AN INVESTIGATION ON INDIVIDUAL EMPOWERMENT OF TELECENTRES USERS: A CASE STUDY OF THREE PUSAT INTERNET DESA (PIDS) IN NORTHERN STATES OF MALAYSIA

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Abstrak

Komuniti informatik merupakan satu bidang yang memberi tumpuan kepada perlaksanaan dan penggunaan teknologi maklumat dalam kalangan komuniti. Pemerkasaan sebagai satu konsep yang penting bagi menilai kesan teknologi ke atas organisasi dan komuniti. Potensi untuk memperkasakan komuniti luar bandar adalah melalui pembangunan *telecentre* yang menyediakan platform untuk mendapatkan pelbagai kemahiran dan pengetahuan. Namun begitu, masih terdapat berbagai masalah yang menyebabkan kurangnya penglibatan masyarakat dalam menggunakan *telecentre* berkenaan. Kajian lepas juga lebih memfokuskan kepada aspek operasi *telecentre* tetapi kurang memberikan perhatian kepada pemerkasaan psikologi. Sehubungan itu, tujuan kajian ini adalah untuk menjelaskan bagaimana konstruk pemerkasaan psikologi iaitu intrapersonal, interaksi dan tingkah laku menggambarkan pemerkasaan pengguna Pusat Internet Desa (PID) dan mencadangkan model pemerkasaan pengguna *telecentre*. Kajian ini mengaplikasikan teori pemerkasaan psikologi (PE) yang dikemukakan oleh Zimmerman pada tahun 1995 untuk meninjau hasil pemerkasaan daripada pelaksanaan *telecentre*. Kajian ini menggunakan kaedah kualitatif menerusi pendekatan kajian pelbagai kes. Data diperolehi daripada pengguna PID melalui pengedaran borang soal selidik dan temubual bersemuka. Kaedah pemerhatian juga dilakukan terhadap gelagat pengguna dan aktiviti PID, manakala ulasan dokumentasi dibuat berdasarkan laporan tahunan dan buletin PID. Teknik interpretasi telah digunakan untuk menganalisis data. Hasil kajian mendapati bahawa semua faktor iaitu jangkaan kawalan, keberkesanan diri, kecekapan, motivasi, kesedaran kritikal, kemahiran membuat keputusan, kemahiran penyelesaian masalah, serta penyesuaian dan penyertaan menunjukkan maklum balas positif terhadap pemerkasaan pengguna *telecentre* kecuali kemahiran kepimpinan. Ini menunjukkan bahawa pembangunan *telecentre* dapat membantu memperkasakan masyarakat luar bandar di Malaysia. Dapatan juga mengesahkan bahawa teori pemerkasaan psikologi oleh Zimmerman boleh diaplikasikan dalam persekitaran sistem maklumat. Kajian ini menyumbang kepada pembentukan model pemerkasaan psikologi pengguna *telecentre*. Selain itu ianya juga menyumbang kepada cabang ilmu pengetahuan sistem maklumat khususnya dalam bidang komuniti informatik dan seterusnya kepada polisi-polisi berkenaan perlaksanaan *telecentre*.

Kata kunci: Teori pemerkasaan psikologi, Komuniti infomatik, Model pemerkasaan *telecentre*

Abstract

Community informatics is an area that focuses on the implementation and application of information technology in communities. Empowerment as an important concept used in assessing the impact of technology within organizations and communities. The potential of empowering the communities is through the development of telecentres that provide a platform for acquiring various skills and knowledge. Nevertheless, previous studies indicated various problems in engaging community when using the telecentre. In addition, most of these studies were concentrating on the operational aspects of the telecentre rather than the users. Thus, the objectives of this study are to describe how psychological empowerment constructs such as intrapersonal, interactional, and behavioural reflect empowerment of Pusat Internet Desa (PID) users and propose a telecentre users empowerment model. This study had applied the psychological empowerment (PE) theory introduced by Zimmerman in 1998 to examine the empowerment outcome of the telecentres implementation. The study was conducted using qualitative investigation of the multiple-case study of PIDs. Data was obtained from the users through open-ended questionnaires and face-to-face interview. Observation was also carried out on the users' behaviours and PID activities, while documentation reviews were performed based on the PID annual reports and bulletins. Data analysis was done using interpretation technique. The findings reveal that all factors; perceived control, self-efficacy, competence, motivation, critical awareness, decision making skill, problem solving skill, and coping and participation; show positive feedback except for leadership skill. This indicates that telecentre establishments can help in empowering the rural community in Malaysia. In addition, it is confirmed that the Zimmerman empowerment theory can be applied in the information systems environment. This study contributes to the development of a telecentre user psychological empowerment model. Moreover, it also contributes to the information systems body of knowledge particularly in the area of community informatics as well as to the telecentre establishment policies.

Keywords: Psychological empowerment theory, Community informatics, Telecentre empowerment model

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Problem

The term empowerment is defined as the notion of people having the ability to understand and control themselves and their environments (including social, economic, and political factors), expanding their capabilities and horizons and elevating themselves to greater levels of achievement and satisfaction (Lee, 2005; Wilson, 1996). Three levels of empowerment include organizational, community, and individual empowerment. The organizational empowerment refers to the organizational processes and structures that enhance member participation and performance and eventually improve the achievement of organizational goal. Community empowerment refers to collective action to improve the quality of life in a community and to the connections among community organizations, while individual empowerment refers to the transformation of individuals' lives in achieving goals and reaching targets (Clement, 1994; Perkins & Zimmerman, 1995; Wilson, 1996).

Regarding the information and communication technology (ICT) usage, individual are empowered by offering more power as citizens, more power as consumers, and more power to shape their own lives (Moore, 2003). Empowerment through ICT is achieved by supporting individual use of technology for personal needs and goals (Hermano, 1996 as cited in Lee, 2005). This means that empowerment implies the transformation of individual skills into actions to produce a self-determined change.

Empowerment is also considered as a prerequisite for competitiveness where ICT facilitates business operations (Collins, 1995).

In relation to the empowerment issue, Slater and Tacchi (2004) have pointed out that it is important to investigate the ways in which ICT projects have developed confidence and capabilities to the participants. Grunfeld (2007) also claimed that many ICT for development (ICT4D) project assessments often fail to answer key questions about how these ICT initiatives can contribute to empowerment, capabilities, and sustainability. After all, ICT has long been recognized as a tool to empower people especially the rural communities in developing countries (Kwapong, 2007). These indications verify Ashraf et al. (2008) remark that ICT impact research in developing countries is relevant to be carried out due to its scarcity. The ICT usage among rural communities can be promoted through community telecentres. These community telecentres have been rapidly promoted as a vehicle to provide access to information during the past decade, especially for rural communities in developing countries.

Telecentre provides various ICT services, such as access to the Internet, to computers and software capabilities, to electronic commerce applications, and to many other public information services (Townsend et al., 2001; Masiero, 2011) with the aim of achieving a variety of development objectives (Bishop & Bruce, 2005). This centre also represents a community centre that is used as a place for social gathering activities and interaction, learning, and mobilizing efforts in dealing with community problems and needs (Delgadillo et al., 2002).

Generally, the setting up of telecentre initiatives is to address the economic and social impacts of the shift to an information society. It is also a community-based effort to provide computer access and training to underserved populations that would otherwise not have such access such as rural communities (Jinqui et al., 2006; Lennie et al., 2005; O'Neil, 2002; Servon & Nelson, 2001). Since, the economic activities of the rural communities are mainly farming, fishery, and small scale business, ICT initiative may help in their development. For instance, it could help to boost farmers' output, improve market reach, eliminate intermediaries, provide knowledge to improve products requirement as well as increase rural peoples' social interactions. In addition, it will also help to prevent migration of youth to towns to look for better jobs or opportunities.

Most importantly, these community telecentres have been rapidly promoted as a vehicle to provide access to information during the past decade, especially for rural communities in developing countries. They have been viewed as an efficient approach to decrease the digital divide between developed and developing countries. Various telecentre projects have been piloted around the world and experiences have been accumulated. For instance, in Malaysia, under the Eighth Malaysian Plan (2001-2005), the government has developed various types of rural telecentres to provide accessibility to the rural communities. Some of the Malaysian telecentres include Pusat Internet Desa (PID)[1], SchoolNet[2], Medan InfoDesa (MID)[3], and

[1] The PID is one of the earliest rural internet initiatives launched in Malaysia that provides ICT infrastructure, capacity building and content development.
[2] The SchoolNet project provides broadband access to schools in rural and remote areas.
[3] MID is an ICT Training Centre in rural areas.

Kedai.Com[4]. Currently, there are 2,489 telecentres throughout Malaysia. Table 1.1 shows the distribution of 2,282 telecentres according to their main providers after excluding those of the State Government initiatives except Terengganu (EPU, 2012). These various ICT-based initiatives are developed to help in reducing the digital gap between the rural and urban communities. By creating community telecentres, it is expected that the rural communities can eventually improve their economic productivity and social well-being.

Table 1.1: Telecentre Distribution by Agency

MINISTRIES/AGENCIES	TELECENTRE NAMES	Total
Ministry of Information, Communication and Culture (MICC)	Pusat Internet Desa (PID)	42
	Perpustakaan Desa (PD)	774
	Klinik Desa & Klinik Kesihatan (KD)	359
	Pusat Maklumat Rakyat (PMR)	143
Ministry of Rural & Regional Development (MRRD)	Medan Infodesa (MID)	246
	Program Komuniti Usahawan Digital (PKUD)	27
Ministry Housing & Local Government (MHLG)	Projek BDD KPKT	12
Ministry of Science, Technology & Innovation (MOSTI)	Pusat Informasi Sains, Teknologi dan Inovasi (InfoSTi)	6
Malaysian Communications and Multimedia Commission (MCMC)	Pusat Jalur Lebar (PJK)	251
	Perpustakaan Jalur Lebar (PJL)	105
Ministry of Women, Family & Community Development (MWFC)	Pemulihan Dalam Komuniti (PDKNet)	17
Ministry of Youth & Sports (MYS)	Pusat Siber Rakan Muda (PSRM)	27
	Pusat Kegiatan Rakan Muda (PKRM)	220

[4] Kedai.com provides communication facilities in order to improve the ICT knowledge and skills of rural communities.

Universiti Utara Malaysia (UUM)	UUM Telecentres	2
Universiti Malaysia Sarawak (UNIMAS)	UNIMAS Telecentres	5
Terengganu State Government	Bestari.Comm	46
Total		**2,282**

Source: Malaysian Economic Planning Unit (EPU, 2012)

Of the above telecentres in Malaysia, PID project is the earliest rural telecentre, which was launched on 3 April 2000. This government funded PID, equipped with computer and Internet connectivity, is located in various rural post offices. The project started with three pilot sites: Kota Marudu in Sabah, Bau in Sarawak and Sungai Air Tawar in Selangor. Each site was equipped with five to seven computers. The centres provide IT skills training and knowledge acquisition programs to the rural community in Malaysia, including women, the elderly, and children without Internet access.

