family, religion, the state, democracy and the market to provide information regarding the traditions in which the adoption of IS innovations is occurring.

This chapter is organised into five sections. After the introduction, the second section will review institutional logics (Ajzen & Fishbein, 1977), providing background information on the Mexican revolution and the establishment of institutional logics during this era. This contextual data will be used to compare the historical situation with current neo-liberal institutions that have influenced official policies in Mexico since the 1980s (Harvey, 2006). The third section will provide a description of the Taxco Silver Handicraft Sector, including demographic information about the town and the development of the silver handicraft market over time, including information regarding the structure of the market and the government policies that have been introduced in an attempt to develop the sector.   The final section will provide information about the research informants, including the dates when they were interviewed; before summarising the key points contained in the chapter.

4.2.   Historically Contingent Institutions

The Mexican revolution was driven by what Tocqueville (1955) would have described as the revolution of rising expectations. Profirio Diaz assumed control of Mexico in 1876, remaining in power until 1911 (Beezley & Meyer, 2010).   During this period he implemented a series of structural reforms, consistent with the economic liberalism of the time. As a consequence, the country experienced dramatic economic development, with Porfirio Diaz maintaining strong political and social control. This process of industrialisation created a newly enriched elite, who sought a

more open political system to complement their economic wealth; led by Francisco Madero, the 'Father of the Mexican revolution', a banker who had been imprisoned by Porfirio Diaz for advocating the introduction of a democratic electoral system. During this era, indigenous populations were legally bound to the vast *haciendas* or land estates, in order to guarantee sufficient labour for the production of cash crops. The Mexican revolution arose out of the political aspirations of the nouveau riche, but was soon drowned out by the clamour of the claims for freedom by other elements of society, including indigenous populations, who demanded freedom from peonage (serfdom). Emiliano Zapata, an agrarian reformer from southern Mexico responded to the call from Francisco Madero to overthrow the Porfirio Diaz dictatorship. Emiliano Zapata demanded *Tierra y Libertad* or land and freedom for these 'peones' (serfs), and as a consequence Mexico was engulfed in a revolution that lasted a decade, with alliances shifting between the various warring factions throughout this period (Beezley & Meyer, 2010). After substantial human and economic cost, the warring factions slowly began to make peace and find accommodations that ended the war, taking a decade to coalesce; before a presidency and democratic system emerged, a system that in reality became a rotating dictatorship (Heath, 1999), with presidents initially being drawn from the victorious generals, and later from the technocratic class. What eventually resulted was a planned economy with greater power concentrated in the presidency within the capital of Mexico City and amongst bureaucrats (Beezley & Meyer, 2010). The laissez-faire capitalism of the previous era was replaced with highly controlled industrialisation, through programmes of import substitution industrialisation (ISI). Heath (1999) notes that a feature of the Mexican political economy was the *sexenio* (six year) crisis, with the law prohibiting presidential incumbents running for a second term; whilst preventing the emergence of the dictators that were in evidence in other Latin American countries at the time, having the unintended consequence that at the end of every presidential term, the outgoing post holder and elected officials would pillage government funds.

The indigenous peoples did not wish to be part of this modernisation programme (Guardino, 1996), and the revolutionary government responded to their demands for 'Tierra y Libertad' or 'land and liberty' by returning vast tracks of land in remote regions, allowing indigenous communities to return to their ancestral lands after 400 years of forced service. The government created *ejidos*, or communally owned land,

intended to satisfy the demand from the indigenous communities to remove themselves from modern Mexican society (Riding, 1985), with the consequence that these communities were subsequently excluded from the 'Mexican miracle' of unprecedented economic development that occurred between 1940 and 1981 (Inter-American Development Bank, 1998), and was experienced by the rest of society. The impact of this was the exclusion of indigenous peoples from meaningful participation in socio-economic development for some 70 years. In the absence of the state promoting development, *caciquismo* or local power brokers emerged in rural communities, wielding power over the allocation of social, political and economic rewards (Villarreal, 2002).

The global economic crisis of the late 1970s and early 1980s resulted in many countries abandoning state led development in favour of market-based solutions (Gore, 2000). In Mexico there was a serious economic crisis in 1976, which saw the currency devalued by some fifty per cent (Peach & Adkisson, 1997), leading Mexico to default on its national debt in 1982 (Bruner & Simms, 1987); and beginning a series of structural reforms that resulted in Mexico joining the General Agreement on Tariffs and Trade (GATT) in 1986, and the North American Free Trade Agreement (NAFTA) in 1991 (Heath, 1999). One of the conditions of joining NAFTA was the reform of Mexico's agricultural sector; and thus in 1992, the country altered its constitution and legally disbanded the *ejido* system (Cornelius & Myhre, 1998), thereby reducing the subsidy on local corn production, with the result that communal land could be bought and sold.

4.2.1. The State

These economic changes led to the development of a new set of institutional logics regarding how policy makers viewed the role of the state, with a retreat from Keynesian models of social development (Hall, 2011). These new neo-liberal logics were hostile to the concept of an active and progressive state (Clarke, 2004), and De La Madrid, President from 1982 to 1988, launched a series of political and economic reforms that would eventually move Mexico from the revolutionary era to the current neo-liberal era. The new role of the state was to allow the free market to effectively and efficiently allocate resources, acting as a sentinel to ensure that no one violated the natural mechanisms of capitalism. Institutional theorists have noted that impartial

contract enforcement and the adjudication of disputes is key to a well functioning market (North, 1997), with the state acting as the facilitator of economic development, accomplished through the creation of enterprise zones or the formation of new markets (Clarke, 2004), whilst maintaining a level playing field to allow entrepreneurs to compete for economic opportunities.

4.2.2. Religion

The origins of Catholicism are directly linked to the Spanish conquest of the 16th Century (Pardo, 2009), when the Spanish crown dispatched various religious orders to convert Mexico's indigenous population to the Catholic faith. These missionaries accepted local rituals when introducing Catholicism, identifying areas of similarity such as the Catholic feast of All Saints Day and the indigenous ritual of *dia de los muertos* (day of the dead) to demonstrate the commonality between local rituals and Christian feasts. Such strategies allowed Catholicism to be understood and accepted by indigenous communities with greater ease (Pardo, 2009).

The Catholic Church in Mexico grew very powerful during the independence era (1820-1910), acquiring vast tracks of land. Rescinding the power of the Church became integral to the Mexican revolution of 1911, leading to the closure of churches and priests losing their Mexican citizenship. However, despite such curbs, the church maintained its significant religious importance, particularly in rural areas (Brandes, 1988).

A key feature of religion in rural Mexico is the multitude of *fiestas*. There are *fiestas* to mark the patron saint of the neighbourhood church, baptisms, first communions, and *quinceañera* (a child's fifteenth birthday). Nobel Laureate Octavio Paz (1985) summed up the importance of the *fiesta* to Mexican society by describing the *fiesta* as an effort to:

> Escape himself, to leap over the wall of solitude that confines him during the rest of the year... by means of this squandering the community protects itself against the envy of the gods of men. Sacrifices and offerings placate or buy off the gods and the patron saints. Wasting money and expending energy affirms the community's wealth in both. This luxury is a proof of

> health, a show of abundance and power. Or a magic trap.
> For squandering is an effort to attract abundance by contagion. Money call to money (pp. 49-51).

Fiestas may sometimes have unfortunate or negative consequences. The author once made the mistake of providing cash advances to jewellery suppliers, right before the village *fiesta*, only to have the deposit spent on alcohol, food and entertainment, with the orders never delivered, as the money was used as an offering to the gods to ensure continued business success during the coming year, a paradox that many overseas purchasers do not understand. When such appropriation occurs, many foreign buyers simply refuse to do any further business in Mexico, and instead take their business to other famous handicraft producing countries such as Bali, Thailand or Nepal.

4.2.3. Democracy

The logic of democracy implies that there are free and fair elections, and that the benefits of society are equally available to all its members. Democratic systems posit the anonymous rule of law as of primary importance to legitimacy, with a concomitant emphasis on autonomy from the dominance of any one specific element of society (Abts & Rummens, 2001). Mexico is currently in transition from autocratic rule to democracy, and in 2000 the first candidate from an opposition party was elected as president (Lawson, 2007).

4.2.4. Family

The family is not typically considered a part of the economic system (Thornton, 2002). When applying Thornton's model to the Mexican context, it is possible to identify deeply embedded beliefs that influence current behaviour. As has been illustrated, in the colonial era, Mexican society was structured to give substantial power to both the Catholic Church and the Spanish crown (Riding, 1986), with society serving the crown, and most economic activities designed around export-oriented activities (Riding, 1986). The immigration of families was discouraged, as this would require the colony to divert resources from the export of material goods to the provision of public goods required by the growing population. This logic of prohibiting families to migrate served the crown's needs, as fewer resources were required to build and maintain public goods in the new world, allowing more of the generated wealth to be returned to Spain. This had an unintended impact on the

institution of the family, as Spanish men living in Mexico without their wives and families would often take Indian mistresses; behaviour that resulted in the birth of *La Raza* or the Mexican race. This behaviour has arguably had a devastating impact on Mexican society (Paz, 1985), developing into a deeply embedded institution that continues to this day, with men expected to take on multiple mistresses, an institution commonly referred to as *machismo*. However, whilst it is important to remember that individuals may be unaware of the institutional logics that they are following (Alford & Friedland, 1985), the enduring nature of institutions suggests that academics can benefit from designing research that explores current institutions through an historical lens.

4.2.5. The Market

The *ejido* system established large indigenously owned tracks of land, and communities became reliant on subsistence farming, with families farming a small plot of land within the *ejido*. Within the *ejido* system, families also had other communal responsibilities, including maintenance work on communal water sources and other collective public works. In traditional subsistence farming, when children reach adulthood, they acquire their own plot of land and the cycle continues, thereby safeguarding low yield farming practices. Such a system does not support the establishment of economies of scale or necessitate the creation of specialised labour. The findings of this research indicate that the MSE studied exhibit some of the characteristics of subsistence farming, with informants speaking of the need to help establish their children in their own handicraft business, and allowing them to have a future in the industry. In one interview, the parents concerned had bought their son an expensive piece of machinery. When asked why it was not utilised as part of the parents' business, the informant stated that it was done for his son's betterment. There was also an additional comment to the effect that his fate was now in his own hands and thus no longer the responsibility of his parents. This is at odds with neo-liberal views about how the market functions, which assert that successful firms emerge through the creation of specialised labour and the adoption of ICT tools. It appears that even after 25 years since the introduction of market based solutions to address the under-development of these communities, there remains a reliance on historically embedded solutions.

This may be partially explained by the structure and history of the handicraft market in Mexico, which was radically altered during the colonial era of Spanish rule, when emphasis shifted towards an export-oriented system, with production relying on forced indigenous labour (Beals, 1975). The belief within peasant communities that international trade has had a detrimental impact remains all pervasive, and consequently, the market system is viewed as integral to the historical continuity of unfair trade practices (Kahl, 1986).

4.3. Government Policies

Mexico has significant income inequality (Mexico's Mezzogiorno, 2006). Poverty adversely impacts approximately 45% of the population, with 18% living in severe poverty, and 27% not earning enough to cover basic services like health and education (OECD, 2007). It is against this backdrop that the Mexican government, as part of its Millennium Development Goals commitment, has embarked upon an extensive ICT training programme known as e-Mexico. The goal of this programme is to reduce the digital divide and lift indigenous communities out of poverty, by making markets work better for poorer people (Mexican Ministry of Communications and Transportation, 2012), with a key objective of the programme to increase the use of ICT tools by the MSE (Mariscal, Gil-Garcia & Aldama-Nalda, 2011). As a result, local and state governments also offer ICT and non-ICT training programmes, and there is support from all levels of government to help MSE incorporate ICT tools into their businesses in order to improve their organisational performance. The State of Guerrero, in which Taxco resides, is one of the poorest regions of the country (Mariscal, Gil-Garcia & Aldama-Nalda, 2011), and consequently the government has established 315 Community Computer Centres across the state. However, research has found that only 13 per cent of the users of the centres are either business owners or employees, with the vast majority (74%) being students checking their email, watching videos, or doing homework; 8% of users are teachers using the centres for help with lesson planning, while the final 5% did not provide valid answers. Business owners did not use the centres, because the hours of operation were not convenient (such centres are only open during the day, meaning business owners were unable to visit). The author also noted an additional issue with the centres, with usage not coming from the poorest members of the community, but from poor and middle

income groups. While there are many benefits associated with the e-Mexico initiative, it does not appear to be helping either the poorest or the business owners within these communities.

The national government has long identified the integral role that handicrafts play in the economic development of indigenous communities. The government established the *Fondo Nacional para el Fomento de las Artesanias* (FONART), a federal agency mandated to develop the various handicraft sectors in Mexico (FONART, 2014) and to generate higher incomes and thus aid human, social, and economic development. FONART has an office in Taxco, with the director interviewed during Phase One of this research.

4.4. Handicraft Production in Mexico

Handicraft production in Mexico dates back to the pre-conquest era, when the Spanish established export orientated handicraft production centres throughout Mexico. During the revolutionary era, many Mexican intellectuals, artists and political leaders sought to create a national identity that was distinct from the liberalism and western orientation of the previous regime (Vaughan, 1997). Artists such as Diego Rivera painted murals depicting the long-suffering peasants under the previous era. This creative identity was strengthened through the introduction of state sponsored theatre, art, and other cultural events that implicitly used indigenous handicrafts and their artefacts to build the sense of a discrete Mexican identity (Vaughan, 1997).

Handicraft production is common amongst indigenous communities, and has long been the focus of anthropological research (Wood, 2000). According to Wood, in 1936 Parsons conducted some of the earliest research on handicraft production in Mexico; when he used ethnographic methods to research Zapotec rug production. Almost twenty years later, Minkes (1952) defined handicraft production as part of a complex survival strategy. More recent studies continue to explore the nature of handicraft production (Cant, 2012; Stromberg-Pellizi, 1993), revealing that international aid agencies continue to focus on handicraft production as a means of moving poor communities out of poverty (Blue, 2006; UNCTAD, 2003), with the

potential benefit of improvements to socio-economic development within indigenous communities (Binford & Cook, 1991) themselves.

4.5.   Description of the Research Sample

Taxco has been the principal silver mining town in Mexico for hundreds of years. It is a remote town, located high in the Sierra Madre mountain range, approximately a 5-hour drive south west of Mexico City, and is part of the state of Guerrero. Image 4.1 shows a map of Mexico, with an arrow situating the location of the town of Taxco.

Image 4.1 Map of Mexico Highlighting Taxco

The town was first 'discovered' by Hernan Cortes, the Spanish *Conquistador* of modern Mexico. However, it was not until 1751 that a French prospector, De La Borda, began to exploit its rich silver deposits, allowing him at one point to become the richest man in New Spain and one of the wealthiest men in the world (Couturier, 2013). However, once the main silver veins were depleted, the town was mostly forgotten. Image 4.2 shows the town of Taxco as it stands today.

Image 4.2: Photograph of Taxco

Despite its history, the establishment of Taxco as a silver handicraft market town is a relatively recent development. The following summary of the development of the Silver Handicraft Sector draws upon the official Spratling Silver website (Spratling Silver, 2003), along with research by Stromberg-Pellizi (1993). In the 1920s an American writer and university professor named William Spratling began to spend the summer in Mexico. On the advice of US Ambassador Dwight Morrow, Spratling travelled to Taxco to explore the possibility of making silver jewellery in a town that had a history of exporting tons of silver, without engaging in any value added production (Spratling Silver, 2003). As a result of Spratling's input, silver handicraft production began in the town in 1931, when he hired a few locals and taught them how to make silver jewellery. Spratling opened his first workshop, named *las delecias* on the street called *calle las delicias*. The business soon became successful, with products being sold at some of the world's best stores. Other entrepreneurs from Taxco itself responded to the emerging demand by opening competing workshops, and within a few years, a small number of large enterprises employed thousands of silversmiths. By the 1940s, the newly-trained silversmiths began producing their own jewellery in their own home based MSE, and as a consequence, the larger introductory enterprises found themselves facing competition from their own workforce, and eventually closed, with Spratling himself closing his workshop in 1945. Despite this change in the method of production, the silver handicraft market continued to develop, and continues to dominate economic activity in Taxco to the present day.

4.5.1. Description of the Taxco Silver Handicraft Market

Information about the Saturday market started is vague, but the current structure appears to indicate that its origins were *ad hoc*. The present Saturday market consists of over 2,000 stalls, all situated around the town's central bus station. Stalls are set up in school playgrounds, on pavements, in parking lots and on private property surrounding the bus station. Image 4.3 shows a map of Taxco, with the market boundaries outlined in red. Market stalls are very basic, run side by side and all looking similar, with tables covered in cloth and the handmade jewellery lying in rows. MSE stand behind their table, usually never speaking unless spoken to by onlookers. Some vendors have formed *sindicatos* or commercial trade associations that negotiate with owners of suitable property for weekly tariffs, while others rent their stalls from the municipal government. The poorest sellers do not rent a space in the market, instead walking around trying to find customers whilst avoiding the local police.

Image 4.3: Map of Taxco Showing the Saturday Market

4.5.2. A Typical MSE

MSE tend to be home-based enterprises (Stromberg-Pellizi, 1993), with the author's experience suggesting that most MSE do not live in Taxco, but instead reside in outlying communities, travelling 30-45 minutes on mini-buses to reach Taxco, as illustrated in Image 4.4.

Image 4.4: Example of a Typical Village near Taxco

4.5.3. Demographic Information

Phase One of the research identified the demographic characteristics of the informants. According to the World Bank (2012), some 52% of the Mexican population lives below the poverty line. The Mexican Association of Market Research and Public Opinion uses a seven level measurement scale to categorise Mexicans by income (Asociacion Mexicana de Agencias de Investigacion de Mercados y Opinion Publica, 2007), with Category A being the highest and E the lowest. Table 4.1 classifies research informants in Phase One by income. Using this measure, a total of 23 informants (68%) interviewed came from level E, the lowest economic group, with a further 10 (29%) coming from level D, with one informant refusing to disclose his income. This finding confirmed expectations, and is consistent with the findings of other research regarding the income levels of artisans (Wood, 2000; Scarse, 2003).

Socio-economic level	Monthly Income	Informants
A/B	Over $5,667 USD	0
C+	$2,334-5,666USD	0
C	$744-2,333	0
D+	$453-773	1*
D	$180-452	10
E	$0-179	23
*Informant declined to answer, and proxy measures were used to determine income		

Table 4.1: Informants Categorised by Income

A total of 58 informants were interviewed, 34 during the data collection interval in Phase One (January 2010), with the remaining 24 informants interviewed during Phase Two in June and July 2012. Educational levels varied greatly amongst

informants, with older informants often only having received three years of primary schooling. Most of the younger informants had either completed high school or a technical trade. The director of the local FONART office revealed that in his three years in office, not one artisan MSE had participated in any of the training programmes that had been offered. He indicated that the total number of artisans in Taxco and the outlying region is approximately 8,000, of which there are 70 legally registered enterprises.

Table 4.2 lists the informants interviewed for this research. The first column assigns a numerical contact key to each informant, which will be used as reference in the remainder of this thesis. The second column provides the informant's name, and the third column lists the recording number. The interviews in Phase One relied on an interview guide and used pen and paper to make a note of informants' responses. In the second phase, interviews were digitally recorded, professionally transcribed and translated. It was decided to record the interviews to enable the author to fully participate in the conversation, rather than simultaneously taking notes. It was also decided, following consultation with advisors, that digitally recording the conversations would improve the data analysis.

Contact Key		
Contact #	Name	
Phase One: January 2010		
1	Pedro Narvaes Bustos	Not recorded
2	Aurora Ramirez	
3	Patricia Alvarez	
4	Domitilo Rodriguez	
5	Angelica Alonzo Garcia	
6	Alonzo Garcia	
7	Ana Maria Garcia	
8	Oscar Cano	
9	Ana Luz Menez	
10	Miguel Barrera	
11	Alma Delia Perez	
12	Silvia Pachero	
13	Citaly Landa	
14	Juana Brito	
15	Jaime Mateo	
16	Vincente Silva	
17	Jose Luis Pineda	
18	Graciela Diaz	

19	Juana Garcia	
20	Martha Aleman	
21	Jesus Aviles	
22	Eric Jesus Diaz	
23	Guillermo Flores	
24	Antonio Garcia	
25	Jose Luis Perez	
26	Ma Angelica Mendosa	
27	Daniel Bautista	
28	Guillermo Jaimes	
29	Margarita Garcia	
30	Julieta Torrescano	
31	Manuel Bustos	
32	Donato Cabrera	
33	Carolina Ramirez	
34	Jose Maria Pineda	
	Phase Two: June / July 2012	Recording #
35	Jose Maria Flores	8020014
36	Marychelo Bustos Arrellano	8020014
37	Guillermo Flores	8020017
38	Oscar Narvaez	8020018
39	Salome Burdos	8020018
40	Domitilio Rodriges Delgado	8020011
41	Ceslo Javier Gonzalez F.	Inaudible
42	Jesus Antonio Gonzalez F.	Inaudible
43	Denetrio Cartejon	8020019
44	Alejandra Gonzalez N.	8020019
45	Norma Guerrero	8020028
46	Miguel Estrada	8020020/21/22/23
47	Silvia Inone Estrada	8020020/21/22/23
48	Marco Antonio Chave	8020025/26
49	Delgado Chavez	8020026/26
50	Virginia Ocampo	8020027
51	Jesus Ocampo	8020027
52	Maria Pineda	Not recorded
53	Lilia Roman Cerezo	Not recorded
54	Maria de Socorro de pineda	8020032
55	Ariz Menez	8020033
56	Gelida Lugo	8020034
57	Isreal Narveaz Ronces	8020034
58	Roberto Viveros	8040035

Table 4.2 Informant Contact Key

The typical MSE reflects the nuclear family of husband, wife and unmarried children. The pilot project confirmed that the average MSE consisted of 3.8 members. Image 4.5 shows a typical artisan family, although the husband was not present for the

photograph, despite being part of the MSE. The photograph includes Informant 55's mother, wife and two children. The family lives and works in the tin shack shown in the background, with the living space an 8x8 foot area, with the area outside the dwelling dedicated to cooking and cleaning. Image 4.6 shows the inside of the tin shack. The workshop has a small table and a propane tank, used for both soldering and cooking. Informant 55's wife and older daughter are active members of the MSE, helping to make the jewellery and take it to the market to sell. Image 4.7 is a photograph of the catalogue that Informant 55 takes to the market to sell his products. Like many others artisans, he does not rent a location, instead choosing to walk around the market seeking out buyers. Image 4.8, taken from the back door of the living quarters, highlights the multiple survival strategies employed by MSE in addition to handicraft production, with the area behind the property being used for subsistence farming (corn production).

Image 4.5: Informant No. 55's Family   **Image 4.6: Informant No. 55's Workshop**

Image 4.7: Informant No. 55's Product Catalogue

Image 4.8: Informant No. 55's Cornfield behind MSE

Over the past thirty years, there has been a dramatic decline in the number of buyers coming to Taxco to purchase silver. The author began buying jewellery in Taxco in 1986 (coinciding with the introduction of neo-liberal economic policies), when the Saturday market was typically crowded with people, as illustrated in Image 4.9.

Image 4.9: Taxco Market in the 1980s

However, more recently, the market has declined in popularity, as revealed in Image 4.10, which was taken in 2013. There are now very few buyers, and the streets are no longer busy. Part of this decline can be attributed to the worldwide economic crisis that started in 2001. However, in Mexico the global crisis has been compounded by narcotics related drug violence (narco-violence), with Taxco situated on a main drug trafficking route. In June 2010, local media reported that sixty-four bodies had been found dumped in an abandoned mine shaft, leading locals to joke that they were no longer mining silver, but bodies. This violence has begun to impact more directly on the Taxco Silver Handicraft Sector, with occasional incidents of locals being kidnapped and held for ransom. Foreign buyers are also warned to be careful, and to

take precautions such as not venturing out in the evening and never eating at the same restaurant more than once, as individuals from overseas are not immune to the violence; as illustrated in 2013, when a Canadian buyer was brutally robbed and murdered while shopping in Taxco. During the interviews undertaken in this research, a number of informants raised the problems associated with the general decline of the Taxco Silver Handicraft Sector, with a number of participants specifically mentioning the existence of narco-violence.

Image 4.10: Stalls Selling Jewellery in Empty Streets

4.5.4. The Process of Jewellery Production

Silver jewellery is produced on an eight-day cycle, with orders placed at the Saturday market delivered on the next market day. Image 4.11 shows an artisan making jewellery, while Image 4.12 shows a sample of a stone ring. If a buyer has ordered some turquoise stone rings (as illustrated) the artisan will spend Monday gathering supplies, including buying the pure silver, and visiting the workshop of her preferred stonecutter to order the required number of stones. In this example, there is only one type of stone required, but it is not uncommon for the order to require a variety of stones, including onyx, lapis lazuli, agate, jade or amber. The stonecutter will confirm when the order can be collected, typically within a couple of days. On Tuesday, the artisan will begin working on her part of the production. She uses a method for making the basic ring design called 'lost wax'; and at this stage will have made the silver ring, along with the base that the stone will sit on. On Wednesday or Thursday, she will collect the cut stones, at which point the base will be cut to fit the exact size of the stone, which will always vary slightly. The stone is then glued onto the base, before the base is soldered onto the ring. On Friday, the ring is polished and made ready to deliver to the Saturday market.

Image 4.11: An Artisan (Informant #36) making Jewellery

Image 4.12: Example of a Stone Ring

4.6. Summary

In summary, whilst the Taxco Silver Handicraft Sector is a relatively young one, both federal and state governments in Mexico identify the significant role it plays in the social and economic development of the town, with the government using both traditional and ICT based initiatives to raise the poor artisans out of poverty. Handicraft production is part of a complex survival pattern for MSE, which combines jewellery making with subsistence farming, and MSE develop production of weekly orders through an informal network of input suppliers.

Chapter 5: Research Findings

5.1.   Introduction

This research has explored how institutions within the Taxco Silver Handicraft Sector influence the adoption and non-adoption of IS innovations. This chapter presents the findings and data analysis of the interpretive case study.   The data was collected during fieldwork conducted during two phases, Phase One in January 2011, and Phase Two during June and July 2012. The data from both phases was analysed using a hermeneutic cycle, with data from individual interviews analysed separately, as well as part of an entire data set (Myers, 2013).   It is clear that the introduction of ICT tools and the development of IS innovations does not occur in a vacuum; instead, agents rely on regulative, normative and culturally cognitive pillars of institutions (Scott, 2008) to make sense of ICT tools, with the context in which agents reside structuring the development of IS innovations (Avgerou, 2009).

The author's experience, gained from 25 years of working in the sector provided valuable foundational knowledge. Through the initial coding of research data related to ICT adoption, key themes emerged. The identification of the eight institutions of *caciquismo*, *confianza*, *el pueblo*, *el artesano*, *machismo*, *mañana*, *egoismo* and *fatalismo* build upon Scott's three pillars of institutions (namely regulative, normative and cultural-cognitive), which were presented in Chapter 2. Whilst the coverage of these institutions is by no means comprehensive, there is sufficient evidence to substantiate the belief that these institutions are historically and culturally contingent; and to support the exposition that the introduction of ICT tools has created a contradiction within existing institutions, and it is this very contradiction that becomes the source of praxis. Seo and Creed (2002) identify contradiction and praxis as key elements in the institutionalisation process.   The theoretical framework outlined in Chapter 2 developed the concept of contestation, as a tool used in order to explore the interface between contradiction and praxis.

In Mexican society, these institutions are accepted within a broader cultural context, and are not related to ICT adoption alone. Conventional approaches in adoption

research, such at TAM or the Diffusion of Innovation tend not to consider the broader institutional context, and therefore, the data collected in this research requires trans-disciplinary analysis. Such an approach is consistent with Walsham's (2013) recommendation, and is achieved by using the toolset developed in the theoretical framework, as well as incorporating techniques from other disciplines, including anthropology (Bohannan, 1963; Lomitz, 1977); development theory (Casson & Guista, 2004); ethics (Aguilar, 1984), traditional literature (Paz, 1985); and history (Riding, 1985). In adopting this approach, literature that considers the social and historical development of the institutions (Klein & Myers, 1999) has been considered; which has then enabled an interpretation of the context of any findings (Sahay *et al.*, 2010). Such an approach is integral to Avgerou's (2008) assertion that research should be done in situ, with the goal of scrutinising institutions to increase theoretical knowledge.

This chapter is organised as follows. After the introduction, each of the eight institutions outlined above is discussed, in a three-step process. Firstly, a contestation between the local context and the introduction of IS innovations is discussed; with research findings then presented according to Seo and Creed's (2002) framework of contradiction and praxis, before the contestation is then explored, applying Scott's three pillars of institutions. Although each of the eight institutions is discussed separately, it should be remembered that there is an inherent inter-relationship between all eight institutions (Scott, 2008), and therefore the analysis will reflect this interdependence.

5.2. *Caciquismo*

This research defines *caciquismo* as the local patronage networks that exist in rural Mexico (Villarreal, 2002). *Caciquismo* is a historically continuous institution that is cultural-cognitively embedded. Its development is based on over 500 years of elite capture, which has institutionalised a sense of betrayal amongst the poor (Howell *et al.*, 2007). Deeply embedded within Mexican society are notions of exploitation of the lower classes by the elite, which has manifested itself in different ways during three discrete historical eras: colonial, independence and revolution.

The colonial era began with the arrival of the Spaniards in 1519. The Spanish established a system that emphasised export-orientation (Beals, 1975); along with a caste system that obliged peasants to provide tribute to the king or his representative in the form of unpaid labour (Miller, 1985), with the system identifying a local leader or *cique* to be the King's representative in each village. During the wars of independence from 1810 to 1821, Mexico saw a rise in *cuadillos* or military leaders (Villarreal, 2002). During this period it was these local military commanders, along with landowners who assumed control over local patronage, with the institutionalisation of peonage (debt servitude) for the peasantry (Knight, 1986). The Mexican Revolution (1910-1920) was partly a struggle led by peasants for their land and freedom, or *Tierra y Libertad* (Beezley & Meyer, 2010). Research has found that during this era, the patronage system was modified once again, forming the current system of *caciquismo*, in which local political parties subverted the electoral system in their favour, through the distribution of social, political and economic rewards (Villarreal, 2002). The economic crises of the late 1970s and early 1980s resulted in many countries abandoning state led development in favour of market-based solutions (Gore, 2000), with a new set of logics emerging that defined how policy makers view the role of the state, marking a retreat from Keynesian models of economic and social development (Hall, 2011). Neo-liberal logics were hostile to the concept of an active and progressive state (Clarke, 2004), instead advocating that the free market best suited to the effective and efficient allocation of resources.

In Mexico, while the privatisation of state industries was presented as the emergence of a new neo-liberal competitive market, it was also used to further entrench a corporatist relationship (Clifton, 2000); with the privatisation of the telecommunication sector a classic example of *caciquismo*. Research undertaken by Clifton (2000) revealed that Carlos Slim was able to buy *Telefonos de Mexico* (the national telephone monopoly provider) without investing any money, and instead, he was allowed to use the company's cash reserves to pay for its purchase.

When exploring the specifics of ICT adoption at a macro-economic level, researchers have found that adoption rates in Mexico are much lower than those found in any other OECD country (OECD, 2007). An underinvestment by companies has resulted in the underperformance of the Mexican economy, a finding reinforced by research

conducted by Jorgenson and Vu (2005), which found that the GDP growth achieved during the first 20 years of NAFTA membership emanated from increases in labour inputs and not from efficiency gains resulting from adopting IS innovations.

The Mexican government, as part of its commitment to meeting the Millennium Development Goals, has embarked on an extensive ICT training programme, known as e-Mexico. The goal is to reduce the digital divide and lift indigenous communities out of poverty by making markets work better for poorer people (Mexican Ministry of Communications and Transportation, 2012). One of the objectives of the programme is to increase the adoption of IS innovations by MSE (Mariscal, Gil-Garcia & Aldama-Nalda, 2011), with support provided by all levels of government to help MSE incorporate ICT tools into their businesses in order to improve organisational performance, with local and state governments also offering various training programmes.

These ICT training programmes are designed to provide better and more equal access to market opportunities for all MSE in the sector. However, this research advocates that the source of contestation found in Taxco is a basic conflict between the institution of *caciquismo* and the assumptions embedded in the ICT training programmes related to the allocation of economic rewards, which constructs patterns of thought within the sector regarding the potential benefits to be accrued from attending ICT training programmes.

5.2.1. Exploring Contestation

This research has identified a contradiction related to the neo-liberal concept of equality of opportunity that is embedded in ICT training programmes, and that of institutionalised beliefs of *caciquismo*, which is negatively impacting upon participation in ICT training programmes within the sector.

In 1986, Mexico signed up to the General Agreement on Tariff and Trade (World Trade Organization, 2014) and began the process of adopting a neo-liberal model for its economic development. Eight years later, Mexico signed the North American Free Trade Agreement (NAFTANOW, 2013), and thus fully embraced neo-liberalism. The impact on rural communities included the elimination of subsidies for peasant farmers

(Anderson, 2001). Since the elimination of such subsidies, the Mexican government has relied on neo-liberal and market based principles of equality of opportunity to improve development in these poor communities, with the rationale for including handicraft producers in this cohort recognising the role that handicraft production plays in providing survival strategies for the poor (Medina & de los Santos, 2008). There is a belief that ICT adoption will permit MSE to develop IS innovations in order to improve their organisational performance. However, the analysis in this research identifies a contradiction, based on Seo and Creed's (2002) theoretical framework, residing in the concept of sectoral isomorphism that conflicts with divergent ideas. In this contestation, the sector can be defined as conformist, or alternatively, as the agents that desire the maintenance of traditional institutions. In opposition are ICT training programmes, which act as the change agent.

The interviews asked if the MSE had participated in any training programmes. Responses were usually negative, highlighting both a disdain of government involvement, and the generally held belief that the government allocation of scarce resources was politically motivated.

> *"The system of allocating spots is not just"*
> [Spots are locations for selling jewellery at the various
> markets, allocated by government officials]
> **Informant #44**

The municipal government in Taxco grants individual leases to enable the use of public lands for the Saturday market, with pavements, parks and alleys rented to MSE to sell their wares. Two informants mentioned the unfairness of the allocation of a specific piece of land. The land in question was a small park, situated in a prime location. The park was leased out to an individual for $200 pesos a year; who subsequently sub-leased smaller spots to individual MSE, with the park currently rented to 20 vendors at a cost of $200 per week. The allocation provides an example of how the institution of *caciquismo* functions, with Informant #35 commenting that the landlord earns more than any of the MSE that rent the spots.

The typical response to a question on ICT training was an assertion that such training programmes were designed only to benefit the elite, revealing the generally held belief that *caciquismo* is a part of the social structure:

> *"The* [ICT training] *programmes are only for the president of the market and his friends"*
> **Informant #42**

> *"The government only helps their supporters"*
> **Informant #47**

In relation to the role of government, a number of informants felt that the government did not help artisans, with others believing that the role of government should be limited to bringing tourists to Taxco, with ICT training programmes largely unwanted.

> *"No, the government does not help us"*
> **Informant #57**

> *"The government doesn't help anything"*
> **Informant #45**

> *"The government is not doing anything* [to help the sector] *…their job is to bring tourists"*
> **Informant #37**

While informants acknowledged that there are benefits associated with ICT training programmes, they did not believe that the training would benefit them.

> *"The government does not help, there are some benefits ... but it is not suitable for us"*
> **Informant #39**

5.2.2. Situating the Findings into Scott's Three Pillars

The cultural-cognitive element of the conceptual framework predicts that individuals, when introduced to a new social structure, will use culturally embedded presumed responses to manage the uncertainty that results from any novelty (Scott, 2004). While there may be formal regulations designed to obviate the political allocation of any economic rewards, the findings of this research indicate that there is a normative expectation of elite capture, raising suspicions about government sponsored training programmes. The non-participation in the ICT training programmes appears to be a

collective response to the belief that these new social structures are designed to further entrench elements of *caciquismo*, with this belief then limiting the effectiveness of the ICT training programmes that are designed to promote the adoption of IS innovations.

The training programmes have failed to gain what Seo and Creed (2002) identify as the necessary collective action for institutional change, and therefore have not become new social interactions within the sector. However, an absence of collective action does not mean that there was no change; although ultimately, conformity prevailed, as existing institutions were resilient to the attempts to develop new social structures. The high level of elite capture, as manifested through the institution of *caciquismo* is partially responsible for the low levels of trust in Mexican society (Villarreal, 2002). Nevertheless, this research did find that two out of the 58 informants had participated in ICT training at some level, and that as a consequence these two individuals did then attempt to develop IS innovations.

Mexican government policy advocates that the adoption of IS innovations will result in positive outcomes, through an improvement in organisational performance (Mariscal, Gil-Garcia & Aldama-Nalda, 2011). However, the interview responses are indicative of a cultural-cognitively held belief that the training in question is a continuation of *caciquismo*, leading to a concomitant world view that if the training programmes were valuable they would not be available to everyone. Non-participation therefore represents a reluctance to adopt a new social structure, which is believed to be yet another manifestation of *caciquismo*. In this instance, collective action (or inaction) functions as institutional resilience to participation in ICT training programmes.

There are a number of agencies providing ICT training programmes, and in an interview with the director of *FONART* (the national programme for the promotion and development of handicrafts), it was discovered that he had never had an artisan participate in a training programme, which is particularly noteworthy given that his office was located in Taxco, and therefore that his job was to assist the artisans in the sector. He also noted that the vast majority of MSE did not qualify for training, since programmes were only available to formally registered firms; illustrating a mismatch

between the central government institutions, in the form of laws designed to further economic development of a sector; and the exclusion of most MSE in the sector from participation. This mismatch supports the ingrained belief that the most valuable training programmes are only available through *caciquismo*.

5.3. *Confianza*

Numerous researchers have identified the difficulty of conducting business in Mexico (Clifton, 2000; Oppenheimer, 1996). This is due in part to institutionalised *caciquismo*, in which political connections help determine economic success, with betrayal commonly a feature of Mexican social life (Foster, 1965), due to the weak regulatory institutions that allow the politically connected to gain economic benefit. Riding (1985) found that Mexicans resent the abuse of power by those in authority, but readily admit that they too would take advantage of the benefits of power if they had the opportunity. A possible solution is to socialise first and conduct business second, a suggestion that has led some researchers to posit that Mexicans prefer to conduct business with friends (Grosse, 2001), although Mexicans believe that even their most trusted friends are destined to betray them (Aguilar, 1984); whilst other researchers highlight the belief that trust only resides within the family (Levy, 2006). One solution is for individuals to establish *confianza* with others in order to conduct business. *Confianza* at its most basic level is defined as mutual trust; but is more accurately described as a network of reciprocity and respect (Felix-Brasdefer, 2008), it is a psychosocial network developed to allow exchanges to occur in the informal sector (Lomitz, 1977), with an offer to help indicating a faith that if the situation were reversed the recipient would employ the same discretion (Velez-Ibanez, 2010).

The institutionalisation of *confianza* creates a contradiction with the adoption of IS innovations, as these tools develop market exchanges in new ways (Ba, 2001). Whilst the benefits of IS innovations have been widely credited with improving both organisational performance (Jorgenson & Vu, 2005) and participation in international trade (Wareham, Zheng & Detmar, 2005), the development of such innovations requires that trust exist between potential users (Ba, 2001). The adoption of online exchange typically requires agents to transfer their offline or 'real world' assumptions regarding the trustworthiness of other agents to the virtual world (Ba, 2001), and

therein lies the contestation.   The development of IS innovations has the capacity to improve organisational performance by improving the efficiency of the ordering process. For example, a cell phone can dramatically reduce the time it takes to order necessary supplies, allowing individuals to call, text or email their suppliers with orders, thus avoiding the current time-consuming ordering process that requires site visits to other MSE. However, such transactions require trust.