The continuous effort by the Malaysian government pertaining to the implementation of the various telecentres is essential in making sure that the country can achieve its goal in achieving the status of developed country by the year 2020. In fact, in the Ninth Malaysian Plan (2006-2010), the government has included a focus on rural communities towards ICT usage and adoption through raising awareness and with local empowerment programs. For this study, the focus will be on the telecentres established by the Ministry of Energy, Water and Communication (MEWC), the PID.

The telecentres built in the Malaysian rural neighborhoods in the country are under-utilised as much as they could be in delivering socio-economic value (Harris, 2005;

"Telecentres not Fully Utilized," 2007). Most of the rural folks are reported to use these centres just for checking e-mails, browsing the Internet and using certain computer applications ("Telecentres not Fully Utilized," 2007). Ezhar et al. (2007) revealed that even though there are users who use PID for self-development, there are many users who use the centre for entertainment. This could be due to the lack of motivation on self-development and social-relation enrichment. This shows that most of the users did not use the PID for more economical and beneficial opportunities such as doing business through the Internet. This also indicates that the community does not realize the value of IT in improving their quality of life as well as their economy. In addition, there is also an unbalanced usage among the people in the communities. The PID are regularly visited by young users such as school children and university students who usually use the computers and Internet for doing homework or assignments, and other personal tasks such as looking for job opportunities (Ezhar et al., 2007; Mohd Nizam, 2005; Zahurin et al., 2007). The above problems of under-utilization and imbalance usage among the communities can be associated to the empowerment issue that has been identified as not only part of the PID implementation challenges (Harris et al., 2007; UNESCAP, 2006) but also to telecentre in general (Wolske et al. 2010). Although it is good that the youth and young one use the PID, the other target group remained oblivious to the telecentre.

The question of the use of ICT for individual empowerment has been an issue for quite some time. For instance, Shneiderman (1990) expressed his hopes on how individuals are empowered by new technologies and how they apply their growing

power. He also believed that computer users can experience competence, clarity, control and comfort and feeling of mastery and accomplishment that eventually the users can take pride in a job done well and appreciate the designers of the technology. In fact, the end-user computing (EUC) environment also emphasize on the importance of the successful of information systems (IS) in empowering users to utilize IT and to perform various functions in an organizational context (Torkzadeh & Lee, 2003).

Literatures had indicated that research on telecentre is still required in establishing the successful and sustainable factors of such centres (O'Neil, 2002; Romm & Taylor, 2001) as well as on its usage (Gomez & Camacho 2009). In addition theory-based research in studies on telecentres is still lacking (Harris, 2001; Roman & Colle, 2005; Bailey, & Ngwenyama, 2009; Rega, 2010). In-depth evaluation of telecentres is sorely needed since many of the telecentres established around the developing world as pilot projects are reaching a certain stage of maturity (Roman & Colle 2005). The fact is true in terms of the telecentre in Malaysia since the centres were developed between the year 2000 and 2003. Moreover, PID has gone ahead than other telecentres in Malaysia whereby they are now in the stage of focusing on social entrepreneur and to create entrepreneurs among the community (Yogesvaran 2007). Sey and Fellows (2009) stated that a research agenda is required in utilizing either quantitative or qualitative methodologies since there is no definitive evidence-based statement on the impacts of public access to ICTs. Local qualitative studies provide rich contextual information which could be made even more useful if, in addition to identifying impacts, they also provide indications of the breadth and

depth of impact (Sey & Fellows 2011). This is supported by Cheang and Lee (2010) that stressed the shortage of sufficient framework and methodology in telecentre research.

Bailur (2009) "argued that there is insufficient discussion of representation (the problems of showing the realities of the lived experiences of the observed settings) and reflexivity (the relationship between knowledge and the ways whereby knowledge is produced) in ICTD literature, particularly regarding telecentre users and non-users. She also suggested that the process of research methods and theorizing from findings could be analyzed in more detail". Hayden and Ball-Rokeach (2007) and Grunfeld (2007) agreed that there is a lack of adequate knowledge relating to ICT programs evaluations particularly in terms of empowerment.

1.2 Problem Statement

There is a need to examine the impact of PID implementation on individual empowerment. At present the main focus of all telecentres in Malaysia is to provide access and helping the community to adapt ICT as a new way of life. Many evaluations focus on their operational aspects, such as their technical, financial, and managerial performance and sustainability instead of examining the social impacts on the communities in which they are situated (Kumar & Best 2006; Rega, 2010). Very few research is able to highlight the impact of the telecentre on individual empowerment. In addition, only a few research manage to document the value telecentre brings to the community (Norizan & Faridah, 2006; Nor et al., 2010;

Norizan et al., 2010). Thus, there is a need to carry out the research and gauge on its impact and value. The findings would help telecentre policy makers and decision makers to design and implement better model of telecentre to meet the requirement of community users. It is within this context that this study will be undertaken and objectives of the study set to address this gap in research.

For this study, specifically, the Zimmerman psychological empowerment theory is applied since it is focusing on the individual level of analysis in examining the empowerment outcome of PID implementation. This theory is chosen based on Zimmerman and Warchausky (1998) suggestion that empowerment theory can be a useful framework for attaching rehabilitation research that focuses on control and involvement. In this case, PID can be regarded as having similar function to a rehabilitation centre that is to improve the well-being or the quality of life of individuals. This is based on one the definitions of the term rehabilitation that is to improve a person's skills through training to enable them to live a more fulfilling life in the community (http://www.encyclo.co.uk/define/rehabilitation). Even though, the empowerment theory originated from the community psychology discipline, the theory can still be applied to the IS research because of the interdisciplinary nature of IS research (Benbasat & Zmud 2003). Walsham & Sahay (2006) suggests that there is a need of a study that deeply intertwined with issues of power and recommends the use of using appropriate critical theories in assessing a topic such as the use of ICTs for marginalized groups.

1.3 Research Objectives and Research Questions

The primary aim of this research is to explore and understand the individual's empowerment through case studies of PID. The following specific research objectives are to be fulfilled:

- to describe how psychological empowerment factors (intrapersonal, interactional, and behavioral) reflect empowerment of PID users
- to propose a model of psychological empowerment of telecentre users

The research question is:

- How do intrapersonal, interactional, and behavioural factors reflect the empowerment of PID users?

1.4 Scope of the Study

There are altogether 42 PID throughout Malaysia. However, this study will only focus on the 12 PID in the northern region. Out of this number, only three PID are chosen as case studies, which are PID Simpang Empat in Perlis, PID Kuala Nerang in Kedah, and PID Balik Pulau in Pulau Pinang. These three telecentres were purposely selected as the case studies because it can help the researcher to understand the problem and research questions (Creswell, 1994). Furthermore, they represent the homogeneity of the population as the physical characteristics of the PID are similar in terms of goals (to provide ICT access), management structure (led by manager/coordinator), locality (situated at the annex building of selected post

offices in rural area), and users (undeserved group) (UNESCAP, 2006). The selection was also due to the following reasons:

a. The PID had been honoured with various achievements in local and national levels such as The Best Pusat Internet Desa Competition award and ICT Excellence Awards 2005. As for Kuala Nerang, the KUS is led by a successful local business person.

b. Situated in the Northern Region of Peninsular Malaysia, UUM through its ITU-UUM Centre of Excellence (CoE) in Rural ICT Development wanted to become the hub for the rural ICT development programmes and activities. This ITU-UUM CoE has collaborated with these PID to be part of their research and development.

1.5 Justification of the Study

The findings generated from the study have valuable contribution to both research and practical point of views. It provides an insight into the exploration of individual empowerment among the telecentre users in Malaysia. The major research or theoretical contribution of this study is the definition and exploration of empowerment in the field of Information and Communication Technologies for Development that in general lacks sound theoretical frameworks, including the study on telecentres. The use of the psychological empowerment (PE) theory helps in proposing the empowerment model of telecentre users. The model is represented by the three PE constructs followed by the eight PE factors and finally the indicators of each factor. The three PE constructs are intrapersonal, interactional, and behavioural.

The factors of the first PE construct include perceived control, self-efficacy, competency, and motivation. For the second PE construct, interactional, the factors are critical awareness, decision-making, and problem solving skills. Finally, the factors for the behavioural construct are coping and participation which can be used to evaluate or assess users' empowerment in other type of telecentres. The evaluation is important so that government or private agencies can determine the impact of their community ICT-based projects. The model can also be used as a guide to conduct further improvement not only on the operations of the telecentre but also increasing community participation.

This study can be used as evidence of PID program outcomes as it provides a rich description of how telecentres' implementation can help in empowering rural community. This can then help in informing the policymakers regarding more effective public policy and program planning particularly in terms of ICT for development policy and practice. For instance, results of this study emphasize the need for creative solutions to harness the potential offered by cybercafés in urban areas, and to look for ways (policies, partnerships, incentives) to make them more accessible and useful to adults and seniors, women, lower income users, those with no formal education, in sum, to those marginalized and excluded from goods and services in society. Therefore, the government has to undertake the obligation to provide the ICT initiatives for these underserved groups as the evidence shows that the community do benefit by their need to improve the socio-economic status. Various public-private collaborations and partnerships will help to ensure the sharing of cost and massive participation.

The above contributions can certainly help the Malaysian government to achieve its aspiration of vision 2020 in bridging the digital divide towards becoming knowledge-based and high income society. The agenda is also part of the Malaysia Super Corridor 2.0 under the ICT for Society framework that states "the use of ICT to empower society, bridge the income gap & reduce socio-economic inequalities, enhance the quality of life and improve the quality of human capital" (National ICT Task Force, 2010). Indirectly, the study contribute to the information systems in developing countries (ISDC) research agenda in the sense of understanding of IS innovation phenomena, mainly through its attention to social context and strategic concerns associated with socio-economic development (Avgerou 2008).

1.6 Summary and Structure of the Thesis

On the whole, this study provides a rich portrayal of how individuals can be empowered through telecentre implementation in a community. Specifically, the study proposes a psychological empowerment model that can be used to evaluate or assess telecentres users' empowerment. The thesis begins by presenting the overview of the study particularly on the research background, objective, and implication of the study in Chapter One. Chapter Two presents the literature reviews related to the importance of telecentre, the concept of empowerment, and the empowerment theory used as the guiding framework in this study. Chapter Three describes the methodology used in this study and proposes the empowerment conceptual model/framework. The research design uses multiple case studies together with a variety of data collection procedures and interpretive data analysis. In chapter Four, the data analysis is presented by describing each case thoroughly. The cross case

analysis is presented in chapter Five. Finally, chapter Six discusses the theoretical and practical implications, limitations, and recommendations of the study.

CHAPTER TWO
REVIEW OF THE LITERATURE

2.1 Introduction to the Chapter

This chapter attempts to extend the understanding of what has been introduced in chapter one. This chapter begins with some background of the study domain; telecentre, and then the concept that is used in this study: empowerment. The last part of this chapter is on the discussions and justifications of the theoretical framework that will be used for this proposed study.