The institution of *confianza* relies upon time consuming face-to-face ordering, which limits the potential benefit of developing IS innovations. This research proposes that the source of contestation in this dimension is the basic opposition between the institution of *confianza* and the trust necessary for online transactions; which shape wider concepts of trust regarding IS innovations and thus influence the development of such innovations.

5.3.1. Exploring Contestation

This research revealed the universal ownership of ICT tools. However, the research also found scant use of IS innovations designed to improve organisational performance within MSE.

When describing the role of developing IS innovations, most informants viewed the adoption of these tools with distrust, expressing concern about the possible impact of placing items for sale via the Internet, whether through a website or via email. There was a widespread belief that using IS innovations would not be of benefit and would actually result in higher levels of piracy.

> *"If I place my designs* [on the web] *they will get copied"* Informant #38

> *"I am distrustful of uploading my designs on the Internet, I don't upload"*
> Informant #44

Informants continue to rely on their memory of the products that customers order, to guard against piracy, with the lack of any formal documentation of a design ensuring that it cannot be easily replicated. The author's own experience has revealed that even paper catalogues that are simply comprised of photocopies are highly guarded,

and not permitted to leave a supplier's premises. Informants believed that the current system ensured that if a customer wanted a repeat order, they would be forced to buy from them again, since they alone possess the design.

> *"I do not use technology, I know what they* [customers] *like and remember my customers* [and the products they order]*"*
> **Informant #46**

In an environment operating with low trust and institutionalised *confianza,* such poor trust can also extend to customers. Informants perceive a danger in disseminating information about their products to their customers, not trusting them enough to email them photos of designs, ultimately believing that a customer will, if given the opportunity, betray them:

> *"I do not email my clients photos of the designs"*
> **Informant #50**

While conducting this research, it became obvious that informants spent a lot of time waiting around, whether waiting to place orders or waiting for orders to be ready. For example, one of Informant #35's suppliers stopped by to see if he needed any products. After making the supplier wait for some ten minutes, the informant engaged in a conversation that lasted a further 20-30 minutes, mostly involving non-business related dialogue. They exchanged pleasantries, asked about each other's families, and commented on the weather. Towards the end of the visit, the supplier asked if the informant needed any supplies, eventually providing Informant #35 with a number of items necessary for jewellery production, with Informant #35 also placing a small order for other parts, and the supplier promising to deliver the product in a couple of days. The supplier then left, in order to visit other customers and generate additional sales.

These findings appear consistent with research that has discovered that in Mexico, business relationships often rely upon personal friendships (Grosse, 2001). Nevertheless, there is an important inconsistency located in these findings. For instance, if the informant and supplier described above were friends, why couldn't they simply use a cell phone to conduct business, since this would allow them to engage in a personal conversation prior to placing an order; and thus enable the

development of cell phone based ordering as a social structure. The inability to develop such a new social structure indicates the incompatibility. Using the Seo and Creed (2002) framework, this contradiction has been identified as the adaptation that undermines future adaptability, and therefore that site visits fulfil another, more opaque purpose.

5.3.2. Situating the Findings into Scott's Three Pillars

When analysing *confianza* in more detail, it is possible to interpret existing social arrangements not as the presence of trust, but as the process of building enough trust to conduct a single transaction. By using Scott's regulative pillar to determine the lack of coercive power of the state to arbitrate in disputes, it is possible to determine how artisan society functions. An example of this can be gained from the author's own experience. Sterling silver jewellery has a legal definition, requiring that the alloy be 92.5% silver and 7.5% copper. In North America, all jewellery that is sold as sterling silver must be stamped 925, serving as a guarantee that the product is genuine sterling.

When the author was concerned about the quality of the sterling silver jewellery that was being purchased, a random item of jewellery would be selected and taken to *La Hacienda*, the government assay office, who would then be paid to assay the item and determine its silver content. A number of times, the jewellery was judged by the assay office to be deficient in silver content. However, when government action was requested to press a claim of fraud against the supplier, this was refused. The unwillingness of the government to intervene in a relatively straightforward case, prompts the conclusion that there is little interest on behalf of the formal regulative sector in adjudicating in disputes located in the informal sector, and leads to a need, in the absence of a strong regulative pillar, to enable MSE to conduct effective market exchange.

The sector has developed alternative regulatory tools, which reside in the normative pillar. The interactions between agents are designed to build *confianza*. This *confianza* does not describe a trust or confidence in someone to always do the right thing, but instead refers to a level of confidence that a supplier will not betray you. The *confianza* involves a degree of certainty that the supplier will not steal any

deposit or provide low quality products, and therefore, *confianza* is not really the presence of trust, but more an absence of distrust, which would serve to disqualify any supplier from involvement in the MSE. Using this interpretation, it is possible to deduce that the long conversations as observed in this research, serve to ensure continued *confianza*. An agent that is anxious for an order, interpreted by wanting to talk about business first, would signal a need for money and therefore be assumed to pose a higher risk of theft. Therefore, *confianza* must be continually established and maintained, demonstrated through the willingness to engage in long conversations about personal matters. An agent that has achieved *confianza* is said to be *muy simpatico* or very sympathetic (Grosse, 2001). In the context of weak regulatory institutions, an individual lacking *confianza* is sanctioned by no-one conducting business with them. The long personal conversations serve to mitigate the risk associated with transactions and become a substitute for the presence of a weak regulatory pillar.

While these findings concur with those of other researchers, revealing that Mexicans are more relational in their business dealings, this research also demonstrates that relationships built up through *confianza* may only remain valid for one transaction, as the process of buying jewellery involves coordinating the purchase through many MSE. The author's own business dealings in the Taxco silver market were characterised by suppliers continually introducing new vendors, as they had lost *confianza* in those previously used. It was never explained why a new supplier was better, but assurance was always given that they were. The frequent replacement of suppliers supports the interpretation that the institution of *confianza* is iterative, and therefore must continually be built and maintained by MSE.

This finding led to the identification of the praxis of misaligned interests of potential change agents. The development of IS innovations requires a level of trust that does not currently exist within the institution of *confianza*. It appears that the sectoral adaption to low levels of trust has assisted in the development of the institution of *confianza,* which thus enables MSE to conduct business. However, such an adaption is hindering the necessary adaptability required for the development of IS innovations, as the institution of *confianza* has proved resilient to the development of IS innovation in replacing its trust building mechanisms.

5.4.   *El Pueblo*

According to Guardino (1996), in the 19th Century indigenous communities began to develop a concept of community responsibility, in response to the loss of socio economic and political influence in the newly emerging Mexican state. Guardino (1996) identifies how the newly independent Mexican nation centralised power, at the expense of the semi-autonomy of indigenous communities present under Spanish rule. These communities responded by developing the concept of *el pueblo* (literally translated as 'the village'), whether referring to either the people or the community. This structure was designed to create solidarity against newly established ruling elites, who were believed to betray the interests of *el pueblo* for personal gain. The relatively recent introduction of neo-liberal models of development has generated a renewed activism by these indigenous communities, since the state is once again perceived as betraying *el pueblo* for the benefit of the few (Desmarais, 2010). Mexican identity is embedded with a culture of honour (Najera-Ramirez, 1994), and the *el pueblo* is a sociocultural construction that represents such honourable behaviour towards others, in direct contrast to the exploitation implicit in *caciquismo*. However, researchers have noted a paradox in Mexican society, where individuals do not perceive their own opportunistic behaviour as contradictory to their own sense of honour and trustworthiness (Guerrero & Rodriguez-Oreggia, 2008).

The role of IS innovation in furthering economic development has been well established in both research and public discourse (Chew, Ilavarasan & Levy, 2012), and yet researchers have also identified that some of the challenges facing development in the handicraft sector are the result of poorly functioning markets, where factors such as information asymmetry, high information gathering costs, and high transaction costs tend to hinder trade (Leblang, 1996). ICT tools and the corresponding IS innovations align with the economic theory that information is key to well functioning markets (Jenson 2007). In some contexts, such assumptions have proven correct. For example, Ilahiane & Sherry (2012) found that cell phones helped to reduce transaction costs. However, in the context of the Taxco Silver Handicraft Sector this does not appear to be the case, as solidarity with *el pueblo* prevents the

development of IS innovations, as such these tools are seen as outside agents, representing a new form of *caciquismo*.

This research proposes that the source of this contestation is a basic conflict between the institution of *el pueblo* and the assumptions embedded in the development of IS innovations, which shape patterns of thought regarding the potential benefits of IS innovation within the sector.

5.4.1. Exploring Contestation

IS innovations allow MSE to improve their organisational performance by enhancing effectiveness and efficiency when searching the sector for lower cost or higher quality products. Whilst handicraft production is an integral aspect of economic survival for marginalised groups (Medina & de los Santos, 2008), it appears that the institution of *el pueblo* is preventing the development of the very IS innovations in the sector that would help increase much-needed income.

An interesting finding was that research informants were universally confident that their preferred supplier was the best. While informants were aware of other buying options, most were not actively seeking alternative suppliers once they had established *confianza*.

> *"There are ten suppliers but I always buy from one supplier"*
> **Informant #37**

> *"Diamontex* [a supplier] *gives me the best price, and they are closer, so I don't waste time and money travelling around town"*
> **Informant #46**

Just as informants perceived the relationship with their suppliers as more than simply transactional, their supplier network also contained a support function embedded in the institution of *el pueblo* that served to minimise exploitation.

> *"I have an informal network with other people in the market. We all help each other out"*
> **Informant #43**

120

Interviews explored the rationale for diverting work outside of the MSE, when it appeared that both the skill and time required to do the work in-house was available. The common response was that the artisans were "in it together" and whilst they wanted to develop their business, such growth should not be at the expense of others.

> *"I give work ideas to help others because we are all poor"* Informant #44

Informants appear to use the support network embedded within the institution of *el pueblo* not only to share orders, but also to acquire new customers. When asked how they attracted new customers, the informants stated that they relied on other MSE.

> *"Same way, they were recommended by other members of the Tianguis* [Market]*. They said they were honest"* Informant #50

5.4.2. Situating the Findings into Scott's Three Pillars

El pueblo, as a cultural-cognitive construct, is institutionalised within the sector. The findings reinforce the assertion that the sector relies upon an informal supplier support network. Informant behaviour relies upon the normative pillar within this network, embedded in the honour code of *el pueblo*. The purpose of this network is not to secure the best quality or lowest priced product, but to be honest with others. This is accomplished by outsourcing orders that could be completed in house, with the goal of becoming (or at least appearing to be) a *cuidadano* (good citizen), and to be recognised as an active and supportive member of *el pueblo*. In this analysis, the contradiction resides in the concept of legitimacy, which undermines efficiency.

Experience has shown that there is a sectoral expectation of sharing buyers with *el pueblo*. Failure of MSE to comply with these normative routines would imply dishonour. In the operation of his business, the author endured hours of being taken around town to visit the 'best supplier', only to waste time and not be any closer to securing the products required. The purpose of such routines was to symbolically share buyers, with little regard paid to the actual needs of a specific purchaser, while adhering to the institutional requirement for honourable behaviour towards others embedded in *el pueblo*.

By analysing the praxis in this context, it is possible to identify the misaligned interests of potential change agents (Seo & Creed, 2002) that have failed to develop the new social structure that would allow for the development of IS innovations to improve organisational performance, by reducing the time spent searching for products or finding better products at lower prices.

It should be remembered that the existing social structure of *el pueblo* serves a deeper purpose then simply providing a vehicle for engaging in transactions, designed as it is as a collective response to potential exploitation, relying on *confianza* within the community to facilitate transactions. Therefore, the potential for IS innovations to improve operational efficiency and effectiveness is diametrically opposed to the sense of loyalty to *el pueblo*, as they obviate the need to visit other MSE, which may risk being perceived by the rest of the sector as a *caciquista* (betrayer) and therefore *sin confianza* (untrustworthy). The institution of *el pueblo* has proven resilient to multiple attempts by IS innovations to improve organisational efficiency.

5.5. *El Artesano*

El artesano in its most basic definition is a person that makes handicrafts. However, within the Mexican context, *el artesano* also plays a critical role in the forming of national identity. During the independence era (1810-1911), Mexico experienced a series of military leaders or *Caudillos* ruling the country. The most durable of these was Porfirio Diaz, who ruled from 1876 until 1911 and who instituted a series of economic reforms, consistent with the economic liberalism of the time, which led to unparalleled economic development (Beezley & Meyer, 2010). His influence was so significant that his rule is categorised as the Porfirian era.

The Mexican revolution commenced in 1910, driven by what Tocqueville (1955) has described as 'the revolution of rising expectations'. Whilst the country experienced dramatic economic development during this period, Diaz maintained strong political and social control. The industrialisation process produced a newly enriched elite, who sought a more open political system to complement their economic wealth, with

Francisco Madero, a banker who had been imprisoned for his political beliefs, often described as the father of the Mexican revolution.

Over time, the narrow political goals of the nouveau riche were surpassed by the clamour of claims from other elements of society, with the indigenous population demanding freedom from peonage (serfdom), and Zapata representing their cause for *Tierra y Libertad* or land and freedom. Mexico was soon engulfed in a revolution that lasted a decade, with alliances constantly shifting between the various warring factions (Beezley & Meyer, 2010). The decade long chaos began to slowly subside as the human economic cost continued to mount, and the warring factions slowly began to make peace and find the accommodations required to end the war. This took a decade to coalesce, emerging with a presidency that ultimately became a rotating dictatorship (Riding, 1985).

This new government quickly sought to develop the symbols needed to differentiate the new 'revolutionary' era from the previous 'liberal' one. What emerged was a planned economy, with greater power concentrated in the presidency, Mexico City (the geographical capital), and amongst bureaucrats (Beezley & Meyer, 2010). The laissez-faire capitalism of the previous era was replaced with highly controlled development, through programmes of import substitution industrialisation.   The indigenous peoples were not a part of this modernisation programme, with the revolutionary government responding to demands for 'land and liberty' by returning to the indigenous communities vast tracks of land located in remote regions, in order to allow them to return to their ancestral homelands after 400 years of forced service to their colonial masters. The government created *ejidos* or communally owned land, which was intended to support subsistence farming and to protect the purity of indigenous communities from the ills of modernisation (Riding, 1985). In the art of Diego Rivera and Clemente Orozco, indigenous people are depicted as agents of Mexican history (Vaughan, 1997), becoming a vehicle for elites to develop a national identity of self-sufficiency. At this time, government officials also facilitated the development of handicraft production by indigenous communities as a symbol of Mexico's pre-Hispanic past (Guardino, 1996).

As a consequence of these historical decisions, handicraft production is influenced by both market and non-market forces, embedded in the existing social structure (Cook, 1970). The *Feria Nacional de Plata*'s (National Silver Fair) mandate is to promote the Taxco silver industry, stating that Taxco's silver production is part of Mexico's pre-Hispanic heritage, and that artisans from any region of Mexico are welcome to submit their products, with part of the mandate being to promote culture (Government of Guerrero, 2010). The National Silver Fair has created the belief that Taxco is an ancient silversmith centre, when in reality, evidence shows that the industry actually began in 1931, when William Spratling opened the town's first silver shop (Stromberg-Pellizi, 1993). The mandate of the *Feria Nacional de Plata* undermines the establishment of an innovation cluster, by failing to limit the production of silver jewellery to a distinct geographical area, as seen in the districts of Champagne, France. Once a year, the President of the Republic of Mexico presents the winner of the annual design competition with a trophy of an Aztec warrior (Government of Guerrero, 2010), ensuring that artisans become defenders of Mexico's culture. The production of such pre-conquest cultural representations also encourages the production of non-marketable items, with many of the best workshops in Taxco proudly displaying award-winning products that are readily offered for sale, but which gain very few buyers. The government's policy of utilising handicraft production as a symbol of national identity means that the institutions of *el artesano* assume that handicraft production is not subject to the same supply and demand forces found in the rest of the market economy, and therein lies the contradiction, as IS innovations are designed to add value to MSE by improving organisational performance. It is widely posited that the adoption of ICT tools will result in positive outcomes, by improving organisational performance (UNCTAD, 2003), with the UN and other international agencies targeting ICT adoption as key to accelerating development (World Bank, 2012). IS innovations are viewed as providing the opportunity to either expand market access or improve organisational performance.

The development of IS innovations is based on the assumption that MSE entrepreneurs are keen to find novel solutions to recurring problems. However, this research suggests that the source of the contestation is the basic opposition between the institution of *el artesano* and assumptions embedded within IS innovations

regarding how value is added to handicraft production, and how patterns of thought are shaped about developing IS innovations within the sector.

5.5.1. Exploring Contestation

IS innovations are often positioned as potential intermediaries that add value by improving organisational performance and corresponding incomes. It is this contestation of the cultural-cognitive held beliefs of *artesano* and the embedded understanding of what it means to be an *el artesano* that shape perceptions regarding the role of ICT tools within the sector.

Episode #1

During observational data collection phase at the Saturday market, the author had the opportunity to observe sectoral perception of the role of intermediaries in the delivery of value to the consumer. This narrative involves Informant #34 (father) and Informant #17 (son), who operate different MSE but who use the same sales channel, namely the son's stall, to market their products. The author interviewed and observed Informant #17 at his stall, which sells to both retail and wholesale buyers. During the observation phase, the author saw Informant #17's father (who would later become Informant #34) arrive with some silver jewellery and begin setting it up on a section of the stall. This became a unique opportunity to explore the intergenerational dynamics of the sales and marketing process. After Informant #34 had finished displaying his products he left, which afforded the opportunity to ask Informant #17 to explain the observational data gathered involving his father. He stated that his father places the jewellery on his stall without requiring recompense. Informant #17 believed that even though he was losing valuable shelf space and its associated sales opportunities, there was a normative expectation that he sell his father's products.

At the end of the market, the author returned to the stall with the intention of interviewing Informant #34. His justification for placing his product on his son's stall was that his products were sufficiently different, and thus did not harm his son's sales. An interesting cultural-cognitive facet of the discussion involved his stated belief that the sole value of the product is gained in its production, as he believed that intermediaries did not add any value.

This theme was further explored with Informant #47, who confirmed that her father also expected her to sell his products on her stall. It thus appears that the governance system permits the placing of products on another's stall, without any requirement for financial compensation. There is clear cultural-cognitive belief that sales, promotions, marketing and any other operational related activities (such as rent, wages or utilities) are non-essential, and do not add value, and therefore do not require compensation. Informant #34's perception that the making of jewellery is of primary importance deemed all other activities non-essential, and led to Informant #17 stating that he felt obliged to sell his father's products.

This cultural-cognitive belief that the process of making jewellery is the only thing that creates value, helps to explain why there is little thought given to developing IS innovations within the sector, as in general, there is very little thought given to any of the sales, marketing and supply chain management tasks associated with jewellery making.

Observational data collected about Informant #17 found that he spent most of his time at the Saturday market sitting and waiting. It was also notable that he physically travelled to placed orders with suppliers all over town, never appearing to use his cell phone to place or check on the status of orders. Because of the *mañana* institution, some of the orders were only partially completed; however he never expressed dissatisfaction or frustration about these non-completed orders, as he accepted that the order would be ready *mañana*.

The findings indicate that many MSE operating in this sector believe that the current outcomes from trade are unfair, which correlates with notions of betrayal that are deeply ingrained in Mexican society (Howell *et al*., 2007), with MSE believing that their low status ensures their continued exploitation. The informants had a near universal disdain for the more successful MSE, believing that any success required taking advantage of others.

> *"The big silver shops, they buy cheap and sell high"*
> **Informant #41**

> *"The export houses underpay"*
> **Informant #44**

> *"I've worked a lot, a lot of time with wholesalers but I never saw a profit… the result was a profit for them and not for me"*
> **Informant #50**

> *"They* [wholesale buyers] *exploit artisans"*
> **Informant #35**

For Informant #35, buyers are viewed as adversaries and not as partners in development. Furthermore, artisans are often forced to discount their products to guarantee a sale:

> *"Sometimes it's ridiculous because as a manufacturer it's obvious you're offering the best price because there's no middleman. There shouldn't be a discount"*
> **Informant #50**

Informants often believed that buyers did not understand the true value of their jewellery. To the MSE, their jewellery seemed to possess a symbolic value beyond the cost of the silver and labour inputs.

> *"They* [wholesale customers] *do not understand the value of the work"*
> **Informant #37**

> *"People* [customers] *will not pay for the value of the work"*
> **Informant #40**

The result is that buyers are often unwilling to pay what the artisan believes to be a fair price, which then creates an adversarial relationship between buyers and MSE. When the author adopted IS innovations to improve his business' organisational performance, by introducing a computerised point of sale system to create bar codes that would enable better recordkeeping, improved inventory controls and sales tracking, he sent the bar codes to Mexico, in order to reduce costs by having the labels attached by lower paid workers. The unintended consequence of this activity was an almost immediate increase in the cost of jewellery. These price increases were not related to supply and demand, but simply arose because jewellery manufacturers had discovered the final retail price. Therefore, it is clear that the sector has structured the

market exchange as an adversarial relationship, with buyers not perceived as trusted partners, but instead as a source of exploitation. Within the institution of exploitation, problems arise around the understanding of the artisans' role in society, with the institution of *el artesano* engendering a world view that jewellery possesses transcendental properties.

During the interview with Informant #43, the author was shown an item of jewellery produced for the Taxco Silver Fair. Informant #43 was very proud of the fact that it had secured first place, as shown in Image 5.1.

Image 5.1: Informant No. 43's Winning Design and First Place Award

By using the Seo and Creed (2002) framework it is possible to determine that the contradiction resides in the adaption of MSE to the demands for institutionalisation made in the revolutionary era. The adaption during that evolved during that period served the sector well, with *artesanos* integral to the development of a national identity. The resilience of notions of the art of the craft, which romanticised the pre-conquest era, has resulted in the development of a world view that continues to place higher emotional value on the development of an artefact, rather than on the production of a saleable handicraft. This enduring perspective has undermined the ability of the institution of *el artesano* to adapt to the changes present in ICT technology, which provides new structures for value creation within handicraft production.

5.5.2. Situating the Findings into Scott's Three Pillars

In the revolutionary era, handicraft production served as a counterweight to liberalism. This belief was further institutionalised in the post-revolutionary era, when artisanal production was mystified. This research has shown that informants are not merely artisans, as their cultural-cognitive identity has been institutionalised, and therefore their role in society is also perceived to be defenders of the pure pre-Hispanic / pre-modern history of Mexican society. As a consequence, the objects that are produced by artisans, whilst potentially priceless as symbolic artefacts, are very rarely bought or worn by Mexicans. This research identified two informants, #35 and #43, who had both achieved first place in the different jewellery competitions, but who both acknowledged that they had been unable to find a customer willing to pay a fair price for the prize-winning items.

Wholesale buyers are, by definition, buying low and selling high. The value they add emanates from moving products from a low value location to one in which they have a higher value. Using the Seo and Creed (2002) framework identifies the praxis as the misaligned interests of potential change agents, as MSE beliefs regarding what constitutes value creation within the sector are preventing the utility of basic principles, including strategies to improve sales and marketing with the concomitant adoption of ICT. The cultural-cognitive held world view related to the institution of *el artesano* as currently constituted, creates barriers to the sector's participants developing IS innovations, as any efforts made to improve market efficiency may be perceived as benefiting adversaries, namely wholesale customers. The institution of *el artesano* has thus proven a resilient barrier to the development of legitimacy of IS innovations.

Episode #2:
(Note: It was reflecting on this episode that moved the research from a positivist assumption towards a more contextualist approach, allowing the interpretation of the data based on a combination of personal experience and informant's stories to scrutinise complex social structures.)

This narrative describes the interview conducted with an MSE operated by a husband (Informant #6) and wife (Informant #5) team. The author had an existing relationship with Informant #5, as he had previously bought jewellery from her, when she had produced innovative designs that sold well. The couple were interviewed in

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Phase One of the research. During the interview, a noteworthy discovery occurred, in response to a simple question.

Question #8 focused on firm structure, and sought to determine the number of employees in the MSE and their relationship to one another. When answering the question about the number of employees, they both answered one, with both referring to the husband. The author paused, puzzled by what appeared to be the 'incorrect' answer, and repeated the question, to which they again answered 'one'. The third time, the author pressed the issue by asking about the role of the wife, at which point they both agreed that yes, there were two employees. Satisfied with obtaining 'correct', answer, the interview continued.

However, over time, the author became troubled, concerned that he had missed an opportunity to understand the sector. In reality, it was the author's world view that was interfering with the ability to recognise how the sector operated, and it became obvious that changing the answer was done to placate the author, and did not correctly reflect their world view. It seems that a more valid interpretation of their initial response is that neither respondent placed much value on Informant #5's weekly trek to the Saturday market, with her role as frontline sales staff; or on her marketing efforts, which were at best perceived as nominally important. Once again, the perceived value of jewellery lies simply in its manufacture, with a belief that sales generation is an automatic process. When asked about cell phone use, both respondents stated that they used cell phones to communicate with their friends and family, with neither mentioning using cell phones to contact customers. This interview episode reinforced the finding that there does not appear to be a genuine belief amongst artisans that ICT investments are required to secure economic development.

5.6. *Machismo*

The Mexican definition of *machismo* is believed to have emerged as a combination of the Spanish sense of honour with the indigenous humiliation of being conquered (Riding, 1985). During the colonial era of Spanish rule, immigration to Mexico was

available only to single men, arising from a belief that if families moved to the colonies the Crown would have to divert resources from export to the provision of public goods for new immigrants. The decision not to allow families to migrate served the Crown's needs, as fewer resources were then required to build and maintain public goods in the new world, allowing more of the generated wealth to be sent back to Spain. However, this policy had an unintended consequence, as Spanish men living in Mexico without their wives would often take Indian mistresses. This 'rape' of indigenous people resulted in the birth of *La Raza* or the Mexican people (Paz, 1985), and a possible manifestation of *machismo*, with mothers revered while wives are betrayed (Riding, 1986). This behaviour developed into the deeply embedded institution that continues to this day, in which *machismo* and gendered roles continue to dominate in Mexican society (Macias-Gonzalez & Rubenstein, 2012).

Paradoxically, aggressive antisocial behaviour may be employed as a coping mechanism to deal with the fragility arising from being the victims of Spanish conquest, while at the same time providing a positive ethnic identity (Arciniega *et al.*, 2008). Deeply rooted in Mexican culture is a belief that women are inferior (Riding, 1985), a finding first explored by Lewis (1963). More recently, authors continue to discover that maintaining hierarchies of power based on gender continues to be a feature of Mexican society, which serves the interests of the ruling elites and that gender inequalities and the overt discrimination of women continues to exist in rural Mexico (Macias-Gonzalez & Rubenstein, 2012). The notion that this institution is interminable is supported by numerous research studies undertaken across decades that have identified *machismo* as integral to Mexican culture.

The institution of *el machismo*, when combined with the institution *el artesano* creates the uniquely gendered assignment of IS innovation. *El artesano* is always associated with the male, as the female equivalent term of *la artesana* does not exist. Female owners are described as *doñas* and workers as *plateras*, while only the male owner or worker can be described as *el artesano*. This is similar to other professions, such as a doctor, who can only be termed *El Medico* or the male doctor. Within the institution of *machismo*, this research found a contradiction related to what constitutes

male and female work, that is influencing the gendered assignment of the development of IS innovation.

Within Mexican society it is apparent that there are clearly defined roles for males and females. This study proposes that the source of the contestation is a basic opposition to the concept of what constitutes male and female work; and assumptions embedded in the institution of *el artesano*, that have shaped patterns of thought about the gendered assignment of the development of IS innovations within the sector.

5.6.1. Exploring Contestation

During the interview process, discussions about the business use of IS innovations CT consistently became discussions about their daughters' use of such tools. The sector appears to hold very defined beliefs of the role of women in the sector, and whilst IS innovations are often presented in the literature as potential solutions to overcome development failure, this is not how the tools are perceived within this sector. A common response as to who is in charge of ICT tools was:

> *"I have Internet, but only my daughter uses it"*
> **Informant #40**

> *"She* [my daughter] *is designing a website"*
> **Informant #1**

The discussion with Informant #1 illustrated the gendered assignment of IS innovations. Informant #1 was by far the most successful MSE interviewed, although he had started out poor. He attributes his success to advice he received very early in his business career, when a foreign buyer asked him to make some exclusive products. The buyer told him not to take the product to the Saturday market to deliver what was ordered, and not to steal his money. In return, he was given the freedom to sell these exclusive designs to other buyers, as long as the product did not end up in Switzerland. Such basic business principles are not generally adhered to in Mexico. Informant #1 has a cell phone, but no email account. When asked about the potential benefits of developing IS innovations, he did not express confidence in such measures, but stated that his daughter was charged with establishing a web presence, although she was not compensated for her efforts. The conversation changed topic as he described how his daughter had just finished medical school and would soon begin

practicing medicine. In the two years since the interview took place, it is clear that there has been no work to create a website. This lack of development can be attributed to a number of factors, including a lack of commitment from Informant #1; and his daughter not being paid to complete the task.

This analysis identifies the contradiction as residing in the concept adaptation, which undermines future adaptability. The institution of *machismo* is a social structure that was adapted from the Spanish concept of honourable behaviour, to fit the context of colonial Mexico, and needed to reconcile honour and abuse. The previous discussion about *el artesano* revealed that it is only the act of handicraft production that is valued in the sector. The institution of *machismo* has adapted to challenge external exploitation by assigning a male role to *el artesano* in an effort by men to gain some semblance of honour and control. The introduction of IS innovations is perceived to undermine the role of *el artesano* and therefore threaten the status of males within the sector.

5.6.2. Situating the Findings into Scott's Three Pillars

The gendered assignment of ICT tools to female family members reflects the status attributed to IS innovations. In this instance, it is possible to identify the intertwining of cultural-cognitive world views of two institutions: *el pueblo* and what constitutes value added work; and the corresponding male identity embedded in *machismo*, which work together to marginalise IS innovations within the sector. There are normative expectations arising from clearly defined male and female roles in the sector, and therefore, assigning the development of IS innovations to daughters (rather than sons) signals the perceived limited value of ICT tools to the business, and thus impedes adoption. This pattern of behaviour aligns with artisans' identity as macho.

The sector has responded to the introduction of ICT tools and the potential development of IS innovations using new social structures, with the near universal non-compliance. Within the institution of *machismo*, the gendered assignment of the development of IS innovations to women signals its low priority, with the result that ICT tools are marginalised. When using the Seo and Creed (2002) framework to examine the praxis, it is possible to determine that the deeply held beliefs surrounding *machismo* have resulted in collective action against institutional change; an

interpretation that emerged from the data, as when asked about developing IS innovations, most informants indicated that it was a task assigned to females within the MSE.   Embedded beliefs related to *machismo* have thus proven resilient to attempts to develop a new social structure.

5.7.   *Mañana*

One of the most familiar Mexican institutions is *mañana*; with the keeping of appointments or being on time not part of the Mexican lifestyle (Castaneda, 2011). Foreigners may consider such inattention to punctuality as laziness, as the institution of *mañana* tends to evoke the image of a happy peasant not interested in improving their lot in life, epitomised in an apparent disinterest in delivering products on time today, and rather *mañana*.   However, the perception of Mexicans postponing everything until *mañana* is based on a misunderstanding of the meaning of the word, with Mexicans interpreting the word *mañana* as not meaning 'tomorrow', but rather as sometime in the future (Crouch, 2004). Drawing on Crouch's (2004) reasoning illustrates this common mistake, which is the result of such differences in understanding; when an American buyer may well expect a product to be ready tomorrow, while the Mexican did not intend *mañana* to represent a fixed day.   The transactional nature of American culture results in a world view that constantly envisages a finish line or end; and this may be frustrating for American customers, who believe that time is both linear and measurable, and that once a sale is complete, the project is over. This frustration is a common theme in practical guides advising on how to undertake business negotiations in Mexico (e.g. Fox, 2005).

However, Crouch (2004) points out that Mexican culture tends to view time as circular, with a rhythm and discernable pattern of its own.   The Aztec calendar is round and comprised of a series of circles, in which time always returns to the same place, linked to a belief that the events from the past are repeated in the future.   This leads to a presumption that in business there are good times and bad times and therefore there is little an MSE can do to change this pattern.   Informants believed that if sales were currently weak, *mañana* sales would increase; conversely, if sales are currently strong, there is always the belief that *mañana* something will happen to return the MSE to their natural state of poverty.   This belief is reinforced through the

institution of *caciquismo*. For example, if an MSE is flourishing, they understand that *mañana* the buyer may block their continued success through piracy, when the buyer may find someone else to make the item at a lower cost. Mexicans tend to be fatalistic, holding a world view that accepts that they are not 'masters of their own destiny', and instead that they simply respond to outside forces. There is a clear inter-relationship between the institution of *mañana* and *el pueblo*, as if *mañana* elites will capture any benefits, then MSE need to support each other through the institution of *el pueblo*.

Within the institution of *mañana*, this research has identified a contradiction related to the concept of time and how it relates to the benefits of IS innovations, that is negatively impacting upon the development of IS innovations within the sector.

When viewed from a market perspective, MSE operate to deliver products to customers and generate income as owners. This research advocates that the source of the contestation is a basic opposition of the concept of time, present in the institution of *mañana*, and assumptions embedded in ICT tools regarding the ability of IS innovations to accelerate MSE development, that have shaped patterns of thought about the potential benefits of adoption of IS innovations within the sector.

5.7.1. Exploring Contestation

This discussion has established the enduring nature of the institution of *mañana*. Nevertheless, institutionalised beliefs about *mañana* are being contested, within the institution of *mañana*, and this research has identified a contradiction related to concepts of time held by female and male informants, with conformists being male and change agents female. The initial awareness of such a gender-based contestation resulted from two interviews held with two separate MSE. While recognising that two is a very small number from which to draw conclusions, what is noteworthy is that both of these interviews were conducted with women while there was no male present. The first interviewee (Informant #54) was a sole proprietor, an unusual structure for an MSE in the sector, as research has shown that the typical MSE includes a husband, wife, and any unmarried children. Informant #54 explained that her husband used to be involved in the business, but that he did not like making jewellery and so he became a ranch hand at a local cattle ranch. The second interview

was with informant #45, who worked in a more typical MSE, although during the interview her husband was out for the day and therefore not present.

Question 6(d) asked Informant #45 if there was ever a time that she was unable to fulfil an order on time. Informant #45 then revealed the difficulty she encountered in fulfilling orders when relying on male workers and suppliers.

> *"Yes, yes, well for example the time… if you are in urgent need of some pieces that you have to deliver, sometimes you go and* [try to pick it up]*… they don't deliver them on time, and they can do it, because they get away with it. It is a defect that we* [Mexicans] *have… the workers, the problem is that they are too informal… I mean around here typically it's common for them to be…. How can I say this?... They are conformists* [to society]*. I mean if they get a job, a certain... their salary is they say: "I can make it this week with this much"; they don't put an effort forth to, to get the work out fast. If they need little money, they only work a little… that's why Taxco is the way it is, that's why there's no progress, because people… because of everything… everything…all those kinds of details, piracy, conformists. Women are more responsible"*
> **Informant #45**

Through this response it is possible to identify a pattern that asserts male conformity to existing institutions as a hindrance to economic progress in the sector. To confirm if this interpretation represents a reflective change in the collective consciousness of women in the sector, their comments are contrasted here against those of Informant #35. He too acknowledged that sometimes he was unable to deliver an order on time, but he attributed it to the individual behaviour of one of his suppliers, and not to the culture of all males.

> *"Yes, but one time for example, in this case it not only depended on me but on someone else too… I finished all this* [my] *part but the delivery date came and I didn't receive the* [other supplier's part]*. We couldn't deliver on that date, but it wasn't my fault it was the other provider's fault."*
> **Informant #35**

136

As previously discussed, it is very common for MSE not to supply an order on time, despite the fact that timely delivery is important to many buyers. Most buyers only stay in Taxco for a short period of time, usually two or three weeks, adopting a strategy to buy what is ready, and to place orders for what else is needed, in the hope that if given enough time the MSE will deliver. Other buyers may simply come for the Saturday market, buying whatever the MSE have ready at that time and then leaving. Such buyers don't bother placing orders, since they can't wait for *mañana.*

The response of Informant #54 helps to further illustrate the contradiction, clearly differentiating between male and female world-views. She suggested that males have no consideration for deadlines, while females are more dependable employees. Informant #54 has established new social interactions, by only hiring women, since she believed that they were more reliable.

> *"Because for example we used to have, used to have three* [male] *workers. Suddenly on some Mondays they wouldn't come to work because they gave any excuse. They were drunk or whatever… for example, making the change, a woman comes in at 8 in the morning... She leaves food and everything ready at her house before she comes in… A woman does her job and fulfils the order, no matter what. With men well they tend to give more excuses".*
> Informant #54

It is clear that institutional conformity has created inter-institutional incompatibility. The adherence of men (and arguably most women) to the institution of *mañana* has created inter-institutional incompatibility between the institutional norms of time against the market demands for punctual delivery. The author's personal experience helps to illustrate this contradiction. When travelling to Taxco in November and December to place orders and obtain stock for the Christmas season, it was possible to collect most of the orders, but as was customary, a number of MSE did not deliver. One particular MSE, who failed to deliver his order on time, was supposed to provide Christmas themed jewellery (earrings that looked like Christmas ornaments). However, when another visit was made in January, they promptly produced, from under the table, the order for Christmas themed jewellery, although as a Christmas themed item, it was by then of little use. This example helps illustrate how a different

concept of time can impact upon MSE behaviour. The MSE had kept the product, because they felt that eventually it would be collected. However, in the process, the MSE missed multiple opportunities, prior to Christmas, to sell the product to others who may have been interested in such seasonal products.

5.7.2. Situating the Findings into Scott's Three Pillars

The institution of *mañana* resides in the cultural-cognitive pillar. A common statement heard in Mexico is that Mexicans work to live and not live to work. However, interviewing two women separately from men provided a rich insight into female perceptions of gendered roles, and highlighted the possibility for new structures to solve enduring problems.

When discussing issues of conformity, Informant #45 initially used the personal pronoun 'we', which appeared to include both male and female members of the sector. However, at the end of her statement she clarified her position to clearly indicate that she was referring solely to men as the conformists.