2.2 The Concept of Empowerment

The term empowerment has been widely used in the social sciences across a broad variety of disciplines, such as community psychology, management, political theory, social work, education, women studies, and sociology (Lincoln et al., 2002). The term empowerment is most frequently used in the community psychology disciplines (Hur, 2006). However, there is no clear definition of empowerment across disciplines. In the literature, empowerment is defined and described in various ways, either as a term, construct, concept, or process. Usually, the empowerment concept is defined narrowly using only a specific scholarly discipline or program (Thomas & Velthouse, 1990; Zimmerman, 1990; Page & Czuba, 1999; Peccei & Rosenthal, 2001; Gholipour et al., 2010). Several empowerment definitions are presented in this section together with a working definition that will be used in this study.

The term empowerment is defined as the notion of people having the ability to understand and control themselves and their environments (including social, economic, and political factors), expanding their capabilities and horizons and elevating themselves to greater levels of achievement and satisfaction (Lee, 2005; Wilson, 1996). Generally, empowerment is a construct used by theorists to explain organizational effectiveness (Conger & Kanungo, 1988). In human resource management empowerment is regarded as the relational construct related to the power of control excercised by individuals over the resources. For example, Thomas and Velthouse (1990) defined empowerment, as the internal motivation, based on four perceptive dimensions namely sense, competence, choice, and impact. Other dimensions that have been focused by researchers relating to employee empowerment include control of one's own work, autonomy on the job, variations of teamwork, and pay systems (Honold, 1997). Chamberlain (1997), who views empowerment more in the perspective of mental health rehabilitation, refers to empowerment as a process that has a number of qualities such as: having decision making power, having access to information and resources, having a range of options from which to make choices. Empowered individuals are described as having high self-esteem, feelings of self-efficacy, feelings of control over his/her life, increased critical awareness, and increased civic participation (Perkins & Zimmerman, 1995; Zimmerman, 1995, 2000).

From the perspective of ICT, empowerment is achieved by supporting individual use of technology for personal needs and goals (Hermano, 1996 as cited in (Lee, 2005).

In other word, empowerment through ICT means transforming skills into actions to produce a self-determined change.

There are three levels of empowerment: organizational, community, and individual empowerment. The first level of empowerment, organizational empowerment, refers to the organizational processes and structures that enhance member participation and performance and eventually improve the achievement of organizational goal (Clement, 1994; Perkins & Zimmerman, 1995; Wilson, 1996). The second level of empowerment, community empowerment refers to collective action to improve the quality of life in a community and to the connections among community organizations (Clement, 1994; Perkins & Zimmerman, 1995; Wilson, 1996). Interestingly, organizational and community empowerment are not simply a collection of empowered individuals (Perkins & Zimmerman, 1995). Finally, individual empowerment is concern with the transformation of individuals' lives in achieving goals and reaching targets, which they had thought impossible (i.e. to gain authority, skills, status, self-belief and image, progressing to greater things and increasing rewards) (Wilson, 1996). The individual empowerment is also referred as psychological empowerment (PE).

Based on the above definitions and descriptions of empowerment, the working definition of empowerment in this study refers to the ability of a person in acquiring technological/ICT skills and competency to be able to control oneself and the environment in making positive change in one's life.

2.2.1 ICT and Empowerment

Digital technology is changing societies across the world. It is doing so by changing the power relationships that have structured those societies. It offers the potential to empower individuals by giving people more power as citizens, more power as consumers, and more power to shape their own lives (Moore, 2003). ICT links to empowerment in extremely diverse ways, such as providing access to rapid communication and timely information (Beardon, 2006). ICTs are also generally regarded as new tools that can serve as effective agents of positive economic, social and political change in developing regions (Morrell & Sterling, 2006). In fact, ICT for development is widely regarded as one of the best approaches to empower marginal communities (Slater & Tacchi, 2004; Samaranayake, 2004; Mathison, 2004 as cited in Rahman, 2006).

The information management literature presents empowerment as an important concept when assessing the impact of technology within organizations. Shneiderman (1990) believes that computer users can experience competence, clarity, control, comfort, and feeling of mastery and accomplishment that eventually the users can take pride in a job done well and appreciate the designers of the technology. Clement (1994) states that computer at workplace can positively empower users by bringing relevant information that eventually can improve their performance. Sia et al. (2002) argue that technology increases flexibility in work practices and empowers local communities of practice, getting away from the hierarchical decision-making that is often caused by lack of knowledge. Haris & Rajora (2006) points out empowerment as one of the variables of interest in examining ICT project outcomes.

However, empowerment does not have a direct causal effect from any ICT-based project implementations. Even though people can possess IT skills from the various ICT-based project initiatives, only those who can apply the skills appropriately will have the advantage of having greater satisfaction such as having higher earnings and more job opportunities (Moore, 2003; Beardon, 2004; Harris, 2007, Prasad & Sreedevi, 2007). Acoording to Haris & Rajora (2006), ICT empowers people in the sense of embracing new skills and increasing the freedom of making their own decision. This indicates a close association between empowerment and the availability of information and ICT.

Therefore, this indicates that there is a need to determine whether the PID users are empowered after being provided with ICT and Internet access. As one of the ICT-based project initiatives, telecentres have the potential to empower rural communities (Mehra et al., 2004; Lennie et al., 2005; Elijah & Ogulande, 2006; London et al., 2006; Harris, 2007; Hayden & Ball-Rokeach, 2007, Norizan et. al, 2010). With ICTs, many rural communities acquire the capacity to improve their living conditions and become motivated through training and dialogue with others to a level where they make decisions for their own development (Balit, 1998 as cited in (Elijah & Ogulande, 2006). Nevertheless, a reality check is still required to verify that empowerment has actually occurred from the centre implementation (Harris, 2007).

2.2.2 Research on Empowerment related to ICT

O'Neil (2002) indicates that individual empowerment is one of the five major outcomes theories used in Community Technology Centres (CTCs) evaluations. The other theories include strong democracy, social capital, sense of community, and economic development.

Based on the information management literature, few researchers focus on the issue of empowerment. Clement (1994) considers the issue of empowerment to be important to the study of the impact of IT on the workplace. Yat (2004) regards IT as an important tool for empowerment by studying the use of computers among senior persons. The findings in his study indicate that the respondents changed quite substantially in terms of the three empowerment dimensions: self-efficacy, social awareness and skill building. Adams et al., (2005) conduct a study on how technology can empower or exclude its users, specifically on the use of digital libraries. The result of the study highlights the interaction between technologies and organizational norms as a greater factor in users being marginalized and excluded from technology. Poor technology design, training, and support produced a knowledge gap between those who could and could not use the technology.

Mehra et al. (2004) carry out a study on the use of internet for empowerment of the minority and marginalized user. They used three case studies in their research to learn more about the constructive change of incorporating internet into the daily life of the marginalized community. One of the cases involves the Community Networking Initiative (CNI), computer training and distribution program for low-

income communities in Champaign County, Illinois. Similar studies related to the use of internet for empowerment are also carried out by other researchers. For example, Amichai-Hamburger and his colleagues (2008) have proposed a model that serves to explain E-empowerment, which focuses on the use of Internet in empowering people. On the other hand, Stavrositu and Sundar (2008) specifically investigate on the potential of blogs in empowering women. Their findings suggest that blogging activities can psychologically empowered those who are undertaking it. Figueiredo and his colleagues (2009) also supported that blog can be used for empowerment. Their study manages to reveal evidence regarding the use of video blogging as ICT tool to empower a community as a whole, and young video reporters in particular. From her case studies of rural Moroccan weavers selling textiles, Davies (2008) demonstrates that the use of ICTs, particularly the Internet can and does lead to some degree of empowerment.

In order to ensure that ICT initiatives fundamentally address the issue of empowerment, Beardon (2006) has done a study involving the ICT project initiatives, which have been running pilots in Burundi, India, and Uganda. Her study is an attempt to show how attention to the human communication dimensions of ICTs can make applied technology more sustainable and appropriate for poor communities. Similarly, Prasad & Sreedevi (2007) stated that women participation in the digital revolution is expected to not only empowered them socially and economically but also to reduce the gender and digital divide in developing countries.

Other research discuss the issue of empowering the marginalized communities through ICT-based project initiatives (Beardon, 2006; Elijah & Ogulande, 2006; Gigler, 2004; Kwapong, 2007; Litho, 2005; Masi et al., 2003; Mehra et al., 2004; Morrell & Sterling, 2006; Nath, 2001; Norizan & Faridah, 2006; Pattanaik, 2005; Siddiquee & Kagan, 2006; Bailey, 2009; Gomez et al., 2009; Cheang & Lee, 2010). The empowerment through ICT-based project initiatives is significant in examining the development of participants' confidence and capabilities (Slater & Tacchi, 2004), particularly when the use of ICT has been accepted as one approach of empowering rural communities in developing countries (Kwapong, 2007). Therefore, the study of empowerment relating to ICT-based project initiatives is still relevant due to the lack of ICT public access impact research in developing countries (Ashraf et al., 2008; Sey & Follows, 2009; Cheang & Lee, 2010). Among the initiatives of ICT usage in rural communities is through the establishment of telecentres.

2.3 The Importance of Telecentre

In general, a telecentre is considered as a place for people from all walks of life can have access to computer resources and the Internet. In Malaysia, as defined by the Economic Planning Unit of the Prime Minster Department, telecentre refers to a one-stop centre that provides Information and Communication Technology (ICT) and Internet services to various local communities in improving their socio-economic status (EPU, 2007). Most importantly, it provides access to ICTs for people who cannot afford to own their own. ICT has always been recognized as one tool to support the achievement of individuals' educational and economic development goals (Wolske et al., 2010). While each telecentre is different, the common focus is

on the use of digital technologies to support community, economic, educational, and social development; reducing isolation, bridging the digital divide, promoting health issues, and creating economic opportunities. Telecentres are often initiated by private or public business initiatives, which provide communities with information and telecommunication services, with the aim of achieving a variety of development objectives (Proenza, 2001; Bishop & Bruce, 2005; Rao, 2008; Bailey & Ngwenyama, 2009).

Telecentres have presented significant potentials to diffuse ICTs among the poor and to bridge the digital gap (Lennie et al., 2005; Elijah & Ogulande, 2006; Hazita et al., 2007; Wolske et al., 2010). They are especially important to rural communities, where most of the poor reside. Due to the poor communication infrastructure, low levels of knowledge and limited incomes have put the rural people in a disadvantaged position, resulting in a huge digital divide between the urban and the rural (Noor Ismawati & Ainin, 2005; Jinqui et al., 2006; Wolske et al., 2010). The digital gap has been broadly articulated as the troubling gap between those who use computers and the internet and those who do not. In casting the digital divide as important national problem, scholars, policymakers and the public recognize the tremendous potential of the internet to improve everyday life for those on the margins of society, and to achieve greater social equity and empowerment (Mehra et al., 2004; Figueiredo et al., 2006).

These telecentres are ways of providing access to technology so that rural communities can become active participants in the digital world (Servon & Nelson,

2001; Lennie et al., 2005). The earlier telecentres are set up in office spaces equipped with computer and telecommunication systems, used by one or several employers, thereby making it possible to work at a distance using the Internet (Aguila Obra et al., 2002). The centres make IT related services available in isolated areas. Aguila Obra and her colleagues (2002) also identified the beginning of various telecentres initiatives in the West. The first reference of telecentre is in 1974 that discussed about the satellite offices in California, while the first urban teleworking center is the Marne-la-Valle Neighbourhood Work Centre (France) developed in January 1981.

Telecentres originated from Scandinavia, where limited telecommunications facilities in remote rural areas left communities disadvantaged in terms of access to training, education and public and private services (Ellen, 2003). The first telecentres were established at Härjedalen in Sweden and then at Lemvig in Denmark in 1985 (Qvortrup, 2001). These telecentres are developed as social experiment and are named telecottages. These centres are also known as Community Teleservice Centres since they serve as multifunction centres with their own staff that provide a local community situated in remote rural areas or in low income urban areas with computer and telecommunication technology available to the whole community. In 1993, there were 200 telecentres in 11 countries worldwide (Qvorturp, 2001).

Generally, there are two models of telecentres: business and development purposes. Both models provide ICTs related service to community. The business model of telecentres, usually known as cybercafés, are privately owned business with the aim

of profit making. On the other hand, the telecentres for development are established to fulfill government social obligation to bridge the digital divide between the urban and rural communities. The telecentres establish for development purposes usually are free or low cost, friendly place (in a community centre, school, library, housing facility or other convenient location) where people of all ages and abilities can come to learn about computers, use the internet, explore new careers, further their education, participate in community activities or develop technology skills (Muir, 2004; Lennie et al., 2005). These centres are categorized as ICT community-based initiatives that provide IT related services, with the aim of achieving a variety of development objectives such as promoting local social and or economic development.

As access provider, telecentres allow community members to drop in and surf the Internet or engage in a variety activities such as e-mailing, doing homework or assignments, looking for job opportunities, preparing official letters, designing cards, developing webpages, and attending computer classes (Chow et al., 1998; Lentz et al., 2000; Servon & Nelson, 2001; Zahurin et al., 2007). Besides providing ICT and Internet access Computer Technology Centres (CTCs) have the potential to empower rural communities and facilitate socio-economic developments (Elijah & Ogulande, 2006; Norizan, 2010). Likewise, Harris (2005) mentioned that one of the telecentre's operational targets is to empower communities with skills for fostering local development. He also stated that a strategy that can be used to scale up telecentres is by empowering the disadvantaged and underserved groups.

2.3.1 Facilities and Services available at Telecentres

Telecentres are usually located in schools, libraries, local authority buildings, or converted houses. The centre is usually managed by a minimum of two staffs who act as the manager and assistant. The generic components of a telecentre include premises, staff and equipment. The equipments in the centres usually include personal computers, printers, scanners, modems, telephone network, photocopier, and telefax. Along with the telecommunication devices, the centres are also equipped with other supporting materials such as reference books and teaching aids.

In terms of application software, most centres provide the following: word-processing, desktop publishing programs, spread-sheets, graphics, educational programs/packages, computer games, and others. The computers in the centres are usually linked together in a network. The most popular services provided in the centres include computer training, photo copying, telefax service, and desk top publishing.

2.3.2 Telecentre Models in Malaysia

Telecentres exist in almost every developing country (Harris, 2007) under a variety of names: internet centre, community centre, community technology centre, online access centre, electronic village halls, communal computing facilities, multipurpose communication centres, and many others. Similarly, in Malaysia, these centres are also known as Pusat Internet Desa (PID), SchoolNet, Medan InfoDesa (MID), Kedai.Com, and many others. These names are assigned based on the various planning and implementation policies of the responsible agencies or stakeholders.

For example, PID was sponsored by the Ministry of Energy, Water and Communication (MEWC) and Multimedia Commission, while the MID was implemented by the Ministry of Rural and Regional Development, Pusat Internet Desa. Each model of the telecentres has its own objectives, aims, basic infrastructures, business activities, hierarchy and structures and its means of financial supports.

At the moment, there are 2,489 telecentres in Malaysia (EPU, 2012). The main agenda of the telecentres development in Malaysia is to bridge the digital divide among the communities in ensuring equal access to ICT. There are several objectives of establishing these telecentres which are (i) to provide information to local communities particularly those in rural or underserved areas; (ii) to develop an information centre for relevant communities to access the Internet; (iii) to prepare and manage a training program on computer literacy; (iv) to increase the computer application skill of local communities; and (iv) to stimulate economic and social activities among local communities (Harris, 2007; Norizan et al., 2010).

More telecentres will be built to cover at least one telecentre per mukim (Raudatil Jannah, 2010). This is evidenced based on the drastic increase in allocation for the development of Telecentres from RM18.1 million under the 8th Malaysia Plan to RM101.0 million under the 9th Malaysia Plan (EPU, 2012). The development of these telecentres is to ensure that the community especially those in the rural areas to have access not only to ICTs but also to ICT trainings and programmes. The most recent development is the establishment of the Pusat Internet 1Malaysia (PI1M) under the 2013 budget. The PI1M is a programme under the Malaysian

Communication and Multimedia Commission (MCMC) which provide collective broadband internet access to 100 Citizen Housing Program in selected urban areas.

In this study, PID is chosen to be the background of the study in order to understand the issue of individual empowerment among its users. These PID have different models of operation depending on the stakeholders and objectives of the implementation.

2.3.3 Pusat Internet Desa (PID) as Telecentres in Malaysia

PID is one of the projects set-ups by the Malaysian government to bring the Internet to small towns and rural communities in Malaysia, and is initially run by the Ministry of Energy, Water and Communication (MEWC), Malaysia Post Berhad and Maju Sedunia Digital (MSD). However, the responsibility of MEWC has been transferred to the Ministry of Information, Communication and Culture (MICC). The PID is developed in thirteen states in Malaysia excluding the Federal Territories Currently. There are a total of 42 PID that are spread throughout the country (Table 2.1). The MEWC aims to set up 240 centres by the year 2010 which will eventually reaching an estimated 2.8 million members of the rural communities. This aim corresponds to the government's aspiration to achieve fully developed nation in the year 2020. According to 2004 statistics, there are more than 53,000 PID users with more than 35,000 have undergone computer training under the PID program (Bridging the Digital Divide, 2008).

Table 2.1: PID in Malaysia

State	No.	Location	State	No.	Location
Perlis	1	Simpang Empat	Johor	23	Sri Medan
				24	Pagoh
				25	Labis
				26	Bandar Penawar
				27	Bandar Tenggara
				28	Sungai Mati
Kedah	2	Bukit Kayu Hitam	Kelantan	29	Kuala Balah
	3	Kuala Nerang		30	Kuala Krai
	4	Yan			
	5	Kupang			
Pulau Pinang	6	Balik Pulau	Terengganu	31	Marang
	7	Tasek Gelugor		32	Kuala Besut
Perak	8	Selama	Pahang	33	Sungai Koyan
	9	Kuala Kurau		34	Bukit Goh
	10	Parit		35	Bandar Tun Razak
	11	Langkap			
	12	Tanjung Malim			
Selangor	13	Rasa	Sarawak	36	Kanowit
	14	Beranang		37	Betong
	15	Hulu Langat		38	Mukah
	16	Sungai Pelek		39	Song
	17	Tanjung Sepat			
	18	Sungai Air Tawar			
Negeri Sembilan	19	Lenggeng	Sabah	40	Kota Belud
	20	Kota		41	Tenom
	21	Bandar Sri Jempul		42	Sipitang
Melaka	22	Tanjong Kling			

Among the objectives of the PID establishment are to improve info-communications access in the rural communities, provide Internet access terminals where rural residents can afford good access and to provide Internet access free-of-charge, develop and update local homepages to provide useful and interesting information for the rural residents, run ICT beginners' courses to raise the ICT literacy and skill level of the rural residents, transfer homepage updating skills to the local PID committee, and stimulate social and economic activities in the community (Mohd Nizam 2008; Harris 2007; Norizan et. al, 2010).

Basically, the PID provides IT skills training and knowledge acquisition programs to the rural community in Malaysia, including women, the elderly, and children in order to upgrade the knowledge and computer literacy among the rural communities and to assist the development of information and knowledge society. Besides providing accessibility, the PID is set up with the objective of empowering the rural communities (Mohd Nizam, 2005; Harris et al., 2007). The number of PID in each state and the types of activities and services provided from each centre are different.

The PID is located at the various post-offices in the specific community. Most of the PIDs operate between 8.30 a.m. to 5.30 p.m. on weekdays. All PIDs are provided with between 5 to 7 personal computers including other basic ICT facilities such as printers, scanners, and Internet access. Apart from that, many PID are also equipped with photocopy and fax machine, LCD projector, digital camera, and reference books. The services provided by the PID include computer classes, advice on computer purchase, computer selling and servicing, card printing and writing official letter services, and internet access. Other services offered include webpage development, e-procurement services, and posting advertisement in webpage.

The PID consists of the following categories of users: students, graduates, housewives, farmers, businessmen, government servants, private sectors employees, and pensioners. Among these categories, the most frequent users are from the students and graduates categories (Ezhar et al., 2007; Hazita et al., 2007; Zahurin et al., 2007). Reasons for their frequent visits include completing their assignments, searching for information, looking for job or study opportunity, and improving their IT knowledge. On the other hand, farmers, and pensioners do the least visits due to

various reasons such as, no interest in computer technology, computer phobia, incompetence in using computers, and lack of ICT awareness.

The studies on PID in Selangor (Mohd Nizam, 2005) and in Kedah and Perlis (Zahurin et al., 2007) have shown that the implementation of the centres in that states has been well accepted by the local communities. The centres do not only give the communities an access to the Internet, but also improve their knowledge and skills in ICT. The numbers of users and visitors have increased every day. Unfortunately, the centres do not have enough ICT resources, for example, PCs, printers, and other peripheral devices. Each centre is only equipped with between five to seven PCs. The centres also have a limited number of staff to administer the PID. Mohd Nizam's (2005) study finally concluded that PID in Selangor and other states should be given more spaces and resources in order to achieve the PID's objectives. The PID is managed by two administration staffs employed by the MEWC. The staffs include the PID supervisor and his/her assistant. They are full-time staffs employed on contract basis. The supervisor must be a degree holder while the assistant usually a diploma holder.