The 'typical' Mexican MSE world view is that orders can wait. When exploring the praxis according to Seo and Creed (2002), it is possible to identify that women are starting to resolve this institutional contradiction through a reflective shift in collective consciousness; through the identification of the weakest link: namely the institutionalised norm of *mañana* and its male adherents. Figure 5.1 illustrates this reflective shift in collective consciousness about the cause of poverty. In the beginning, the family is poor, and as a result they enter the handicraft sector to earn money to escape from poverty. When they achieve multiple orders, they need help to fulfil them and so hire additional workers. The male workers do not deliver on time, which results in the loss of money on existing sales, and thus the cycle returns to the beginning.
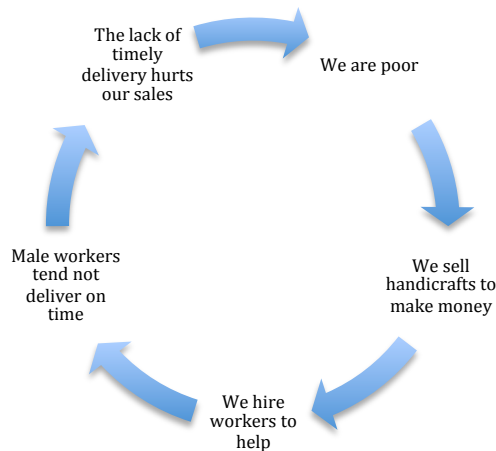
Figure 5.1: Informant #54's Perception of the Cycle of Poverty within the Sector

The changes in Informant #54's behaviour are subtle, and are manifested through a more transactional view of time. Informant #44, who explained that when she was busy with orders, she would forgo visiting her mother or other personal obligations, supports this interpretation. By choosing to only hire women as employees, Informant #54 demonstrated the reflective shift in her consciousness, a change that arose from the partial autonomy only afforded to her because her husband had chosen to leave the MSE, and thus enabled her to alter her role within the MSE. Her willingness to dismiss the male workers, who were steadfastly adhering to the normative behavioural expectations of *mañana*, is an example of the development of a new social structure.

The findings indicate that a number of the women interviewed appeared to be aware of a number of perennial problems associated with traditionally gendered roles and their impact on organisational performance. The contradiction emerged as a result of an idiosyncratic process of females assuming leadership roles in MSE, and a shift in the understanding of the causes of sectoral underperformance, which endorsed the view that the existing institutional arrangements within the sector limits the generation of new structures, and was the combination of the more general changes in collective consciousness emerging amongst women. Informant #54 had also participated in a specific ICT training programme, which also increased her awareness of the contradiction of existing social structures. It appears that the combination of her ICT training, the unique structure of her MSE, and a recurring failure to fulfil orders that she attributed as the fault of male employees, that allowed

her to envision an alternative social structure and thus contest the institution of *mañana*.

In addition, Informant #54 was also experimenting with IS innovations, possibly as a result of her unique social structure. She was the only informant that was able to produce archival evidence of her efforts to digitise images of her designs, presenting a digital file of some 20 designs. The significance lies of this electronic catalogue lies not in its size but in its very presence. The evidence that she is developing new social structures within her MSE demonstrates a gradual shift towards the adoption of IS innovations. Whilst a variety of socio-economic barriers may prevent further development, what is noteworthy is that her actions have begun to address the many institutional constraints visible in the adoption of IS innovation.

5.8.   *Egoismo*

Egoism is defined as behaviour that has the ultimate purpose of furthering one's self-interest (Shaver, 2010). A belief in self-importance and egoism is viewed as a social ill within Mexican peasant societies (Aguilar, 1984), as pursuing individual interests runs counter to the institution of *el pueblo*. However, the literature on Mexican peasant communities complicates this assumption, as individuals consider the impact of their behavioural decisions on the broader community (Lewis, 1963; Aguilar, 1984). These communities view *egoismo* extremely negatively, and individuals who brag about their successes are subject to ridicule (Aguilar, 1984).

The neo-liberal model of ICT adoption makes assumptions regarding the motivations for behaviour, which were discussed in the positivist section of the literature review. The Mexican government has adopted a neo-liberal approach to economic development, and the associated training programmes are designed to use market forces to lift the poor out of poverty (Mexican Ministry of Communications and Transportation, 2012). Adam Smith, in 1776, first proposed the idea that a society benefits when individuals act in their own self-interest; and this concept remains a fundamental organising principle of western economic philosophy (Smith, 2005). A key concept in the positivist literature is the need to identify successful individuals and use them as an example of the potential benefit of adopting ICT tools. Literature

on the Diffusion of Innovation (Rogers, 1962) posits that 'champions of innovation' are a key to the successful adoption of IS innovations within a sector, with Porter (1998) further proposing that the nature of inter-firm rivalry is a determinant of successful development. There is therefore an assumption that competition encourages firms to improve their products and services, resulting in improvements in the performance of the firms that provide the best products. The theory posits that firms cluster around each other in order to gain from the positive benefits accrued by successful firms, with inter-firm rivalry also supposed to improve sectoral performance. Tolbert and Zucker (1996) highlight the importance of sharing ideas and working together to find solutions to common problems, and therein lies the challenge in Mexico, since the spreading of IS innovations is facilitated through the dissemination of experiences about what worked and what did not.

The diffusion of IS innovations is based on assumptions that rely on MSE entrepreneurs working together and sharing ideas to find novel solutions to recurring problems. This study proposes that the source of the contestation is the basic opposition between the institution of *egoismo* and the requirement to share ideas about IS innovations in order to solve recurring problems, which shapes the patterns of thought about IS innovations within the sector.

5.8.1   Exploring Contestation

This section presents the data collected from an interview with Informant #58. It juxtaposes the government's neo-liberal assumptions regarding the benefits of ICT adoption, with the sectoral response to an Informant's attempt to implement neo-liberal principles within the Taxco Silver Handicraft Sector.

This study has already highlighted that there appears to be a limited exchange of information between MSE, and that individuals do not spend time talking to other MSE regarding the strategies that are adopted to improve sales. This is illustrated in the findings, where informants and suppliers spoke about personal rather than business issues during the ordering process. In additional, it seems that informants are unwilling to enter another MSE's stall at the market.

The informants interviewed in the course of this research were very reluctant to disclose basic sales information, behaviour that is consistent with a belief that egoism is bad, coupled with a distrust of the author's motivation to want to find out this information. The only details regarding sales that informants were willing to provide was a general assertion that sales were better last year or a few years ago.

As previously discussed, the government established e-Mexico as part of the mechanism for meeting their Millennium Development Goals, with the stated aim of using IS innovations to improve market opportunities for poor people. One of the tactics employed was to provide ICT training programmes to MSE, with the hopes of improving incomes (Mexican Ministry of Communications and Transportation, 2012). The training programmes are based on neo-liberal assumptions that individuals are motivated by a desire to optimise their own individual gain; for example, Informant #58 stated that the course curriculum had focused on how delegates could increase their income by providing better services to clients by using ICT. Informant #58 had attended one such government ICT training course, and attempted to implement the strategies suggested by utilising the Internet to improve the ordering process for a client.

Under the current system, all MSE generate income from what they are able to sell. As has been illustrated in detail, the most typical approach is for MSE to set up a table at the Saturday market, displaying their products and then patiently waiting for customers to arrive to buy their goods.

The IS innovation that Informant #58 attempted to pilot would have allowed his client, based in New York, to buy from multiple MSE without having to incur travel costs. He also offered consolidation services to the American client, proposing to collect orders from various MSE and shipping them together to New York. The potential benefits were obvious, as this IS innovation would have saved the client both time and money, allowing him to conceivably re-order goods using email, rather than physically travelling to Mexico. As a consequence of the application of this innovation, the MSE would benefit from the increased frequency of orders likely to result from a decrease in the cost of the ordering process, if not an increase in the total aggregate of goods ordered. Informant #58's proposed strategy appears reasonable, as

the small size of MSE means that no one supplier is significantly large enough to justify numerous separate shipments. Initially, the other MSE were comfortable with this proposal and agreed to participate, with Informant #58 indicating that the other MSE supplied their respective products successfully the first time the client placed an order using the new system. However, when the client placed a second order, these same MSE stopped supplying their products. Informant #58 explained that:

> *"Something inexplicable happened, maybe they're idiosyncratic, sometimes they prefer selling their merchandise to a wholesaler that doesn't treat them as well* [as I do] *and they left me hanging. I was selling that merchandise but for a strange reason once I started to ask for more they would stop supplying me and I would look bad in front of the client"*
> Informant #58

This quote succinctly illustrates what Seo and Creed (2002) identify as adaptation, which undermines future adaptability; and which was obviously the sectoral response to Informant #58's attempt to introduce a new structure. Their refusal to participate can be interpreted as a deliberate strategy to prevent *caciquismo* arising from IS innovation based exploitation. The interpretation of non-compliance is perceived as an institutional response to the introduction of a new structure that held the potential to alter the relative balance of power. The praxis is based on the misaligned interests of potential change agents, with the informant's quote illustrating his belief that he was behaving honourably (*el pueblo*). It does not appear that the response from the MSE was actively coordinated, suggesting instead that it was simply a presupposed reaction that emerged from deeply held beliefs concerning the inappropriateness of egoism.

The piloting of a new social structure may appear to align with the institutions of *el pueblo*, and the concomitant requirement to look after the community. The praxis is based on the potential for changes in the relative balance of power, which could result from the successful development of the IS innovation. Informant #58 was perceived as wanting to become a *caqui* by gaining power through his role as consolidator. While all MSE may desire increased sales, they will not allow any one firm become a *caqui* through egoistic behaviour.

5.8.2. Situating the Findings into Scott's Three Pillars

Informant #58 was puzzled by the refusal of other MSE to support his IS innovation, designed as it was to help increase sales for all participants, also appearing to meet the criteria set out in the Tolbert & Zucker (1996) framework for being technically and economically viable. However, despite this, other MSE responded to the generation of a second order by refusing to supply their products.

The reluctance of individual MSE to pilot possible ICT solutions resides in the normative pillar, as MSE are obeying the rules associated with non-egoistic behaviour. The basic requirement to pilot potential solutions appears to run counter to cultural-cognitive knowledge regarding how marginalised communities in Mexico behave. The findings of this research indicate that the sector continues to behave according to the norms designed to prevent egoism.   The small size of MSE means that they do not have the variety of products necessary to adequately supply buyers by acting independently, while the enduring institutional structures against egoism prevent those same MSE from working together, as constructed in the neo-liberal development model. The cultural-cognitive world view against egoism prevents any one individual from developing IS innovations in order to improve organisational performance, revealing instead that neo-liberal development models run counter to the multiple institutionalised norms and cultural cognitive beliefs present in the Taxco Silver Handicraft Sector.

The findings of this research suggest a passive approach to sales generation, based on the prohibition against *egoismo*, with a clearly identifiable belief that customers should seek out jewellery manufacturers, and not the other way around.

> *"The customer tell us that they will get in touch with*
> *us when they want more product"*
> **Informant #48**

> *"I wait for customers for contact me"*
> **Informant #46**

> *"I don't do anything to sell"*
> **Informant #45**

"The customers come find me when they need more product"

This lack of effort dedicated to the sales generation process is also embedded within beliefs about *egoismo*, with informants tending to follow specific scripts that align with their cultural-cognitive belief systems; setting up their stalls and conducting sales generation activities within defined norms.   Observational data revealed that the appearance of all the stalls is similar, a factor that is described as isomorphic behaviour (Powell & DiMaggio, 1991), which is manifest in the informal rules against ostentatious displays. There are normative expectations regarding acceptable sales generation routines, which begin with informants inviting potential buyers to *escoge sin compromiso* or to 'look without commitment', rarely highlighting the quality of the product or the advantages of purchasing the item that is being examined, and instead directing customer's attention towards other items. This behaviour is consistent with the normative obedience to the cultural-cognitive identity as non-egoistic, with the informant unwilling to boast about the qualities or unique design features that make the item an appropriate purchase. There is an expectation that the buyer will take the initiative if they want to purchase the product, and that therefore their role is to passively wait as potential buyers walk by. To deviate from this norm, while potentially improving the sales generation process, would risk subjecting the informant to community sanction as an egoist.

5.9.   *Fatalismo*

"Sometimes I sell a lot and other times others sell more" Informant #37

In Mexico, *fatalismo* or fatalism is the general acceptance that economic, social, and political advancements are not based on merit, and instead rely on a higher force (Pick & Sirkin, 2010). *Fatalismo* has long been identified as a problem that impacts on all socio-economic levels in Mexican society (Lewis, 1963), with more recent research confirming that the power of *fatalismo* continues to prevail. A general acceptance of the way things are becomes an obstacle to autonomous decision making, even when the current situation negatively impacts upon the individual (Pick & Sirkin, 2010).

Paradoxically, other researchers have found that Mexicans readily admit that they too would take advantage of others if the opportunity arose (Riding, 1985), and as such, Paz (1985) believes that *fatalismo* gives Mexicans only two choices in life: to become the *chignon* (the male that betrays others) or the *la chignada* (the female that is betrayed). The *chignon* is associated with *machismo*, and it is noteworthy that the *chignon* gains power and prestige in Mexican society by *chignando* (fucking over) others (Cypess, 1991).

Research suggests that many Mexicans believe that it is acceptable to betray someone else before they betray you (Paz, 1985), the result being that they become both passive recipients and active contributors to *fatalismo*. Numerous studies have noted that Mexican society functions with low levels of trust (Foster, 1965), an assertion that continued to exist some 20 years later (Riding, 1985). More recent research has usefully increased understanding of how trust functions in Mexico, with Casson and Guista (2004) asserting that there is a deeply embedded distrust of outsiders, with Mexicans resenting the abuse of power by others, while simultaneously admitting that they too would take advantage of others if given the opportunity. As previously discussed in relation to the institution of *confianza,* Mexicans have devised a strategy of establishing personal relationships that can be viewed as a strategy to ensure that others does not *chignar* (betray) them.

In contrast is the neo-liberal assumption that individuals have their fate in their own hands, as evidenced in the assumptions contained in the Diffusion of Innovation (Rogers, 1962), in which early adopters and innovators embrace IS innovations in order to gain competitive advantage. This theory is based on beliefs embedded in the Theory of Reasoned Action (Maddon, Ellen & Ajzen, 1992), in which individuals are assumed to be actually in control or perceive to be in control of their own situation, with the assumption that the more individuals believe that they are in control, the greater the likely development of IS innovations. The clear contradiction evidenced here is that Mexicans do not believe that they are in control of their own fate, believing as they do that *fatalismo* determines their destiny.

Within the institution of *fatalismo*, this research identified a further contradiction related to the trust required for the successful adoption of ICT tools and associated

development of IS innovations to improve organisational performance; and the institutionalised belief of *fatalismo*. The source of this contestation is a basic conflict between the institution of *fatalismo* and the assumptions embedded in IS innovations regarding autonomy, which shapes patterns of thought about how the development of IS innovation will benefit the sector.

5.9.1. Exploring Contestation

MSE operate within a social structure that has low levels of trust and which characterises the nature of inter-firm rivalries. This contest emanates from the Mexican belief in *fatalismo*, which supposes that all are doomed to betrayal. This contestation highlights the differences in assumptions related to social interactions, and which results in the production of a cultural-cognitive identity as both a *chignon* (betrayer) and *chignada* (betrayed), and which is preventing the development of IS innovations. These identities are partially formed through the institutions of *caciquismo*, in which the politically connected secure the best sales spots. However, there is more to *fatalismo* than elite capture alone, with the findings indicating that *fatalismo* is actually a three step process which undermines the development of IS innovations.

Firstly, individuals view their own behaviour as honourable, although this belief is not attributed to others or reciprocated, as discerned from the interview with Informant #35, in which he states that he treats people honestly:

> *"I treat my 'employees' honestly, always, always, always!"*
> **Informant #35**

Secondly, the behaviour of others is often expected to be dishonourable (*chignon*), with the findings indicating that informants believe that they act honourably.

> *"My prices are just, others have prices that are too low"* **Informant #35**

Thirdly, as individuals, they must *chignar* (betray) before they become the *chignada* (the betrayed). When referring to others in the sector, informants often viewed the behaviour of others as unjust, with the perceived injustice of others legitimising their own behaviour.

> *"There are items that everyone has* [manufactures] *so*
> *you defend yourself by offering it cheaper"*
> **Informant #48**

The relationship within the supplier support network is clearly adversarial, with findings appearing to indicate that artisans believe that their input suppliers are cheating them.

> *"[In] the diamond cutting there is a silver loss of .3*
> *grams* [per gram] *that we lose and the diamond cutter*
> *gains"* **Informant #50**

> *"The pendant supplier is ripping me off"*
> **Informant #35**

A consistent feature of the sector is the high level of design piracy, which was previously noted by Stromberg-Pellizi (1993) and which was supported by the findings of this research. A casual observer strolling through any of the markets will invariably notice a multitude of duplicated products. During the two data collection phases, almost all informants admitted to pirating designs, although the responsibility for piracy is invariably placed on another agent. This adversarial position contributes to the high levels of resistance to the introduction of any IS innovation.

> *"Yes, I copy (pirate) designs, sometimes a customer*
> *brings me a piece from somewhere else and I make it "*
> **Informant #37**

Informant #40 goes further, by suggesting that technology is not only a new source of piracy, but ultimately risks undermining the sector:

> *"Technologia nos baratada"* ["Technology is cheapening us"]
> **Informant #40**

This quote from Informant #40 has been left in its original Spanish, because the word *baratada* has a clearly recognisable meaning in Mexico. It comes from taking the noun for inexpensive, which is *barato* and combining it with the noun for assembled, which is *fabricada*. Creating the verb baratada to mean 'cheap and poorly made'. In addition, it is noteworthy that the informant used the pronoun *nos* referring to 'us' as opposed to the pronoun for 'it'; to describe the negative impact of technology. The

meaning that he was conveying was that technology is not only cheapening the product, but also the entire organisational field or community of artisans. This adversarial position supports the interpretation that the introduction of any technological innovation is perceived as a threat to artisans and their products. Technological innovations could potentially change the structure of the market, transferring value from the art of making the product, to other functions such as sales, marketing and management, arguably diminishing the worth of the artisan within the sector.

This analysis identifies the contradiction, as residing in the concept that institutional conformity creates inter-institutional incompatibility. An established feature of Mexican identity is the identity of honour (Najera-Ramirez, 1994), a conformity that is manifested through the highly symbolic actions of self-sacrifice as evidenced by the sharing of orders amongst *el pueblo*, despite observational data suggesting that they have both the skill and extensive leisure time required to complete orders in-house. This honourable belief in their own actions is contrasted with the expectation that others will take advantage of them. The paradox is that there are normative expectations that individuals will both betray and be betrayed. A typical response to betrayal would be *ni modo*, which means 'it doesn't matter', as the system allows informants to betray others while still maintaining their own honourable identity. This conformity creates an incompatibility within the institutions of trust, with the result being that informants cannot develop or share IS innovations, as to do so could enable the other MSE to betray them; as the more that they share with others, the greater the inevitable betrayal will be.

5.9.2. Situating the Findings into Scott's Three Pillars

The relationship between MSE in the sector is adversarial. Using the normative pillar, it is possible to describe piracy as a normative expectation, with the customers upon whom artisans depend on for orders also a source of the piracy that undermines their property rights and prevents them from earning innovation rents (the profits earned by developing new and innovative designs). In a market with few customers and many producers, it becomes almost unimaginable that an informant would decline a request from a customer to pirate designs, as the cost of such a refusal would be the loss of the sale and the needed income to buy the most basic necessities. The findings

149

of this research identify a near universal adherence to piracy, which has become widely accepted within the sector.

MSE maintain a degree of control by resisting the development of IS innovations, as they believe such innovations will simplify the piracy process. It is evident that this strategy is of limited effectiveness, since a buyer can simply purchase one item and then have someone else make it cheaper, and whilst informants appear aware of the limited effectiveness of this strategy, they are reconciled to its outcome, taking some comfort from the fact that the current system ensures that they at least generate some revenue from the process, as the customer must buy a couple of samples prior to pirating their designs.

When examining the praxis when using the Seo and Creed (2002) framework, it is possible to identify that misaligned interests of potential change agents run counter to deeply embedded beliefs of *fatalismo*. It appears that the sector is using a defensive strategy to limit the development of IS innovations, with *confianza* also undermining such development. While it is obvious to a casual observer that there are high levels of piracy in the sector, informants appear unwilling to assume any responsibility for the low levels of property rights, as it is only after positioning piracy as something that is done to them by another MSE, that informants admit their own role in any piracy, consistent with the cultural-cognitively held paradox of Mexican society, that MSE are both a *chignon* (betrayer) and the *chignada* (betrayed).