According to Dato Dr. Halim Man, Secretary General of MEWC, the challenges of PID that have been recognised in making these telecentres successful in delivering social and economic benefits include: educating and training rural communities who are extremely ICT illiterate, capturing the interest of the communities surrounding the telecentre, ensuring participation and usage from the communities, getting a local figure to champion the initiative. Nevertheless, various steps have been taken to address those challenges. The steps include employing a degree and diploma holder

supervisors and assistant supervisors to educate and train the rural community, establishing centre committee consisting of local figures and leaders to carry out promotion and awareness efforts to the rural community, involving the communities in telecentre activities to instill a sense of belonging to the telecentre, and constant monitoring of activities and utilization at the Ministry through an online Network Monitoring Centre ("ICT Developments in Malaysia - KTAK's view," 2007).

Besides the above challenges, empowerment of the communities seems to be one of the critical factors in ensuring the successful and sustainability of the PID. In fact, Norizan and Faridah (2006) have also stated that it is timely that the PID be used to empower the rural communities so that health awareness, education and training, access to job opportunities, and income can be increased and improved.

2.4 Theories on Empowerment

The origin of empowerment as a form of theory was traced back to the Brazilian humanitarian and educator, Freire (1973) (as cited in (Hur, 2006), when he suggested a plan for liberating the oppressed people of the world through education. Empowerment was most commonly associated with alternative approaches to psychological or social development and the concern for local, grassroots community-based movements and initiatives (Parpart et al., 2003, as cited in (Hur, 2006).

Since the concept empowerment has been widely used in a number of disciplines, there are various theories that have been applied in studying the empowerment

phenomenon. For instance, in the area of management many researchers have studied the empowerment of individuals in workplace (Thomas & Velthouse, 1990; Spreitzer, 1995; Hochwalder & Brucefors, 2004; Holdsworth & Cartwright, 2003; Sarminah, 2007). These studies assessed the employees' psychological empowerment (PE) based on four dimensions: meaning, impact, competence, and self-determination. Spreitzer (1995) and Hochwalder and Brucefors (2004) found that the four dimensions do contribute to the overall construct of empowerment. Sarminah (2007) also agreed that the social characteristics such as, self-esteem, power distribution, information sharing, knowledge, rewards, transformational leadership, and organizational culture constitute a positive factor in influencing PE in organizations. On the other hand, Holdsworth and Cartwright (2003) finding is different from the other studies, where they found out that the overall call centre workers are significantly less empowered in all dimensions except competence.

In the community psychology discipline, most studies that focused on empowerment are related to the rehabilitation and health programs (Becker et al., 2004; Peterson & Hughey, 2004; Peterson & Reid, 2003). These studies applied the three constructs of PE empowerment: interpersonal, intrapersonal, and behavioural. For instance, Peterson & Hughey (2004) focuses on the intrapersonal construct of PE to examine the role of gender for empowerment development. His findings indicate that the effects of social cohesion on intrapersonal empowerment were different between male and female. Peterson and Reid (2003) highlight that awareness of neighbourhood substance abuse problems as the key factor that had a potential effect on citizen participation and empowerment. Other studies in this community

psychology discipline that relate to ICT for development area, apply the participatory theories such as Participatory Rural Apraisal (PRA) and Participatory Learning in Action (PLA) to address the issue of empowerment (Beardon, 2006; Masi et al., 2003; Mehra et al., 2004). PRA aims at enabling local people and communities to take control over their own development and PLA refers to experiences from a growing group of participatory approaches to research and development. In their study, Masi and his colleagues (2003) found that Internet access to community could lead to increased empowerment and appreciation of information technology. Similarly, this study is aiming to find out whether individuals in a particular community are empowered after giving the access to ICT facilities through the use of the telecentres. However, instead of participatory theory, this study applies the Zimmerman's model of psychological empowerment which includes three constructs; intrapersonal, interactional, and behavioural in order to study the individual empowerment of telecentres' users.

In terms of ICT programs evaluation, Gigler (2004) and Grunfeld (2007) applied the Amartya Sen's capability approach to determine whether ICT can play a role for the empowerment of marginalized groups. The finding indicates that there is no direct and causal relationship between ICTs and empowerment, but the relationship is being shaped by a dynamic, multi-dimensional interrelationship between technology and the social context. Siddiquee and Kagan (2006) utilize the grounded theory approach to understand refugee women's engagement with the Internet and its impact on their empowerment and identity. In addition, they also applied the Zimmerman's model of psychological empowerment which includes the three

constructs; intrapersonal, interactional, and behavioural. From the study, it is found that technological engagement helps these women's to develop their identity, resolve conflicts, and foster psychological empowerment in terms of actively facilitating their resettlement and integration.

Literatures had denoted that research on telecentre is still required in establishing the successful and sustainable factors of such centres (O'Neil, 2002; Romm & Taylor, 2001) especially a theory related study (Harris, 2001; Roman, 2004). Bailey & Ngwenyama (2009) mentioned that there are no accepted theories in the literature regarding the study on telecentre, while Rega (2010) claimed that only a few guidelines and theoretical models have been used or developed to assess extra-technological issues, such as psychological, economic and sociological. Thus, this creates a gap in the research field.

In terms of the Information Systems (IS) theories, most of them such as diffusion of technology (DOI), technology acceptance model (TAM) and unified theory of acceptance and use of technology (UTAUT) have employed models and factors that are used for examining and assessing users' diffusion, adoption, and acceptance of ICT applications (Sehgal, 2007; Cannoy, 2008; Hong, 2010). As far as the researcher knows, there is lack of existing theory for individual empowerment in telecentre research, this study uses the Zimmerman psychological empowerment theory to explore and understand the telecentre users' empowerment.

2.5 Theoretical framework of the Study

Empowerment theory offers a model for understanding the process and the consequences of efforts to exert control and influence over decisions that affect one's life, organizational functioning, and the quality of community life (Perkins & Zimmerman, 1995; Zimmerman & Warschausky, 1998). The theory also provides principles and a framework for organizing knowledge. It suggests ways to measure the construct in different contexts, to study empowering process, and to distinguish empowerment from other constructs such as self-esteem, self-efficacy, or locus of control (Zimmerman, 2000).

Before defining the empowerment theory, one must acknowledge the difference between empowerment processes and outcomes (Table 2.2). Empowerment process attempts to gain control, obtain needed resources and critically understand one's social environment. It also helps to develop skills so individuals can become independent problem solvers and decision makers. Empowerment outcomes refer to the operationalization of empowerment. The outcomes differ according to the level of analysis. The focus of empowerment outcomes is to study the consequences of citizen attempts to gain greater control in their communities or the effects of interventions designed to empower participants (Zimmerman & Warschausky, 1998).

Table 2.2: A Comparison of Empowering Processes and Empowering Outcomes across Level of Analysis

Level of analysis	*Process ("empowering")*	*Outcome ("empowered")*
Individual	Learning decision-making skills Managing resources Working with others	**Sense of control** **Critical awareness** **Participatory behaviours**
Organizational	Opportunities to participate in decision-making Shared responsibilities Shared leadership	Effectively compete for the resources Networking with other organizations Policy influence
Community	Access to resources Open government structure Tolerance for diversity	Organizational coalition Pluralistic leadership Residents' participatory skills

Source: (Zimmerman, 2000)

Few individuals have presented a theoretical framework of empowerment at the individual level of analysis that will provide a basis for developing outcome measures (Zimmerman & Warschausky, 1998). Empowerment at individual level of analysis may be referred as psychological empowerment (PE). Two studies suggest that PE is a combination of personal beliefs of control, involvement in activities to exert control, and a critical awareness of one's environment (Zimmerman, 2000). The first study, done by Kieffer (1984), uses qualitative approach to describe the development of PE among community leader. The other study, conducted by Zimmerman and Rappaport (1988), uses qualitative approach to examine the common variance among several measures of perceived control in student and community samples.

In another study by Masi et al. (2003), PE is referred as an individual's ability to make decisions and have control over his or her personal life and characterized by a sense of perceived control, competence and goal internalization. It combines personal efficacy and competence, a sense of mastery and control, and a process of participation to influence decisions and institutions.

For this study, specifically, the psychological empowerment theory is applied since it is focusing on the individual level of analysis in examining the empowerment outcome of PID implementation. Since individuals would be the level of analysis, the outcomes might include situation-specific perceived control, skills and proactive behaviours (Table 2.2). This theory is chosen based on Zimmerman and Warchausky (1998) suggestion that empowerment theory can be a useful framework for attaching rehabilitation research that focuses on control and involvement. In this case, PID can be regarded as having similar function to a rehabilitation centre that is to improve the well-being or the quality of life of individuals. Furthermore, Zimmerman (2000) recommended that research on PE requires attention to the development of a theoretical framework particularly to the constructs. In addition, he also suggested conducting research to examine the relationship among the intrapersonal, interactional, and behavioural components of PE for different populations and settings.

The PE theory is based on the Zimmerman constructs: intrapersonal, interactional and behavioural. Intrapersonal refers to perceived control or beliefs about competence to influence decisions that affect one's life. Zimmerman (1995, 2000)

describes intrapersonal empowerment as people's own beliefs about their ability to control their environment and achieve their goals. It is perceived as the emotional component of psychological empowerment, and focuses on a person's feelings about her inner world (Kasturirangan, 2008). The interactional construct of psychological empowerment describes how people analyze and understand their external conditions including social and political environment (Zimmerman, 2000). This includes an ability to understand causal agents (those with authoritative power), their connection to the issue of concern, and the factors that influence their decision-making. Behavioral empowerment reflects efforts made that promote an individual's strengths or competencies. Behavioural includes participation in collective action, involvement in voluntary or mutual help organizations, or solitary efforts to influence the sociopolitical environment (involvement in decision-making) (Zimmerman, 2000).

In this research, the variables that will be used from the intrapersonal constructs are perceived control, efficacy, competence, and motivation. For telecentre users in rural areas, perceived control concerns with their reactions towards improving their socio-economic well-being. Self-efficacy focuses on their performance after acquiring ICT skills and knowledge in achieving a desired goal. Competence relates to their understanding and capabilities on the technical aspects of ICT. Motivation concerns with the inner factors that drive them to use ICT in improving their socio-economic well-being.

For the interactional construct, the variables chosen are critical awareness, decision-making, problem-solving, and leadership skills. Critical awareness includes knowing

when to engage conflict and when to avoid it, and the ability to identify and cultivate resources needed to achieve desired goals. For telecentre users in rural areas, critical awareness refers their awareness level regarding the establishment of the telecentres in their neighbourhood. Zimmerman (1995) state that interactional empowerment could involve new insights, information, and knowledge, and could include being able to identify useful resources, knowing how to access these resources, and understanding barriers to resource access. With regard to telecentre users, these provide indications of their decision-making, problem-solving and leadership skills.

Finally, the behavioural construct, the variables chosen are participation and coping. Behavioral empowerment reflects efforts made that promote an individual's strengths or competencies. Zimmerman (1995) emphasizes that actions associated with behavioral empowerment would vary with the goals and opportunities available. For telecentre users, this includes their participation and coping efforts to engage themselves in ICT-related telecentre activities to improve their socio-economic well-being.

In order to fully capture PE, these three constructs; interpersonal, interactional and behavioral, will be measured. Those who score high on all three components are considered the most highly empowered. On the other hand, those who have high score in intrapersonal and low score in interactional and behavioral are considered less empowered or limited PE (Zimmerman, 2000). However, a significant barrier for studying PE is the development of appropriate measurement devices. Since empowerment differs according to context and population-specific, measure of PE

need to be developed for each specific population with which one is working (Zimmerman, 2000; Menon, 2001).

2.6 Conceptual Framework

The conceptual framework shown in Figure 2.1 provides the researcher with a theoretical guide to conduct the study. This framework has been developed based on the Zimmerman constructs of psychological empowerment (PE) theory in order to understand individual empowerment of the PID users. The empowerment constructs included in the framework are intrapersonal, interactional, and behavioural. Each of these constructs is then divided into its respective factors. The intrapersonal construct comprises of four factors; perceived control, efficacy, competence, and motivation. The interactional construct consists of critical awareness, decision-making, problem-solving and leadership skills. Finally, the behavioural constructs include participation and coping. The relationships of these constructs are illustrated in Figure 2.1. Data for these questions was obtained through questionnaire, interview, observation, and documentation review.

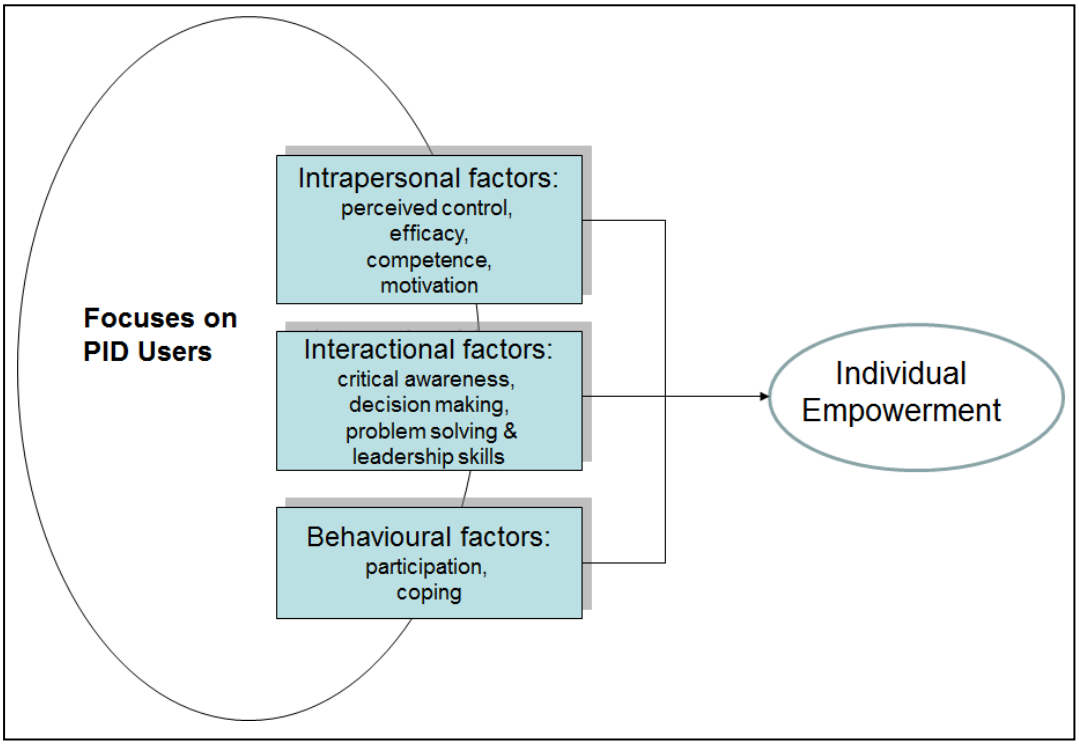

Figure 2.1: A Conceptual Framework of the Study

2.7 Summary of the Chapter

The purpose of this chapter is to present the literature reviews on the empowerment concept, the importance of telecentres, and the psychological empowerment theory that will be used as the guiding theoretical framework in this study. The major objective of these extensive reviews of studies and research is to guide the researcher to develop an appropriate conceptual framework that incorporates research and design issues encountered in the past. The conceptual framework and planned methodology for conducting this study is described in detail in the following chapter.

CHAPTER THREE
RESEARCH METHOD

3.1 Introduction to the Chapter

The primary objective of this research is to explore the individual's empowerment in the PID in Malaysia. The study was conducted by using the empowerment theory through examining the intrapersonal, interactional, and behavioural constructs of the empowerment.

Chapters 1 and 2 in this thesis have discussed how the contributing literatures and various theoretical and methodological perspectives inform the choice of my study's research strategy and design. To restate, the research questions of this study include:

- How do intrapersonal factors reflect the empowerment of PID users?
- How do interactional factors reflect the empowerment of PID users?
- How do behavioural factors reflect the empowerment of PID users?

This chapter first explains briefly the conceptual framework that emerges from the literature review and forms the scaffolding for the research design. Following this will be a description of the research design and methods used to address the research problem as outlined in chapter one. This study sought to analyze and explain the purpose of the research through qualitative approach using a multiple case study of PID. In addition, this section will also incorporate the rationale for choosing multiple case study sites. The remainder of this section will discuss the data collection

procedures that include the details on the techniques to be used, which include questionnaire, interview, observation, and documentation review. The subsequent section is concerned with interpretive analysis that was used to analyze the multiple source of data collection.

3.2 Overview of the Study

Figure 3.1 illustrates the overview of this study which involves research process activities. Research process is a flow of activities in a linear direction that a researcher follows before the research questions of the study are answered. This research process flow chart is used as a guideline for the researcher to check whether these research activities had been undertaken by researcher during the course of the research. The activities conducted in this study can be categorized into three phases which include problem identification, data collection, and data analysis.

The initial phase of the research process involves the problem identification part. During this stage, an extensive literature survey conducted to understand the problem. Although this phase only involved preliminary and basic work, the foundation of the study is very essential in order to ensure that the researcher has defined the problem to be studied correctly and to make sure the researcher is heading in the right direction. In this study, the empowerment theory was used to describe the phenomenon.

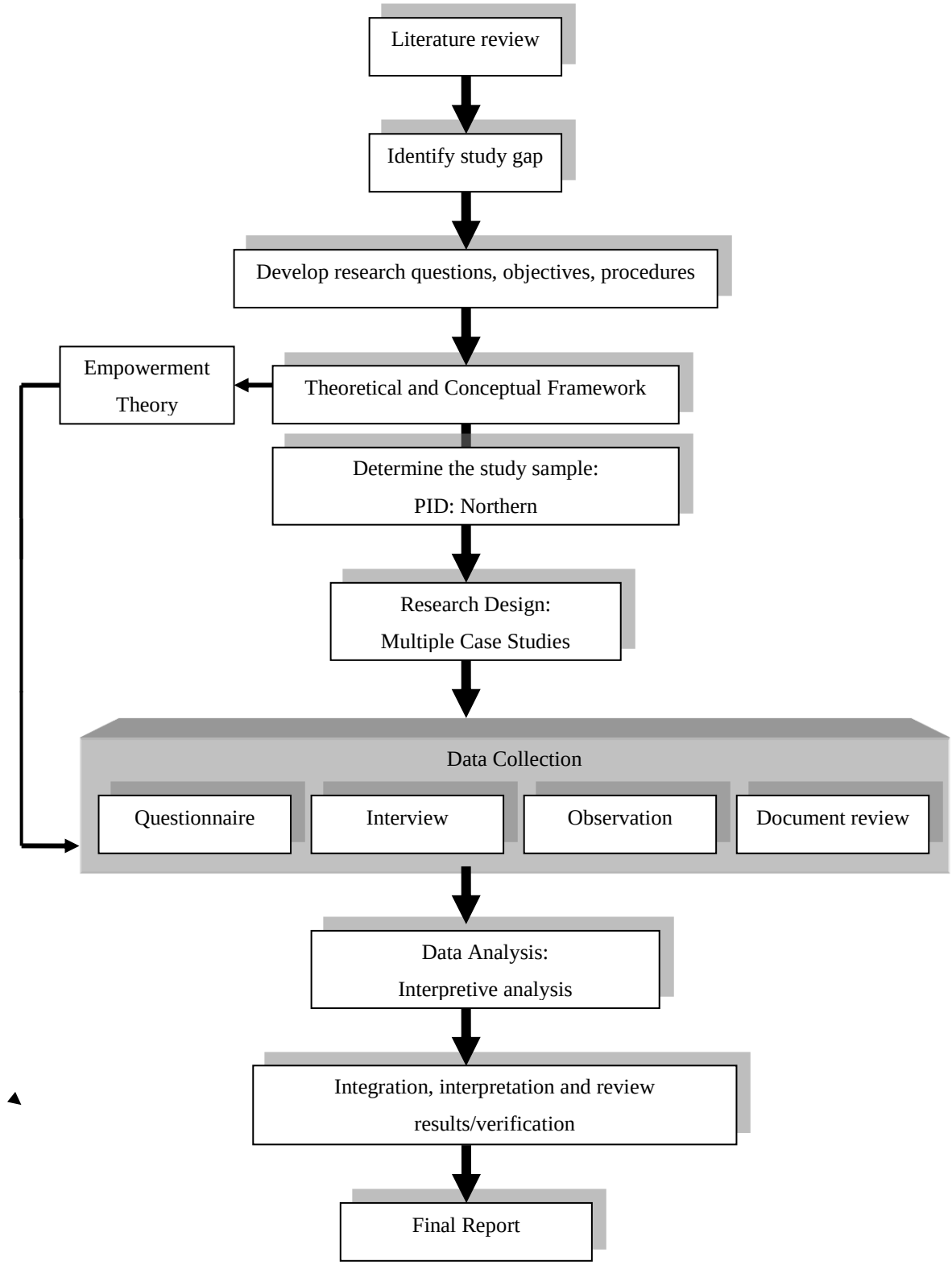

Figure 3.1: Research Process of the Study

The second phase of the research process involves gathering data from the respondents once the instrument has been developed, identification of sample and its sampling size have been done. The data was collected primarily through multiple sources of information such as questionnaire, interviews, and observations with the PID users. In addition, review of documents was also used as another data collection technique.

After the required data were collected, the data analysis procedures were then performed. The data was analyzed on a continuous basis, meaning that data collection and analysis is conducted simultaneously until the categories of information become saturated. The interpretive analysis was applied as the data analysis technique in this study.

3.3 Research Design

Yin (1994) and Creswell (1994) suggest that the case study would be the preferred research strategy when in-depth research is required and little is known about a research topic. In addition, the case study approach fulfills the following requirement (Yin, 1994):

1. when “how” or “why” questions are being posed,
2. when the researcher has little control over events, and
3. when the focus is on contemporary phenomenon within some real-life context.