5.10. Summary

This chapter has presented the key research findings emanating from the data. The contextual background provided rich insights into the sources of contradiction, while the data was analysed using a new theoretical framework that combined the Seo and Creed (2002) concepts of contradiction and praxis within Scott's three pillars of institutions to explore the contestation inherent to the process of institutionalisation, which allowed the exploration of the sector's reliance on the institutions of *caciquismo, confianza, el pueblo, el artesano, machismo, mañana, egoismo* and *fatalismo* to respond to the introduction of ICT tools and the developments offered by IS innovations.

Table 5.1 summarises the key research findings of the contestations situated within the eight institutions. The first six examples presented relate to the contestation integral to the introduction of ICT tools and the potential benefits offered by the development of IS innovations. The final two institutions presented relate to the contestation regarding individual agents attempting to develop IS innovations.

Institution	Source of Contestation		Type of Contradiction	Type of Praxis	Outcome
	Change agents	Conformists			
Caciquismo: a system of local patronage networks based on political allocation of economic rewards	Government ICT training programmes based on equality of opportunity	Sectoral agents believe that external agents (ICT tools) are designed to exploit	*Sectoral isomorphism appears in the form of non-participation in ICT training programmes embedded in a cultural-cognitive belief of the persistence of caciquismo. This conflicts with the divergent idea of equality of opportunity*	The response of agents is a *collective action resilient to institutional change*	The sector proved resilient to the institutionalisation of a new structure. However, there is a *gradual shift*, as two MSE did participate in training. Interpretation emerges from the near universal non-participation in ICT training programmes

151

Outcome		The sector has proven very resilient to IS innovations, with strong institutional pressure to maintain *confianza*.	The outcome of institutional resilience is partially based on the requirement for community responsibility. The development of IS innovation is of limited value as the sharing of orders is not designed to improve efficiency, but building legitimacy within *el pueblo*.
Type of Praxis		The response of agents to IS innovation demonstrates misaligned interests.	The collective action by agents *is resilient to institutional change*
Type of Contradiction		Sectoral agents develop the institution of *confianza* as a means to facilitate trade in a social structure of low trust. Serves as a substitute for a weak and biased regulatory state, but undermines the ability of the sector to adapt to the introduction of ICT tools	Sectoral agents build legitimacy within the institution of *el pueblo* by sharing orders.
Source of Contestation	Change agents	IS innovations permit transactions with low levels of personal contact	The IS innovations are a tool to improve MSE efficiency
	Conformists	Sectoral agents believe that high levels of personal contact are required to conduct business transactions	Sectoral agents believe that they must look after each other, in fear of *caciquismo* (elite capture)
Institution		*Confianza*: the process of social interaction designed to determine if a person is trustworthy enough to conduct business with	*El pueblo*: a social structure to provide community support as a response to *caciquismo*

Outcome	The institution of *el artesano* is resilient to efforts to improve efficiency, with an outcome that is based on a sense of exploitation	The institution of machismo is resilient to the development of new social structures with ICT tools marginalised and defined as women's work	The findings identify a gradual shift in the collective consciousness of women.
Type of Praxis	The response of agents to the misaligned interested of IS innovations results in the institution of *el artesano*	The response to the potential of IS innovations is embedded in the institution of IS of machismo, with the development of IS innovations marginalised through its gendered assignment	Institutional contradiction causes a reflective shift in the collective consciousness of women, with a realisation that the institution of *mañana* is undermining economic development
Type of Contradiction	Sectoral agents build legitimacy of *el artesano* through a cultural-cognitive belief in the symbolic value of handicraft production	The adaptation of the institution of machismo is a cultural-cognitive response mechanism to manage exploitation; however it undermines future adaptability to potential benefits of IS innovations to reduce exploitation	The institution of *mañana* has institutionalised conformity, creating inter-institutional incompatibility with neo-liberal assumptions of time as money
Source of Contestation — Change agents	IS innovations are sources of value creating activities	The development of IS innovations is gender neutral	Informant #54 attempting to impose strict deadlines for product delivery based on a more linear concept of time
Source of Contestation — Conformists	*El Artesano* reinforces the belief that making is the only part of handicraft production that adds value	Sectoral agents combine institutions of *machismo* and *el artesano* to enforce a definition of what constitute male and female roles within the sector	Adherence to the institution of *mañana* and a belief in the circular nature of time result in an absence of strict deadlines
Institution	*El artesano*: a social construct of the revolutionary era. Supports the notion of a strong nation that does not need liberal economic integration	*Machismo*: a combination of confidence evolved through the Spanish sense of honour, and insecurity resulting from the conquest of indigenous populations	*Mañana*: literally means tomorrow, but more accurately means the future

		Egoismo	Fatalismo
Outcome		The outcome could be a gradual shift by informant #58 in developing a new social structure, but at a sectoral level there is a strong resilience.	The institution of *fatalismo* has proven resilient to the development of IS innovations. There was an almost universal belief that ICT tools would undermine economic development by accelerating piracy
Type of Praxis		Sectoral response demonstrates a cultural-cognitive prohibition against piloting IS innovation as egoistic behaviour	Suspicion of the interests of potential change agents
Type of Contradiction		Marginalised communities developed the institution of *egoismo* as a normative mechanism to enforce conformity and prevent exploitation, undermining the ability of the sector to adapt to technological change	Sectoral agents' *institutional conformity* to the belief that destiny is pre-ordained *creates inter-institutional incompatibility* with ICT tools as potential change agents
Source of Contestation	Change agents	Informant #58, attempted to develop an IS innovation to improve the re-ordering process	The introduction of ICT tools as external agents that will deliver development
	Conformists	Adherence to the institution of *egoismo* and its prohibition of egoistic behaviour	Belief in *fatalismo* results in the low trust of outside agents
Institution		*Egoismo*: a prohibition of behaviour that promotes self-importance. Considered a social ill in Mexico	*Fatalismo*: The belief that an outside force controls an individual's destiny

Table 5.1: Summary of Key Research Findings

Chapter 6: Conclusion

6.1.   Introduction

This chapter provides a summation of the key components of this thesis. It restates the research objectives and discusses how this study has addressed the existing gaps in knowledge and thus furthered understanding of the institutional influences relating to the adoption and non-adoption of IS innovations within the Taxco Silver Handicraft sector.

The chapter is organised as follows. After the introduction, the second section outlines the key components of this thesis. The third section reviews the four research gaps first identified in Chapter 2. The fourth section evaluates this research using Myers' (1997) seven-point guide; also presenting the theoretical, methodological and practical contributions of this research. The final section discusses the limitations of this research and identifies areas for future investigation.

Chapter 1 outlined the primary objective of this study, namely to explore the process of adoption and non-adoption of IS innovations in the Taxco Silver Handicraft sector, with the aim of interpreting MSE behaviour as it relates to the adoption of such innovations; and how institutional factors can influence this behaviour.

Chapter 2 provided a thorough literature review and also introduced the theoretical framework. This chapter examined both positivist and interpretivist explanations of adoption and non-adoption behaviour, finding a multiplicity of positivist research, although there are significant questions about the suitability of such an approach in developing countries.   The literature review revealed that the adoption of IS innovations in developing economies does not easily fit into numerous positivist models.   Interpretivist research partially fills the gap in the understanding of local context, and how it influences adoption and non-adoption decisions, although there remains a paucity of such interpretivist research (Walsham, 2006), a gap that this research helps address. This chapter then introduced the theoretical framework selected for data analysis, which was developed as an iterative process, with three

different frameworks developed and tested before being discarded in favour of developing a unique theoretical framework, combining Scott's (2008) three-pillars of institutions (regulative, normative and cultural-cognitive) with the Seo and Creed (2002) concepts of contradiction and praxis. The design of this framework allowed the research to explore both the institutional factors and the contestation between agents that occur when new social structures are introduced into an organisational field.

Chapter 3 presented the research methodology adopted, namely an ethnographic case study. This approach is consistent with the research objective of exploring the role of institutions in adoption and non-adoption behaviour by MSE, providing an understanding of existing institutions, and allowing allow a high level of researcher embeddedness in the phenomena under scrutiny. The chapter also outlined the methods of data collection (interview, observation and review of archival data) and analysis, which was an iterative process working with the data over time to develop interpretations of the empirical data.

Consistent with the ethnographic method, Chapter 4 summarised the historical development of the sector, and the context into which IS innovations are being introduced. This was undertaken using the institutional logics (Alford & Friedland, 1995) of the state, religion, democracy, family and the market. This chapter also specified the national and local policies and initiatives directed towards IS adoption, as well as the schemes designed to assist sectoral development. The final part of this chapter provided a description of the research sample, identifying that handicraft production is typically carried out by some of the poorest members of the community, distinguishing artisans as marginalised members of marginalised communities.

Chapter 5 presented the research findings, which were categorised according to the emergent themes encompassed within the eight institutions of *caciquismo*, *confianza*, *el pueblo*, *el artesano*, *machismo*, *mañana*, *egoismo* and *fatalismo*. The data was analysed through the framework developed in chapter 2, strengthening the analysis by allowing the emergent themes to be researched. Institutions were unpacked and the heterogeneity that exists within the organisational field was explored. Providing insights into the institutional influences on IS innovation adoption.

6.2.   Reviewing the Research Objective

This research explores the role institutions play in influencing adoption of IS innovations. Both national (Mariscal, Gil-Garcia & Aldama-Nalda, 2011), and trans-national organisations (World Bank, 2012) have identified the importance of the further adoption of IS innovations to improve incomes of artisans at the bottom of the pyramid. However, the empirical data gathered in this study contradicts much of the conventional wisdom regarding how the adoption of IS innovations leads to improvements in incomes or organisational performance.

Drawing on the work of Walsham (2013), the aim of this research was to apply trans-disciplinary approaches in order to further understanding of and to develop both theoretical and practical solutions to improve the socio-economic conditions of poor people (Avgerou, 2010); helping to solve the mismatch between ISI4D and the local context (Heeks, 2008). The main research question under consideration was "what role do institutions play in the adoption and non-adoption of IS innovations?" The objective of the research was to explore the institutional influences that impact upon adoption behaviour by informants within the sector. Avgerou (2010) points to the need for researchers to develop contextual approaches in both positivist and interpretivist research, further stating that understanding this process requires researchers to move beyond stereotypical assumptions of 'local culture' to explore the role of local agents in the adoption process.

6.3.   Reviewing the Gaps in Research

The literature review positioned positivism and interpretivism as two ends of one continuum (Tolbert & Zucker, 1996), and this research explored the inter-relationship between the assumptions of both paradigms in the adoption process. Both paradigms focus on the role of agents and seek to identify how these agents preside over the adoption of IS innovations. The positivists name these agents 'innovators' and 'early adopters' (Rogers, 1962), while the interpretivists term them 'institutional entrepreneurs' (DiMaggio & Powell, 1983) and 'change agents' (Seo & Creed, 2002). What differs between them is that positivists tend to assume that the process of adopting IS innovations is initiated by the current industry leading or innovative MSE

(Rogers, 1962). This assumption differs from that of the interpretivists, who assert that in certain contexts industry leaders may actually have a vested interest in actively blocking the adoption of new IS innovations (Mokyr, 2000). Despite this difference, both paradigms tend to reach similar conclusions, believing that adoption can be predicted by technical feasibility and economic viability (Tolbert & Zucker, 1996). However, when adoption does not occur, positivists and interpretivists' assumptions once again diverge, with positivists maintaining universalistic assumptions regarding the adoption process, which continue to focus on yet more unsuccessful solutions. Conversely, interpretivists tend to explore local contexts in order to find 'in situ' solutions, exploring how local cultural differences may impact on the adoption of IS innovations.

The initial research proposal used a positivist lens to analyse the adoption process; and approach that was discarded when the empirical data did not align with the predicted pattern of diffusion. For example, the diffusion of innovation model (Rogers, 1962) predicts that innovators and early adopters trigger the adoption process, with these entrepreneurs tending to come from the most successful organisations within the sector. However, Informant #1 in this study was the most economically successful of the research participants and yet he showed very limited interest in adopting new IS innovations. Furthermore, all but two informants interviewed had never attempted to adopt any IS innovations, and thus the use of a positivist approach would have been of limited empirical use in this case. In addition, the initial findings indicated that 'other factors' were influencing adoption behaviour. The exploration of these 'other factors' led to the suitability of an interpretivist research approach to explore local influences on adoption, which developed from contextual realities, more apparent.

Developing an understanding for the 'other factors' that influence behaviour required an understanding of the historical development of the socially embedded institutions. Avgerou (2004) points to the need to research social embeddedness and "takes the view that the development and use of ICT artefacts in developing countries concern the construction of new techno-organisational arrangements" (Avgerou, 2010, p. 4). This study has explored the topic of adoption from the perspective of informants, in order to develop an interpretation of sectoral behaviour based on its context. The

ethnographic research undertaken in this study has sought to develop a deep understanding of informant context, from which interpretations were then developed.

Avgerou (2010) further argues that research often tends to focus on either the micro or macro level of analysis, leaving a void in understanding the space in between or sectors. Even when research is conducted at a sectoral level it tends to have a narrow focus. Avgerou (2010, p. 12) believes that researchers should consider additional elements, which are not typically part of sectoral analysis. The adoption of IS innovations occurs within the existing social structures that then influence the adoption process, and therefore the research positioned the adoption of IS innovations within existing institutions. However, this research provides new insights, moving beyond the existing institutional literature (Powell & DiMaggio, 1991; North, 1990). Specifically, this study identifies how the existing institutions of *caciquismo*, *confianza*, *el pueblo*, *el artesano*, *machismo*, *mañana*, *egoismo* and *fatalismo* influence an informant's world view and thereby impact upon the adoption process. This research also explored the inter-relationship of these institutions. For example, the masculine depiction of *el artesano* is supported by the institution of *machismo,* and both were found to influence the nature of gendered roles within MSE, and specifically the gendered assignment of developing IS innovations, with such a gendered assignment signifying the low priority given to adopting IS innovations.

This research contradicts the Tolbert and Zucker (1996) assumption that the adoption of IS innovations can be predicted on technical feasibility and economic viability alone. The informants in this study had the technical capacity to adopt IS innovations, and indeed, there was total adoption of cell phones and a near complete adoption of broadband; and yet this usage was solely for personal use rather than for business purposes. This research has identified a third element of 'institutional permissibility', extending the work of Tolbert and Zucker (1996) by including an additional element to further analytical capacity and to help develop context specific sense making (Avgerou, 2010); and allowing researchers to move away from seeking to find universalistic 'best practice' approaches and instead exploring the adoption of IS innovations based on local institutional realities.

Encouraging individuals to adopt the IS innovations that they already own into their professional lives could reduce the economic cost of conducting business. Donner (2009) proposes that entrepreneurs (including handicraft producers) are adopting IS innovations, believing that while difficult to measure, these tools are being used to further socio-economic development. This research has explored this widely held belief. The ethnographic case study focused on MSE operating within the Taxco Silver Handicraft sector. A total of 58 informants were interviewed during two phases. In the course of the interviews, informants responded positively to questions about ICT usage within MSE, stating that they were using cell phones to contact customers and suppliers, creating digital catalogues and emailing customers. However, during the observation phase a contradiction emerged between their interview responses and their observed behaviour, which revealed that informants did not use cell phones to contact customers or suppliers, and in fact were still relying on public transport or walking to visit customers and suppliers, when an obvious use of IS innovations would be to call suppliers to place orders, or placing orders via email or a phone call, which would greatly reduce the costs of public transport or travel time if informants adopted IS innovations into their operations. Without non-participant observation techniques, this research may have drawn similar conclusions as Donner (2009), namely that while cell phones were mostly used for personal use; there must also be some business usage. However, the ethnographic research exposed the contradiction between the information informants gave and what they actually did. The sector has deeply held beliefs that form the basis of resilience to IS innovations, clearly contradicting the assumptions of Donner (2009); and highlighting that researchers must not assume that ICT tools have been incorporated into the professional sphere simply because the IS innovations have been adopted by informants at a personal level. This research found a distinct separation between the personal and professional usage of ICT tools. It is therefore very important that ISI4D researchers are aware of this subtle difference, which is critically important when considering how IS innovations can be used to improve organisational performance.

An important element of institutional resilience results from the low levels of trust present within the sector. This research explored institutions related to trust and how trust is established, in relation to the adoption of IS innovations. Researchers have

long recognised that sanctioning mechanisms are required to build trust in non-personal transactions (Grief, 1993), and that the development of trust in virtual transactions is a key to the successful adoption of IS innovations (Ba, 2001). Ba (2001) further argues that this sanctioning must occur at a local level, whether involving trade associations or appropriate government agencies. This research explored how trust is developed in contexts with no external arbiter and a lack of impartiality in dispute resolution. Section 5.3.2 detailed the present government's limited interest in resolving disputes, being unwilling to intervene in arbitrating disputes in the informal sector and leaving individuals to develop informal institutions, such as *confianza* to enable transactions to occur. This research develops understanding regarding how trust is built and maintained within a sector that operates mostly outside of the formal regulatory system. These findings contradict the prevailing assumptions concerning the ability of all sectors to adopt IS innovations for on-line transactions, demonstrating that some sectors lack the necessary sanctioning ability to mitigate the risks inherent in virtual transactions. Informants in this study have developed a complex system to mitigate risks and thus facilitate transactions. The traditional and enduring transaction system based on *confianza* requires informants to physically visit customers and suppliers. The institution of *confianza* encompasses high transactions costs, which are themselves designed to ensure trustworthiness. This institution is at odds with western assumptions that IS innovations are tools designed to improve organisational performance. Andrade & Urquhart (2012) identified the 'hidden' agenda' intrinsic to ICT projects, which define adoption as a sign of modernity. This research found that the current system of trust is purposely designed to be inefficient and thus the role of IS innovations in improving organisational performance runs counter to the structure of current market transactions in the handicraft sector, and therefore the implicit agenda of ISI4D is at odds with how the sector functions. Therefore the successful adoption of IS innovations requires the exploration of how these tools can help build *confianza*.

There exists within the Taxco Silver Handicraft Sector an institutional rationality that supports the continuation of current buying practices, which avoid the adoption of IS innovations. Andrade and Urquhart (2012) call for the exploration of 'hidden agendas' related to the adoption of IS innovations; with Avgerou (2010) positing that researchers need to move beyond stereotypical assumptions of 'local culture' and

instead analyse the heterogeneous nature of these complex local cultures. Understanding the local context related to adopting IS innovations reveals a contestation between agents over the development of new social structures.

This research has furthered understanding of the role of gender in this context, finding that the adoption of IS innovations was marginalised through its gendered assignment, as the assignment of adoption of IS innovations as 'women's work' signalled its low priority. The research builds a deeper understanding of the high level of ISI4D failure rate, and it may be that the institutional response contributes to the high failure rate of ISI4D projects, and not, as Heeks (2008) has suggested, result from a mismatch between donors and recipients. The findings of this study move beyond Heeks' research to illustrate that mismatches are occurring in other areas of ISI4D, which are not donor-funded initiatives. Whilst a degree of failure may be due to a mismatch between donor expectations and recipient needs, another explanation for the high failure rate must reside within the very values embedded within IS innovations and the contradiction that occurs between ICT tools and the existing institutional beliefs in which they operate. Thus this research identifies that the failure of adopting IS innovations occurs due to a lack of institutional permissibility. This research has furthered understanding of 'hidden agendas', by suggesting that the mismatch resides with the IS innovations themselves and not whether ICT is donor driven.

This research also explored the cultural-cognitive context into which IS innovations are being introduced. This was accomplished by examining how existing social constructs react to the adoption of IS innovations, revealing that they demonstrate a high level of resilience. For example, the institution of *el artesano* places high social and political status on the role of the artisan within Mexican society, whilst these same *artesanos* are economically deprived. This economic deprivation serves a wider societal purpose, as it seeks to ensure that neo-liberal economic models cannot corrupt 'Mexican society'. This position served the ideological needs of the past revolutionary era in Mexico, but today creates institutional impediments to the adoption of IS innovations that may accelerate economic development within communities. This research supported Avgerou's (2010) call to apply local institutions to a new context, as whilst 'local culture' is often presented as homogenous, in reality it is often highly contested.

162

This research spoke to two informants who were entrepreneurial in their adoption of IS innovations, Informant #54 and Informant #58 have both adopted IS innovations into their MSE operations. In reflecting upon why these two informants had deviated from existing norms, the analysis explored what was different about these two MSE, noting that it was not gender, as one informant was male and the other female. It was not income or education levels, as these were consistent with the other MSE. One element that was unique about these two MSE is that they were both sole proprietors and therefore they did not have other agents within their MSE influencing their behaviour, and were thus more able to ignore some institutional norms. As has been previously discussed, the sector functions with low levels of trust, with MSE not typically sharing information with others. The opportunity to participate in the training programmes without others knowing reduced the risk of being labelled as egoistic. Informant #58 reported telling other MSE about his use of IS innovations, and subsequently found himself sanctioned with non-compliance, while Informant #54's decision to create a digital catalogue remains a secret that has not been shared. There is evidence that Informant #54 is further challenging the institutions of *machismo* and *mañana* by only using female artisans to sub-contract orders. Informant #54 did not indicate that these new social structures had as of yet resulted in any sectoral sanctions. A possible explanation is that since a female operates the business, the male dominated sector pays little attention to this marginalised MSE.

These two informants are able to act as 'institutional entrepreneurs' due to their unique position within the sector. DiMaggio and Powell (1983) highlight the role of such 'institutional entrepreneurs' in developing new social structures. However, they do not discuss how these entrepreneurs can be identified or nurtured. North (1990) believes that institutions are most malleable at the edges, but does not explain how the edge of an institution is defined. In contrast, by illustrating the experience of these two informants, this thesis clarifies how institutions are malleable. These two informants are attempting to develop a new social structure related to the adoption of IS innovations, and as a consequence appear less wedded to the institutions than others, allowing them to change (albeit slightly) social structures from within their own MSE. An understanding of the role of agents of change helps widen understanding of the mechanisms that permit 'institutional entrepreneurs' to become 'change agents'. Ultimately, this research moved beyond exploring local culture and

instead revealed the complexity of their social reality. What is missing however is a clearer understanding of the process through which institutional entrepreneurs are able to successfully institutionalise new social structures. The findings of this study tend to indicate that the development of new social structures is most likely to emerge from agents that are on the periphery of and not fully embedded in the sector. Over time, the willingness of these agents to adopt IS innovations may serve as a bridge to the rest of the sector, although this process is not without peril, as illustrated by the spectacular failure of Informant #58, which was discussed in Section 5.8.1. This initiative may have been more successful if the informant had not shared his plans to adopt IS innovations to increase orders with other artisans, and had instead used the IS innovation with his downstream customers whilst retaining the traditional ordering process with his upstream suppliers. The informant could then have acted as a bridge between these two institutions. This research has filled a gap in understanding regarding how to identify institutional entrepreneurs, and increased knowledge about how they operate. This topic could be further explored through longer field research, which would help illuminate the iterative process of these and other institutional entrepreneurs.

This research has illustrated the significant role local culture plays in the adoption of IS innovations, identifying that resilience to adopting IS innovations emerges from the complex social structures embedded in society. By advancing such an understanding, future researchers may be able to move beyond reliance on a 'one-size fits all' approach. The solution is not to force communities to become more like societies that have successfully developed, and instead work should focus on understanding the cultural-cognitive context, and work within existing social structures to further development objectives.

Table 6.1 outlines the main research gaps presented in Chapter 2, demonstrating how this study has addressed gaps in existing research.

Research Gaps	Contribution to Existing Research
Adoption of IS innovations has a significant role in organisational performance, but business use is hard to	Findings suggest that informants do not use mobile phones for business use, highlighting the institutional resilience to adopting IS innovations into MSE practices.

measure (Donner, 2009)	
Ba (2001) identifies a gap in understanding how on-line communities are built, with limited research on how to build trust within the informal sector to facilitate the development of on-line market exchange	Builds understanding of how trust is built in the Taxco Handicraft Sector, contradicting the universalistic assumptions of how on-line trust systems work, and the challenges faced in the informal sector to adopt IS innovation for business usage
ICT tools have an embedded agenda, there is need to explore the hidden agenda of ISI4D (Andrade & Urquhart, 2012). But this results in a mismatch and high failure rate (Heeks, 2008)	Illustrates the role played by hidden agendas and that the high failure rate is sometimes caused by the implicit agenda of the IS innovation itself
Research needs to move beyond stereotypical assumptions about 'local culture' and instead study the relationship between agents and institutions (Avgerou, 2010)	Illustrates the value of analysing 'local culture' to explore the heterogeneous nature of these complex institutions, further increasing understanding of the role of context in the adoption of IS innovations. The inter-relationship between agents and institutions increases understanding of institutional malleability (North, 1990), and suggests how institutional entrepreneurs can develop new social structures.

Table 6.1: Addressing Gaps in Existing Research

6.4.   Evaluating this Research

Myers (1997) outlines six points that researchers must consider when conducting interpretive research, and these have been used to evaluate the research in this study.

1)   Has sufficient information about the research method and process been presented?

Chapter 3 provides information regarding both the research method and the data collection process. The methodology adopted relied heavily on the researcher's professional experience in the sector to gain and maintain access. It adheres to Walsham's (2006) proposal that ethnographic research must first show that the researcher was actually there.

2)   Has sufficient quantity data been collected for insights to emerge?

Data was collected from 58 informants during two data collection phases. The method selected, that of 'involved researcher' (Walsham, 2006), satisfies Myers' (1997) second point, gaining insights that would not have been available if an 'outside observer' approach had been assumed. The adoption of this approach demonstrates an interest in informants' success and secured and maintained access to the sector. Such interest led to extended conversations about how the sector functions. The success of this approach was demonstrated by the fact that often, multiple informants from one MSE would be eager to participate in a given interview.

3)   Are multiple viewpoints and alternative perspectives represented?

The data collection is comprised of data from multiple informants. The interpretation of the data relies on such manifold viewpoints, including the author's interpretation (gained as both a buyer of jewellery and a researcher), of the data. For example, when exploring the challenges of fulfilling an order on time, there were alternative viewpoints, with female respondents suggesting that male laziness was the cause, while the males attributed the problem to only some individuals, and not the gender itself. The idea of a widespread problem of male laziness unwittingly emerged from female informants when their male counterparts were absent. Both perspectives are represented in the findings. Similarly, it is through analysis of the institution of *mañana* that this research is able to develop an understanding of how the concept of time, as it operates within Mexican society, impacts upon the adoption of IS innovations.

4)   Does the author offer rich insights into the human, social, and organisational aspects of IT and their application?

The data provides rich insights into human, social and organisational aspects of the sector and how it applies to the adoption of IS innovations. The findings explored the inter-relationship of the data with the Mexican institutions of *caciquismo, confianza, el pueblo, el artesano, machismo, mañana, egoismo* and *fatalismo.* The adoption of an ethnographic method ensured deep inclusion into the case study, and many hours were spent with informants talking in detail about their MSE. Whilst the author offered to share the results with the informants, it is interesting to note that none of

the informants showed any interest in the findings of this research, possibly providing another indicator of the low value adopting IS innovations merits from the sector. This research used institutional theory to provide an explanation for informants' decisions regarding adopting or not adopting IS innovations, which was accomplished by scrutinising the meanings inherent in the data collected.

5)   Does the research contradict conventional wisdom and provide richer understanding?

The study contradicts existing positivist assumptions regarding ICT adoption, and provides richer insights into the contextual influences surrounding the adoption of IS innovations within the handicraft sector. This research also contradicted other research (Chew, Levy & Ilavarason, 2011; Jenson, 2007) that has previously suggested that ICT, and specifically cell phones, are being used to improve incomes. Such an outcome strengthens the notion that solutions found to work in one part of the developing world do not automatically transfer to a different context. This research provides a greater understanding of the how historically contingent institutions can influence adoption behaviour, which would not have been possible to determine in quantitative research.

6)   Does the research make a contribution to the field? Has the researcher developed new concepts or theories?

The contributions to knowledge are presented and discussed in Section 6.5.

6.5.   Contributions

This thesis fulfils the requirements for a Doctor of Business Administration (DBA) degree, as it applies management theories to solve enduring business issues.

6.5.1. Theoretical Contributions

This research combines two theoretical frameworks in order to create a new model for evaluating the adoption of IS innovations. Scott's (2008) three-pillars of institutions (regulative, normative, cultural-cognitive) are combined with the Seo and Creed

(2002) framework of contradiction and praxis to create a new model for exploring the contestation present in IS adoption. This framework uses an institutional lens to explore how the three-pillars influence behaviour when agents are faced with contradiction. This framework allows researchers to move beyond purely descriptive approaches to explore the adoption process, acknowledging that sometimes a vigorous contest can occur between differing views about the role of IS innovations and its place in existing and emergent social structures.

Figure 6.1 summarises the theoretical framework underlying this study. It is a re-configuration of Scott's (2008) three-pillars as overlapping lenses, which are used as theoretical lenses to view the institutionalisation process. The lenses are overlapping to signify the overlapping influence of the three-pillars. The significance of this framework lies in its ability to allow the researcher to explore each institution separately, or to explore the inter-relationship of various combinations of the three institutions on each specific emergent theme. The Seo and Creed (2002) framework of institutionalisation and institutional change focuses on the introduction of IS innovations and specifically the ability of 'change agents' to affect the change they desire. This framework modifies the Seo and Creed approach, which tends to report on institutional change after it has occurred, without exploring the contestation involved in developing new social structures. Instead, the modification focuses on the contestation of competing views that occurs when a new social structure is introduced, thus enabling researchers to analyse the various stages and the development of contradictions, the praxis and ultimately the contestation between change agents and those resilient to change. The framework allows researchers to understand the context in which the process is occurring, without assuming any "correct" interpretation of adoption of an IS innovation. This framework is consistent with interpretivist assumptions; in that it does not seek to impose a deterministic world view on the benefits of adopting IS innovations. The theoretical framework introduced here focuses on the institutional contestation and may be used by researchers in other disciplines to move beyond simplistic assumptions of behaviour, and to explore the complexities behind such observed behaviour.
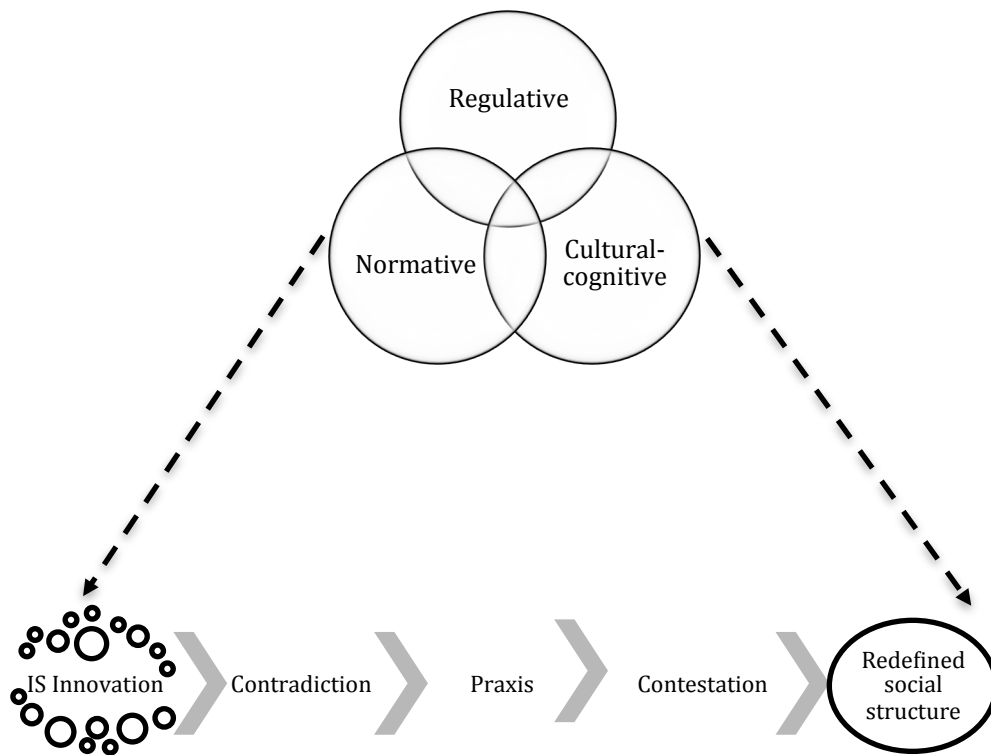
Figure 6.1: Framework of Institutional Contestation

6.5.2. Methodological Contributions

This research combined both ethnographic and case study research methods to identify the institutional influences that reside within the Taxco Silver Handicraft Sector. Previous research has noted the lack of qualitative research on adoption of IS innovations (Walsham, 2013), and in response this research used interpretive methods to analyse the data. This approach was selected after the more commonly used positivists approaches were determined to lack the capability to provide insights into the observed behaviour. This methodology allowed the author to continue probing for meaning in the spoken replies in interviews. For example, many informants declared that they were implementing IS innovations, and that their daughters had been assigned to the task. Without an ethnographic component, the significance of this common reply would have been overlooked. However, as previously discussed, there

is a contextual significance to this gendered assignment, and it is an active part of the sectoral resilience to adopting IS innovations.

The interpretivist approach was very suitable for this research, given its purpose to explore the meaning that informants have assigned to IS innovations. This approach is ideal when a researcher seeks to understand others' world view and advocates that development should occur on their terms. Consequently, this research concurs with and adds to the body of work in this area (e.g. Avgerou (2009), Andrade and Urquhart (2012), and Walsham (2013)).

This research makes some significant methodological contributions arising from this interpretive case study, with the lessons learned available as a guide for future researchers and DBA students. Key to remember is that researchers should always be open to changing their research approach. The willingness to alter the approach in this study arose from the initial findings from a pilot study, which resulted in a much-improved thesis. The research found that the informants had adopted IS innovations for personal use but not business purposes. This created a paradox, since initial findings appeared to fit the requirement of being both technically feasible and economically viable (Tolbert & Zucker, 1996); but there also appeared to be an institutional 'non-permissibility' contained in the observed data.

During the data collection period, the reliance on an ethnographic approach, using interviews, observations, the review of archival data, and the author's own business experience extended Walsham's (2006) concept of the researcher as an involved participant. The strength of this approach was illustrated by the informants' belief that the author was trying to make a positive contribution. This approach also resulted in lively discussions as the informants 'opened up' and provided genuine accounts of their daily challenges, allowing for a greater appreciation of the issues that informants faced when attempting to adopt IS innovations.

6.5.3. Practical Contributions

Research of the adoption of IS innovations is undertaken on the premise of the potential that ICT can offer to the improvement of socio-economic conditions in developing countries (Walsham *et al.,* 2007), aligned with the United Nations Millennium Development Goals of eradicating poverty (United Nations, 2014). This

research, and that of many others, has identified the difficulty in finding universal solutions to local problems. While there may be a temptation to group all individuals at the bottom of the pyramid as a homogenous group, researchers are continuing to identify differences that demand unique solutions. This research has uncovered three practical solutions to assist both researchers and development practitioners find these local solutions. While such an approach may be more labour intensive, it does allow researchers to better understand the needs of communities prior to the introduction of any IS innovation.

Firstly, development practitioners should identify the existing institutions in operation. This requires that more time be spent exploring institutional norms and the cultural-cognitive world view of the sector, with the goal of the practitioner to position the IS innovations as consistent with current institutional arrangements and as tools designed to support existing structures. For example, this research found that the handicraft sector functions with low levels of *confianza*, due to the extremely high levels of design piracy; and as an example, informants feared that putting designs on website would facilitate even greater piracy. Therefore, the focus of the adoption of IS innovations should not emphasise the open access properties of websites, and instead highlight how ICT tools can be used to develop the working relationship with customers with whom they share *confianza* (trust), and thus the IS innovation is not suitable for use with all customers, but instead a select few. While this may run counter to one of the main benefits of IS innovations (the efficiency gained by widely distributed digital catalogues), this practical suggestion aligns with existing institutional norms and advocates IS innovations as furthering informants' attempts to protect against design piracy. The process of building *confianza* is undoubtedly time consuming. Nevertheless, if development practitioners apply a circular view of time, it becomes obvious that the successful adoption of IS innovation requires multiple iterations, inevitably including failure or partial failure. The goal therefore must be to reflect upon the institutional causes, of failure and not rely on economic or technical explanations.

Development practitioners should also seek to identify potential 'institutional entrepreneurs' (DiMaggio & Powell, 1983), concurrently with identifying existing institutions. The study found that the majority of informants were resilient to the

adoption of IS innovations, because the tools were perceived as contrary to their world views of how things are done. However, the research did identify two areas in which there was a gradual shift towards the development of a new social structure. Most notably, there appeared to be a gradual collective shift in the attitudes of women within the sector, who identified the institution of *mañana* as hindering economic development. In response Informant #54 has developed a new social structure, by only hiring female workers. Whilst this is not directly related to ICT adoption, the research also found that Informant #54 was one of only two MSE that had adopted IS innovations in the form of a web-based digital catalogue. A potential area of future research is to follow up with her to explore what emanated from adopting this IS innovation.

The two individuals who were sole proprietors both adopted IS innovations. In this case, it is possible to deduce that codes of secrecy embedded in *confianza* and *egoismo*, which served to deter other MSE from adopting IS innovations did not prevent Informants #54 and #58 from pre-testing new social structures. In this interpretation, sole proprietors appear more likely to become institutional entrepreneurs, as there are no other agents within the MSE exerting institutional pressure to conform. As a consequence, 'institutional entrepreneurs' are unlikely to be sectoral leaders, who have a vested interest in maintenance of the status quo. It appears that 'change agents' are less invested in current social structures and have some level of autonomy to introduce new ways of working.

The efforts of Informant #58 to introduce IS innovations, (see Section 5.8.1) ended in spectacular failure when other MSE refused to provide him with jewellery, deeming his behaviour to be egoistical. Researchers and practitioners should remember that the development of new social structures creates contradictions within existing institutional arrangements and thus the adoption of IS innovations will inevitably re-align current institutional arrangements. Informant #58 was keen to ensure that his adoption of IS innovations was consistent with the institution of *el pueblo*, and his focus was on ensuring that the tools were used to further benefit the community. However, his experience begs the question whether he may have been more successful if he had simply not told other MSE of his efforts and adopted IS innovations surreptitiously. Thus, when developing new social structures,

practitioners must have the foresight to understand which institutions are the sources of resilience, and which can be harnessed to further the adoption of IS innovations.

The theoretical framework outlined in this study functions as a practical toolkit for both researchers and practitioners alike. As discussed, the development of a new social structure is a contested process, and thus this framework focuses attention on the contestation apparent between the change agents and those resilient to such modifications. It allows the researcher to identify 'institutional entrepreneurs', and as such, advances knowledge regarding how to find these change agents and the likely structure of their MSE and role within the sector. While development practitioners may seek to help the most marginalised or as Avgerou (2010) calls them, 'the poorest of the poor'. This research finds that even the most marginalised members of a community may be fully invested in maintenance of existing institutional arrangements. This research has identified that 'institutional entrepreneurs' are individuals who tend to be the least attached to current institutional structures. It is arguably disingenuous to continue to attempt to develop new social structures with those who are so deeply embedded within the existing institutions that they are resilient to change, as to continue to do so simply masks positivist research and practice under an interpretivist cloak. A more beneficial approach is for researchers to spend more time 'in situ' in order to develop a better understanding of the role of institutions in the adoption of IS innovations.