Given the nature of the research problem as outlined in chapter 1, the case study approach is chosen as being the most appropriate for this research since case study is particularly useful in understanding some particular problem or situation in great depth (Patton, 2002; Stake, 1995). In fact, O'Neil (2002) recommends that case study is one of the research approaches that are suitable in conducting research related to community informatics, since it can capture the richness of the specific projects. In addition, a case study approach is an appropriate way to explore areas where research studies are scarce (Benbasat et al., 1987; Cepeda & Martin, 2005).

Case study is one of the methods used in a qualitative research and program evaluation This method is an appropriate view to study complex human behaviour and social phenomena (De Villiers, 2005; Patton, 2002; Strauss & Corbin, 1998). Qualitative research is becoming well-accepted among the information systems researchers. For instance, Orlikowski and Baroudi (1990) stated that case study research has been the most common qualitative method used in information systems. The trend is due to the fact that the focus of information systems research has shifted from technological to managerial and organizational issues (Myers, 1997; Smith, 1999; Trauth, 2001; Walsham, 1995). After all, qualitative approach becomes relevant in information systems for the purpose of understanding users (Trauth, 2001). This is supported by De Villiers (2005) who stated that qualitative approach has been applied in doing research related towards the user-centric systems, usability support for personal computing, and the empowerment of domains beyond business and management information systems. Nevertheless, the qualitative approach, particularly case studies, have also been helpful in identifying the causal chain that

led to the success or failure of an information system by revealing in chronological fashion the various actors and events that influenced the final outcome (Benbasat et al., 1987). For example, this approach is appropriate in evaluating the performance of information system applications and in understanding the actual practice of software development (Anda & Hansen, 2006; Leclercq, 2007; Masemola & De Villiers, 2006).

3.3.1 Overview of the Case Study Approach

A case study, which emphasizes qualitative analysis, is a research strategy that is used in many situations to contribute to one knowledge of individual, group, organizational, social, political, and related phenomena (Yin, 1994). This method allows investigators, who are seeking to understand the problem being investigated, to retain the holistic and meaningful characteristics of real-life events.

There is no standard definition of a case study. Generally, a case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities such as people, groups or organizations (Benbasat et al., 1987). Yin (2003) defined a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context especially when the boundaries between phenomenon and context are not clearly evident."

There are several examples of using the case methodology in the literature. Among them are exploratory, explanatory, and descriptive case studies (Yin, 2003). Exploratory case studies can be used before conducting a large-scale investigation

whereby fieldwork and data collection may be undertaken prior to definition of the research questions and hypotheses. Using this approach, the framework of the study must be created ahead of time. Exploratory case study is appropriate for those who wanted to find out the reason of a certain project success or failure. Using exploratory case methods, one may ask a research question about what types of outcomes are associated with project developments.

Explanatory cases are suitable for doing causal studies. In very complex and multivariate cases, the analysis can make use of pattern-matching techniques. Finally, descriptive cases require that the investigator begin with a descriptive theory, or face the possibility that problems will occur during the project. The descriptive theory must cover the depth and scope of the case under study. The selection of cases and the unit of analysis are developed in the same manner as the other types of case studies.

Case study is also known as a triangulated research strategy. Triangulation is used to ensure accuracy and alternative explanations are called. The need for triangulation arises from the ethical need to confirm the validity of the processes. Triangulation strengthens a study by combining methods, data, or theories. Studies that depend on only one method are more vulnerable to errors linked to that particular approach. In case studies, this could be done by using multiple sources of data, provide a rich description of the context or case, and have a guiding framework of theory development. The use of multiple sources and techniques in data gathering process is

the key strength of the case study method. The multiple-source of evidence is an important principle because different sources of evidence can present different aspects of the study, all of which will add to the understanding of the case (Yin, 1994). Triangulation approach also helps to avoid potential sources of bias. Tools to collect data can include surveys, interview, documentation review, observation, and even the collection of physical artifacts.

Case studies can be either single or multiple case designs. Both types of case designs are used to generalize the results to confirm or challenge a theory (Yin, 1994). A multiple design must follow a replication since it strengthens the results through pattern-matching, thus increasing confidence in the robustness of the theory. On the other hand, when no other cases are available for replication, the researchers are limited single case designs.

The descriptive approach of a multiple case was used in this study since the purpose of the study is to describe phenomena, develop, and test theory. Multiple cases are preferable since the purpose of this study is to describe the individual empowerment phenomenon, and to use empowerment theory as theoretical lens. Multiple cases also permit cross-case analysis, a necessary feature for widespread generalization of theories. Furthermore, the use of empowerment theory for the PID evaluation made a qualitative approach to data an essential element of the research design.

3.3.1.1 Procedures for Conducting Multiple Case Studies

The following steps of conducting a multiple case study research are based on the techniques suggested by Stake (1995) and Yin (1994):

- **Determine and define the research question**

  First of all, before conducting the case study, a researcher needs to determine and define research questions. Research questions help to establish a firm research focus that refers to the overall study of a phenomenon. The object or the entity of the case shall be investigated thoroughly using a variety data gathering methods to produce evidence that leads to understanding of the case and answers the research questions.

- **Select the cases and determine data gathering and analysis techniques**

  The choice of using a single or multiple case study need to be made in order to determine instruments and data gathering approaches to be used. Data gathering and analysis need to be determined in advance to help answering the research questions. Tools to collect data can include surveys, interview, documentation review, observation, and even the collection of physical artifacts.

- **Data collection preparation**

  A well planned data collection methods need to be laid out clearly since a case study research generates a large amount of data from multiple sources. Most importantly is the design of questionnaire that will be used as an instrument for interviewing purposes. In addition, a guideline for conducting observation at the site will also need to be constructed.

- **Data analysis**

  Data analysis involves developing a detailed description of the case. This might be a detail interpretation of information about people, places, and activities involved in the case. Further data analysis usually includes developing issues or themes that develop when the researcher studies the case. The interpretive analysis is the data analysis technique used in this study.

- **Report preparation**

  A report needs to be prepared as a way to transform a complex issue into an understandable story or case. A well written report will allow readers to question and examine a study and reach an understanding independent of the researcher. In this study, the report will be based on the interpretation of the related issue that has been studied.

3.3.1.2 Strength and Weaknesses of Case Study Research

Case research has commanded respect in the information systems discipline for at least a decade (Dube & Pare, 2003). In fact, case study research has been accepted as a valid research strategy within the IS research community (Klien & Myers, 1999). The case study approach refers to a group of methods, which emphasize qualitative analysis (Yin, 1994). Data are collected from a small number of organizations through methods such as participant-observation, in-depth interview, and longitudinal studies. The case study approach seeks to understand the problem being investigated. It provides the opportunity to ask penetrating questions and to capture the richness of organizational behaviour, but the conclusions drawn may be specific

to the particular organizations studied and may not be generalizable (Gable, 1994). This approach increases the depth of understanding of the cases and situation (Patton, 2002). Hence, the case study approach is advantageous when there is a need to focus on contemporary events or phenomena in a natural setting.

There are three strengths of a case study research in information systems as identified by (Benbasat et al., 1987). Firstly the case study research enables a researcher to study information systems in a natural setting, learn about the state of the art, and generate theories from practice. Secondly, the method allows the researcher to understand the nature and complexity of the processes taking place. Finally, the method provides appropriate way to research an area in which few previous studies have been carried out.

Another two strengths identified by Yin (1994) are flexibility and emphasis on context. A case study approach is comparatively a flexible method of scientific research because it is exploratory, rather than predictive, in its aims. Researchers can start with broad questions and narrow them down as the questions develop. Case study researchers are open-minded and flexible enough to explore unexpected findings (Yin, 1994). The other strength of case studies lies in the emphasis on the natural context within which the phenomenon of interest occurs. Case studies enable researchers to understand the people, the social and the cultural contexts within which they live. Case studies also capture the dynamics of the social process of technology development and change, in the event of complex phenomena. The focus

on particular contexts enables case study researchers to produce much more detailed information compared to what is available through statistical analysis (Yin, 1994).

Besides the above strengths, the case study method has several weaknesses. The most apparent weakness is the lack of generalizability due to issues of inherent subjectivity, subjective qualitative data, and a small number of cases. A case study that depends on a single or a few cases is unable to provide a generalizing conclusion (Gable, 1994; Patton, 2002; Yin, 1994). The results of case studies are heavily dependent on the knowledge and experience of researchers. Yin thus considers case study methods to be "microscopic" when they lack the support of a sufficient number of cases. The results of case studies are generalizable only to a particular context and may not draw causal inferences.

3.3.2 Unit of Analysis

The unit of analysis is a critical factor in a case study design. It refers to the main entity to be studied. The unit of analysis in qualitative research is experience, not individuals or groups. Qualitative studies vary in the kinds of experience they investigate; yet, their interest is about the experience itself not about its distribution in a population (Polkinghorne, 2005). Based on the main objective of this study, the telecentre user is the unit analysis used in this study.

3.4 Data Collection Procedure

A wide variety of possible data collection methods is available under the case study approach. These include the use of questionnaire, interview (unstructured, structured,

or semi-structured format), observation, and gathering of documentation and artifacts. The details of each method are further discussed in proceeding subsections (pages 69-83). As mentioned earlier, the use of multiple source of data collection helps to provide a rich description of the context or case. Furthermore, it helps to establish the construct validity and reliability of the study.

For this study, data is collected by means of distributing questionnaire to and conducting interview with PID users, and observing the activities in each of the PID. Questionnaire that was constructed which made up as a survey instrument was given to the PID users. Interview includes open-ended questions that induced in-depth responses about people's experiences, perceptions, opinions, and knowledge. Observations include fieldwork descriptions of project sites, project activities, participants' behaviors, actions, conversations, and attitudes, or any other aspect of observable human experience.

Another additional method that was used is documentation review. The specific document chosen is helpful in making inferences about certain procedures. Most importantly, the documents serve to support the evidence from other sources. Each of the data collection methods used in this study can be considered as part of an overall approach of improving the quality and validity of the data. This is known as the triangulation approach. Triangulation approach in qualitative study refers to the process of verification that improves data validity by incorporating multiple data collection methods.

The data collection procedure applied in this study follows the three principles proposed by Yin (2003); 1) use multiple of sources of evidence; 2) create a case study database; and 3) maintain a chain of evidence. By conducting the triangulation process, the study will fulfill the first and second principles. These principles are essential in producing a more convincing and accurate finding or conclusion since it based on several different sources of information or data. As for this study, data was triangulated across from questionnaire, interview with the PID users, observation at the PID, and the annual PID reports. The main reason for using triangulation was to gain more information from the respondents to answer the research question in a satisfactory manner and also to increase the reliability of the research results.

The use of multiple case studies approach in this study is relevant to Yin's second principle, creating a case study database. The principle is related to the way of organizing and documenting the data collected for case studies. By developing a formal, presentable database, other researchers are able to review the evidence directly and not be limited to the written reports. A case study database will obviously increases the reliability of the entire case study. The last principle stresses the importance of maintaining a chain of evidence. This principle is to allow the reader of a case study to follow the root of any evidence from initial research questions to ultimately case study conclusions or vice versa.