Thirdly, practitioners should attempt to understand what successful adoption means from the perspective of informants, bearing in mind that it may be difficult for researchers to accept that agents in developing countries may adopt IS innovations for different reasons and thus measure success from vastly different paradigms. As identified in Chapter 5, informants may adopt IS innovations for reasons that appear contrary to the use as proposed by outsiders. As previously suggested, development practitioners should spend time identifying institutional constructs and then seek to devise mechanisms to encourage the adoption of IS innovations and develop new social structures that can then support existing goals, with the understanding that institutional entrepreneurs may seek to identify success using a different criteria. A key contradiction between the Taxco Silver Handicraft Sector and the adoption of IS innovations lies in the different cultural-cognitive concepts of time. The general

assumption of the adoption of IS innovations tends to be situated on a linear concept of time, with the process commencing with the introduction of ICT tools, which entrepreneurs then use to develop novel solutions to recurring problems. These solutions are then diffused throughout the sector, before finally economic development is achieved. This process is illustrated in Figure 6.2.
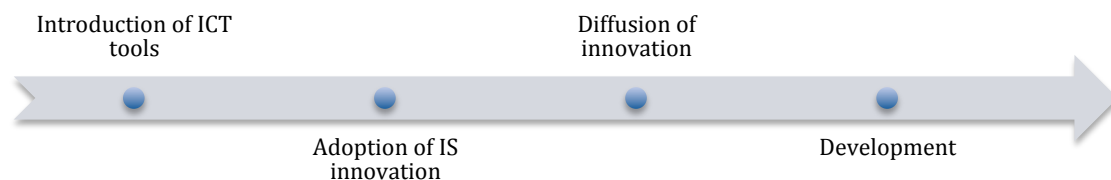

Figure 6.2: Linear view of Development in ISI4D

However, the findings of this research indicate that the sector's world view is that time is cyclical, and that ICT tools are simply the latest in a long line of external agents. Historically, the Spaniards came to Mexico under a semblance of integrity, only to then dishonour the indigenous people, who responded by institutionalising *machismo*. Nineteenth Century liberalism was introduced with a promise of individual freedom, with the outcome being the rise of *caudillos* and enslavement of the poor through the introduction of the peonage system. Indigenous communities subsequently protected themselves by developing the institution of *el pueblo*. The Mexican revolution (1910-1920) promised equality to indigenous communities, until local party bosses sought to marginalise these communities through the unfair allocation of political rewards, and as a result peasant communities developed the institution of *confianza*. The current neo-liberal era promises equality of opportunity and positions ICT tools as a key driver of economic development. This research has shown that informants perceive the introduction of ICT tools and the development of IS innovations as simply the latest in a long line of external agents attempting to exert control. While ICT tools come with promises of a better life, the informants' cultural-cognitive world view, borne out of 500 years of history, makes them fear that these external agents will eventually betray them. The institutions of *egoismo*, *mañana*, *fatalismo* and *el artesano* have all been developed to help adapt these communities to the realities of their social structure.

174

The theoretical framework devised as a part of this study permits a rich exploration present in the contestation of the institutionalisation process. This improves the analysis, since it explicitly demands the exploration of the contestation occurring within the institutionalisation process. This framework encourages researchers to consider the opposing positions to any development of new social structures. The illumination of these competing agendas allows researchers to develop a more accurate understanding of the phenomena at work.

Thus a more appropriate depiction of time would present the adoption of IS innovations through a historically contingent cycle, assuming a positive outcome; into which fate is likely to intervene, before the social structure is then institutionalised. Figure 6.3 illustrates a more authentic version of institutionalised beliefs regarding the introduction of new social structures.
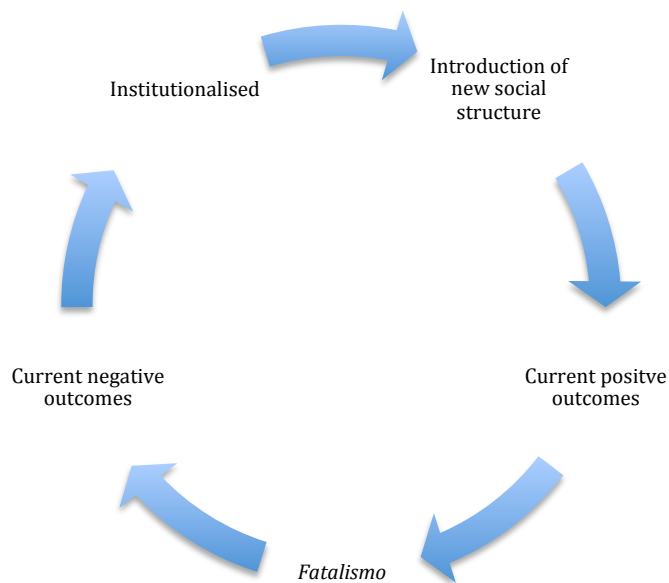
Figure 6.3: Informants' Circular View of Development

Ultimately, for the informants there is not such thing as success or failure, but simply current success or current failure. Currently, informants' resilience to IS innovations is consistent with institutional theory, with informants relying on institutionalised responses to new social structures. This is a defensive strategy made in response to the unknown outcome of adopting IS innovations. Positioning IS innovations as

furthering informants' goals may facilitate greater adoption, although as informants may hold different opinions of what successful adoption of IS innovations entails, researchers must refrain from imposing their own world view of what success resembles. For example, an informant may adopt innovation to become *el chignon* (betrayer), i.e. for them, success may be measured by their ability to use IS innovations to cause harm to others, and therefore a researcher may believe the project in question to be a failure, while the informant interprets it to be a success.

Table 6.2 summarises the theoretical, methodological and practical contributions of this research.

	Contribution
Theoretical	The development of the institutional contestation framework focuses attention on the contest between opposing agendas when new social structures are introduced into an organisational field.
Methodological	Demonstrates the value of conducting ethnographic case study research within a sector at the base of the pyramid. The methodology developed a richer interpretation of the data.
Practical	Developed a toolkit that helps explain notions of 'local culture' and is able to define institutional resilience. Increases understanding of how institutional entrepreneurs adopt IS innovations to improve their organisational performance.

Table 6.2 Theoretical, Methodological and Practical Contributions of this Research

6.6.   Limitations to the Research

This research has limitations in terms of its scope, theory and methodology. Firstly, the scope of this study is limited to the context of the Taxco Silver Handicraft Sector. The historical development, structure and composition of its members is unique amongst the hundreds of other handicraft sectors in Mexico, Latin America and other parts of the world. While there are undoubtedly some similarities shared amongst handicraft sectors, researchers should avoid the temptation of assuming that all handicraft sectors in Mexico are the same. Thus, whilst the theoretical framework is transferable, the research of other sectors should focus on the unique combination present in those institutional influences. Secondly, the research collected a significant amount of data, which was interpreted and re-interpreted. This research used four different theoretical frameworks. Additional time may have revealed other frameworks better suited to exploring the adoption of IS innovations. Similarly, there are time constraints inherent in DBA research that demanded difficult decisions be

made regarding the length of field research and the number of interviews undertaken that may have resulted in alternative interpretations being developed if time was unlimited. Finally, there is always the risk of researcher bias, although the author has sought to reveal any such propensity, and attempted to obtain extensive feedback from DBA supervisors and other academics, others may argue that unacknowledged biases undermine the findings and analysis. This research was presented at numerous conferences, workshops and seminars with the aim of improving the analysis. The feedback from these presentations, while not always positive, resulted in further research and ultimately improved the quality of this study. In conclusion, it is proposed that this thesis adequately explores the research question posed and contributes to the understanding of institutional influences on the adoption of IS innovations.

6.7.   Potential Areas for Future Research

Despite the importance of the handicraft sector to the socio-economic development of poor communities, there remains comparatively little research in this area. Therefore, a potential area for future research is to explore the challenges faced by handicraft producers throughout the world as they attempt to adopt IS innovations to improve sectoral performance. As other academics have concurred, such research is not easy. Nevertheless, there are three areas of future research that would build upon this work. Firstly, there is a need to conduct follow up research in this sector, to continue to explore how institutional entrepreneurs are navigating the institutional barriers present in the process of adopting IS innovation. Further research in the Taxco Silver Handicraft Sector would allow the exploration of the findings over a longer period of time, in order to demonstrate the durability of existing institutions and further analyse the institutional contestation presented here. Secondly, researchers could investigate the nature of institutional barriers to adopting IS innovations present in other handicraft sectors in Mexico. This would permit a comparison of similar institutions in a different context, but with similar institutional arrangements. Researchers could then identify the similarities and differences present within handicraft sectors in Mexico. Conducting additional ethnographic case studies in Mexico would permit the exploration of how the institutions of *caciquismo*, *confianza*, *el pueblo*, *el artesano*, *machismo*, *mañana*, *egoismo* and *fatalismo* have

different levels of influence within different sectors. This research could also seek to identify additional institutions in Mexico. Thirdly, expanding this research to other parts of the world would expose this framework to very different institutions and develop theoretical understanding of how institutional theory applies 'in situ'. All such research would further understanding of the role of institutions in the adoption and non-adoption of IS innovations, and the role of institutional entrepreneurs in the process.

6.8.   Summary

This study has used a combination of theoretical models to structure its empirical research. These models have allowed the development of emergent themes to help explain the phenomena of adoption of IS innovations. As a consequence, a new framework was developed that permitted the exploration of the contestation between agents surrounding the introduction of IS innovations. This new framework utilised Scott's three-pillars to explain observed behaviour but then sought to analyse these complex social institutions identified. It is hoped that the new framework presented here will encourage other researchers to engage in research in this sector; or in the case of those researchers that have previously abandoned work in these sectors, to return to the field.

This research provided a once-in-a-lifetime opportunity to explore the adoption of IS innovation within the Taxco Silver Handicraft Sector in Mexico. It is hoped that others are able to use these theoretical models to further develop understanding of the role of institutions in the adoption and non-adoption of IS innovations, perhaps even helping to make a positive impact in the lives of families living at the bottom of the pyramid, who are relying on handicraft production to raise them out of poverty.

Appendix A: Phase One Survey Instrument

Personal	
1.Are you an owner of the workshop?	Yes / No
2.Name:	3.Age
4.Where do you live	
5.How many years have you been in the jewellery business?	
6.How did you learn to make jewellery?	Family / School / Other Artisan
7.Where did you learn to make jewellery?	Family workshop / employer / school / other workshop

Firm				
8.How many people work in the workshop?	Family	Friends	Workers	Total
9. Is jewellery making your	Full-time / part-time work			
10. If part-time what else do you do to earn money?				
11. Do you have another employer?				

Products	
12.How many different designs do you currently sell?	>25 / 25-50 / 51-75 / 76-100 / more _____
13.Of the designs that you sell, how many are common to the market?	>25 / 25-50 / 51-75 / 76-100 / more _____
14. Of the designs that you sell, how many are exclusive?	>25 / 25-50 / 51-75 / 76-100 / more _____
15.How many new designs have you made this year?	>25 / 25-50 / 51-75 / 76-100 / more _____
16.Are there designs that you do not bring to the Saturday market?	Yes / no
17. If yes, how many?	>25 / 25-50 / 51-75 / 76-100 / more _____

Strategy	
18.How often do you set up at the Saturday market?	Very little / sometimes / 50% of the time / almost always / always
19.Do you have multiple locations at the market?	Yes/ No If Yes, which ones?

20.Do you use any of the following tools to contact customers?	Telephone/ Cell phone / fax / email / Facebook /other
21.How do you find new customers?	Saturday market / workshop / shop / website/ luck/ other
22.Do you plan on using any of these venues or tools to increase your sales?	Saturday market / workshop / shop / website/ luck/ other
23.Have you recently purchased anything to improve your business?	Yes / No If Yes, what?
24.Have you used the internet / computers to find new design ideas?	Yes / No
25. Do you use any of the following to come up with new ideas?	Jewellery design books / catalogues / digital images / internet or website / computer / fax / other
26. Which of the following is the most important tool?	Jewellery design books / catalogues / digital images / internet or website / computer / fax / other
27.In the future, which of the following will be the most important tool?	Jewellery design books / catalogues / digital images / internet or website / computer / fax / other
Operations	
28.How many wholesale customers do you have?	

29. What percentage of your sales is generated from the following sites?	Saturday Market	Workshop	Store	Street
	Other markets			

30a.what percentage of your sales is generated from the following?	New customers		Existing Customers
	Wholesale		Retail
	Foreigner		National

b .Do you generate any sales from the following?	Web site	Telephone	Fax	Email
31.What has the government done to improve your sales?				
32.Are you a member of any trade associations?	Yes/ No If Yes, which one?			
Personal information				
33. Do you own any of the following?	Car / computer / cell phone			
34. How many years of schooling have you completed?	Primary / secondary/ high school / college or trade/ university			
40.Would you like a copy of the research findings?	Yes/ No			
41.What is your weekly production of silver jewellery?				
42.Do you own or rent your house				
b. If you rent what is your monthly rent?				
c. What are the walls in your house made from?				
43.How much do you make a week?				

APPENDIX B: Pre-screening Form

NAME: _____   DATE _____   CONTACT KEY: ___

1. Pre-Screening:

> *The pre-screening questionnaire will be translated into Spanish. Pre-screening will then be conducted on prospective artisans to ensure that their firm is from one of the desired motivation types: survivalists, trundles and high flyers.*

1. Which town are you from? _____

2. Is jewellery making your main occupation? _____

   a. If no, what percentage of your income is earned from jewellery making? _____
   b. What are your other occupations? _____

3. What is the highest level of education that you have completed? Elementary, Junior High, High School, Technical/ Bachelors, or Masters

4. Do you own a car?   Yes _____   No _____

5. Do you own a microwave?   Yes _____   No _____

6. Do you own your home?   Yes _____   No _____

7. Please indicate the material used in the construction of the walls of your home _____

8. How much money do you make (each week, 15 days, month or year)? _____

Appendix C: Consent Form

Consent form: NAME: _____   **CONTACT KEY:** _____

Research Participant Information and Consent Form

You are being asked to participate in a research project. Researchers are required to provide a consent form to inform you about the study, to convey that participation is voluntary, to explain any risks and benefits of participation, and to enable you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Study Title: How do Institutions Impact upon the Development of the Taxco Silver Handicraft Sector
Researcher: John Dobson
Manchester Business School at the University of Manchester
Address and Contact Information: 103 Pleasant St. Antigonish, Nova Scotia Canada B2G 1X1
Email: JohnAlverDobson@gmail.com
Supervisors:
Brian Nicholson
Email: Brian.nicholson@manchester.ac.uk
Richard Duncombe
Email: Richard.duncombe@manchester.ac.uk

PURPOSE OF RESEARCH:
- You are being asked to participate in a research study looking at how the Taxco Silver Handicraft Sector functions
- You have been selected as a possible participant in this study because you participated in the pilot project conducted in January 2011
- From this study, the researchers hope to learn how artisan firms function with the other elements of the Taxco sector. The research is focused on the use of ICT tools to improve sectoral performance
- In the entire study, there are six firms are being asked to participate. Within the firms the primary interview will be with the owner, although further interviews may also be conducted with other members of artisan firms
.
WHAT YOU WILL DO:
- The participants should behave as if the observer is not present
- The research involves a 45 minute interview followed by a full day of observation
- At the end of the day some questions will be asked based on observed behaviour to help the researcher more fully understand actions and events

POTENTIAL BENEFITS:
- The research findings are available to you
- The researcher will provide a debriefing of the findings if required

- Your participation in the study will help increase understanding of how the handicraft sector functions

POTENTIAL RISKS:
- Artisans are free to refuse to answer any questions that they feel will reveal private information

PRIVACY AND CONFIDENTIALITY:
- The data for this project is being collected anonymously. Neither the researchers nor anyone else will be able to link the data to you.
- The data will be transcribed in a different locale to help ensure confidentiality
- The results of this study may be published or presented at professional meetings, but the identities of all research participants will remain anonymous through the use of pseudonyms

- I agree to allow my identity to be disclosed in reports and presentations

  Yes / No Initials_____

- I agree to allow audio taping of the interview

  Yes / No Initials_____

YOUR RIGHT TO PARTICIPATE, REFUSE OR WITHDRAW:
- Participation in this research project is completely voluntary. You have the right to say no
- You may change your mind at any time and withdraw
- You may choose not to answer specific questions or to stop participating at any time

CONTACT INFORMATION FOR QUESTIONS AND CONCERNS:
- **Please contact the researcher:**
  John Dobson
  Email: johnalverdobson@gmail.com
  Alternate email Dobson@setonhill.edu

PROOF OF INFORMED CONSENT:
- Your signature below means that you voluntarily agree to participate in this research study

  _____ _____
  Signature   Date

Appendix D: Phase Two Survey Instrument

CONTACT KEY: _____   **DATE:** _____

Questionnaire

1. Is jewellery making your main occupation *(This section will explore firm structure)*
   a. If not, tell me about the other things that you do to make money?

2. *How many years have you been making jewellery? (This question explores factor endowments)*

   a. Can you tell me how you started making jewellery?
   b. Did you learn to make jewellery at home?
   c. Have you attended any training programmes? If so, please explain how these programmes have impacted upon your business
   d. How do you use technology in your business?

3. How many people work in the enterprise? *(This section will explore firm and structure)*

   a. Can you describe what everyone does?
   b. Can you describe a typical working day or week *(A week represents the typical production cycle. Orders placed on a Saturday are typically delivered the following Saturday)*

4. Can you tell me how you sell your products? *(This question will explore firm structure, strategy)*

   a. Describe the role of the weekly market
      i. Describe what you do to sell your products
   b. Do you attend other markets?
      i. If so, describe the role of these other markets in your income strategy
   c. Do you sell from your workshop?
      i. If so, do you invite customers to your workshop?
      ii. Do customers ask to visit your workshop? If so, why do you think that they want to visit your workshop?
   d. Can you explain how do you decide to make new products? *(This question explores firm rivalry)*
      i. Who are the best firms in the sector and why?
      ii. Do others ever copy your designs?
      iii. Do you ever copy designs from the market?

5. Explain how you deal with your suppliers *(Firm strategy and structure: this question explores the interrelationship between firms and supporting industries)*
   a. How do you decide who to buy from?

b. Can you explain the process of placing and collecting orders from your suppliers?
c. Can you explain any benefits or problems associated with using your current suppliers?
d. Has there ever been a time that your suppliers have been unable to fulfil an order? If so, please explain why this happened.
     i. Has your supplier ever needed to use your down payment for something else, resulting in them not being able to deliver your order on time?

6. Explain how you deal with your customers? *(Firm strategy and structure: this question explores the interrelationship between firms and demand conditions)*
   a. How do you contact your customers, and how do they contact you?
   b. Can you explain the process of receiving and producing an order?
   c. Can you explain any benefits and problems with your current customers?
   d. Has there ever been a time that you have not been able to fulfil an order on time? If so, please explain why this happened.
      i. Have you ever needed to use a customer down payment for something else?

7. Can you explain the role of technology in your business *(This section will consider the mediating role of ICT in the diamond framework)*
   a. Can you explain how you use ICT tools?
      i. How did you learn to use ICT tools?
   b. Can you explain how you use ICT tools in your business?
      i. How are ICTs changing demand conditions in the sector?
      ii. How are ICTs changing supporting industries in the sector?
   c. Do you believe that other firms are using technology to improve their businesses?
      i. Can you explain what you think or know that other firms are doing?

8. Explain how you use the government to help your business *(This question will consider the impact of factor endowment creation)*
   a. Are you aware of the e-Mexico centres or any other government programmes? If so, explain how you use these services? *(This question will explore the impact of factor endowment creation)*
      i. If so, how does your business use these centres?
      ii. Have you participated in any training programmes? If so, please explain
   b. How do ICTs change what the government provides as a basis for competition in the sector?
   c. How are ICTs changing the factor endowments necessary to compete in the silver sector?

9. Can you explain how the Silver Market functions? *(This section will explain inter and intra firm rivalry)*
    a. Can you explain how you compete with other artisans?
    b. Can you explain the issues impacting on your ability to earn more money?
    c. Can you explain the relationship of extended family members within this firm?

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