3.4.1 Questionnaire

Questionnaires are an inexpensive way to gather data from a potentially large number of respondents. As emphasized by Myers (1997), the use of questionnaire is

part of the qualitative data sources besides observation and participant observation (fieldwork), interviews, documents and texts, and the researcher's impressions and reactions. For this study, questionnaire consists of open-ended questions developed based on the three constructs of psychological empowerment: interpersonal, interactional, and behavioral. The open-ended questions allowed the respondents freedom in answering questions and an opportunity to provide in-depth answers. This helps in seeking in-depth responses about people's experiences, perceptions, opinions, feeling and knowledge (Patton, 2002). The questionnaire facilitates data collection in terms of verbatim quotations that would make it easier to interpret. A cover letter was used to inform the respondents about the purpose of the study and to request them to participate. The letter also identified the researcher, affiliation and assured the respondents that anonymity was guaranteed.

The constructs as well as the factors in the survey were based upon Zimmerman's construct of empowerment theory and upon previous studies mentioned in the literature review chapter. Intrapersonal construct was measured by the four factors, which are perceived control (Zimmerman. & Zahniser, 1991), self-efficacy (Compeau & Higgins, 1995), competence (Compeau & Higgins, 1995), and motivation (Thomas & Velthouse, 1990). For the interpersonal construct, the factors measured were critical awareness, decision-making, problem-solving, and leadership (Zimmerman. & Zahniser, 1991) skills, while the behavioural construct were coping and participation.

The survey questionnaire, which was prepared in dual languages (English and Bahasa Malaysia) was divided into four sections not including the Informed Consent.

Section A was concerned with the background information of the respondents. The purpose of this section was to build the respondent's profile. The second section (Section B) was to enquire about the respondents participation in the PID. The objective of this part was to assess the coping and participation factors of the behavioural construct of empowement. Section C was to determine the kinds of trainings/programmes and services offered at the PID and also those that are regularly used by the respondents. In section D, questions were asked to determine the characteristics of the PID users in order to capture the interpersonal and intrapersonal constructs of psychological empowerment. The sample of survey questions can be referred to in Appendix A, while the mapping of the questionnaire to the constructs and factors of the psychological empowerment theory is shown in Table 3.1. The protocols for the questionnaire and semi-structured interviews were similar.

Table 3.1: Mapping of the Questionnaire to the Psychological Empowerment Theory

Construct	Factor	Questions
INTRAPERSONAL	Perceived control (6Qs)	D2. How does ICT help in improving your life?
		D3. How can ICT change your standard of living?
		D4. How can you use ICT to achieve your ambition?
		D10. Are you always ready/willing to learn any new computer software or application? Why?
		D17. Do you need to have ICT knowledge in this globalization era? Why?
		D18. Are you ready/willing to spend more time to improve your ICT knowledge? Why?
	Self-efficacy (4Qs)	D5. How can ICT help you to solve problems?
		D6. Do you feel comfortable using the computer/Internet in the PID on your own? Why?
		D8. Have you ever use the electronic services/application through the Internet?

		Why?
		D12. If you were to develop your own website/blog, what would the content be?
	Competence (4Qs)	D9. Have you ever download any application/software from the Internet? Why?
		D14. List all the types of computer maintenance that you have successfully done.
		D15. Do you understand most of the terms/words related to computer hardware/software? Why?
		D16. After participating in the training programs offered by the PID, can you consider yourself as ICT literate? Why?
	Motivation (4Qs)	B6. What makes you attracted to come and participate in the PID?
		C2. Why are you interested in using the PID?
		C5. What make you decide to use the services and participated in the training offered by the PID?
		D1. What makes you decide to use the information and communication technology (ICT) in your daily life?
INTERACTIONAL	Critical Awareness (4Qs)	C1. How did you know about the PID in your area? C3. What are some of the services offered at your PID? C4. What are some of the trainings that you able to get from the PID? C5. What make you decide to use the services and participated in the training offered by the PID?
	Decision-making skill (4Qs)	D1. What makes you decide to use the information and communication technology (ICT) in your daily life? Is this your own decision? D7. What is the most computer applications used while you are at the PID? Why? D11. Have you ever developed your own website? Why? D20. Do you agree that having ICT knowledge helps you to become a wiser decision-maker and problem solver? How?
	Problem solving skill (3Qs)	B4. What are the barriers/obstacles that you experienced while using the PID? B5. How did you cope with the barriers that you face? D13. What would you do if you encounter problems while using the computer?

	Leadership skill (3Qs)	B7. What can you do to encourage more people to use the PID? Please give some of your ideas. D19. With the experience and knowledge that you have, are you ready to become an ICT instructor at the PID? Why? D21. As a PID user, have you been offered as a member of any committee in your community/village? Why?
BEHAVIOURAL	Coping & Participation (3Qs)	B1. How long have you been using the PID? B2. How often do you use the facilities in the PID (in a week)? B3. State your purpose of using the PID.

Basically, in this study, the questionnaire was given to the PID users who had been selected beforehand by the PID supervisor based on the stated selection criteria and convenience. In addition, self-instructed/instructions regarding answering the questionnaire were also given. The data gathering will focus on information about the impacts and associations that will contribute to summative evaluation with focus on empowerment. The questioning was open-ended to enable unexpected capabilities in any dimensions to emerge. The questionnaires were given to the respondents before the scheduled face-to-face interview, and they were instructed to complete the questionnaires before the interview.

The total number of questionnaires distributed to the three PID is 130. Out of that number, only 80 responses were returned. However, 10 of the returned questionnaires were not usable because the respondents failed to complete all of the questions asked. According to research scholars (Polkinghorne, 2005; Patton, 2002; Marshall, 1996; Miles & Huberman, 1994), the number of respondents in a qualitative study is not the major concern as that to a quantitative since the main focus of qualitative inquiries is on describing, understanding, and clarifying a human

experience. Participants for a qualitative study are not selected because they fulfill the representative requirements of statistical inference but because they can provide substantial contributions to filling out the structure and character of the experience under investigation (Polkinghorne, 2005). The details related to the findings on the questionnaire method are further discussed in chapter four.

3.4.2 Face to Face Interview

Interviewing is one of the most efficient methods for qualitative study and important sources of case study information. Through interviews, reliable first-hand information can be obtained from views or perceptions of the respondents to strengthen any study. The interview method enables the interviewer to "*enter into the other person's perspective"* (Patton, 2002).

In this study, the semi-structured interview is employed to generate rich descriptive data from the PID users. Furthermore, the semi-structured interview offers a desirable combination of objectivity and depth, and often permits gathering valuable data that could not be successfully obtained by any other approach. By having the semi-structured interview, the researcher is able to probe further without being constrained by a set of standardized questions. Semi-structured interviews are conducted as guided conversations, with broad questions being asked that do not constrain the conversation, and as a result of the discussion new questions are allowed to be inserted. This technique allows the interviewee to express their opinions, concerns and feelings, and might be used to obtain feedback and offers the interviewer the opportunity to explore any issues that arise. The interpersonal contact

between interviewee and interviewer opens opportunity to follow-up with comments when desired. Often the informative data obtained from semi-structured interviews not only provides answers, but also the basic reasons for the answers. Most importantly, the semi-structured nature of this study draws from unstructured interviewing using open-ended questions add depth, detail, and meaning at a very personal level of experience (Patton, 2002). The open-ended nature of the question defines the topic under investigation but provides opportunities for both interviewer and interviewee to discuss some topics in more detail.

An interview technique was selected because it not only elicits a richness of data that can be used in the analysis but also enable the understanding of the individual empowerment of the PID users. This technique is conducted to verify and validate answers from the questionnaire delivered beforehand. By conducting the interviews, further in-depth questions can be asked to clarify or justify unclear answers from the questionnaire. For example, when this question was asked; "Why are you interested in using the PID?", some of them just gave a brief and common answer such as to learn about computer and internet. To get more information, additional questions were probed. The participants were then requested to tell more on why they wanted to learn about computer and internet. This gave the opportunity for the participants to include more important details compared to their first answers. Another example is; "How does ICT help in improving your life?". Similarly in seeking more details, further queries is made such as by asking them to relate to the benefit gain after using and gaining ICT skills and knowledge. In addition, cues or prompts can be

used to encourage the interviewee to consider the question further if he or she has difficulty in answering a question or provides only a brief response.

As for this study, the interview was done face-to-face at the specific PID location, PID Kuala Nerang, PID Simpang Empat, and PID Balik Pulau. Initially, before the setting up of the interview session, the PID users were briefed on the purpose of the study; that researcher wanted to interview them regarding their usage and activities in PID. This was done during the enumerator first visit when distributing the written interview questionnaires. Those who agreed to be interviewed were asked to come back at the suitable arranged date and time. The reason for conducting the interviews was to get firm answers from the respondents. This was required to capture any missing information gather after analyzing the returned questionnaires. The interviews were carried out using the appropriate protocol as mentioned in the Section 3.4.1. In this study, besides the general topic, the PID users were also enquired on follow-up of the in-depth questions which were not clearly answered or when a point required further clarification or justification. The evidence given by all the users are then analyzed in order to come up with the findings. The answers from the users were then paraphrased correctly.

The total number of the PID users that turned up for the interview session is 16. Similar protocol as that of the questionnaire was used to probe further and to confirm data collected from the survey. The session was conducted in a round table manner by using a narrative approach through individual in-depth, open-ended interviews. The goal in using in-depth interview was to draw out the users' experiences and perceptions. The purpose of interviewing is to allow the interviewer to "enter into the

other person's perspective" (Patton, 2002, p. 341). Before the interview started, the respondents were asked to sign their names on the consent form to show that they agreed to participate in the study (see Appendix A). These forms covered issues such as confidentiality, anonymity, tape-recorded conversations, voluntary participation, and the right of respondents to withdraw without penalty from the study at any time they wanted. The respondents accepted and understood the conditions under which it took place. All the conversations between the researcher and the respondents were recorded with permission from the respondents. Each time a question was posted, the respondent gave his/her response one by one. Apart from recording using the MP3 player, the responses were written down by the researcher.

During the interview, respondents are able to clarify on various matters related to the questions. Similarly, the researcher would have the opportunity to solicit additional information that cannot be derived from the survey. The interviewing process ended after reaching the point of information redundancy from the respondents (the sampling scheme is fully described in section 3.5.1). The next step was to transcribe the answers given by the respondents. In order to test the validity of the data, the other related data was collected from additional sources, such as questionnaire, observation, and related documents (such as annual report, PID bulletin, and websites). This is known as the triangulation of multiple sources. The researcher followed the step-by-step procedures for conducting a multiple case study as described in Section 3.3.1.1 to ensure the data was reliable for this study.

3.4.3 Observation

Observation has been recognized as a valuable data collection method in a case study setting by Yin (2003) and complements interview as a valuable source of additional data. This method allows researchers to gather firsthand data on programs, processes, or behaviours being studied. The data from observation consist of detailed descriptions of program activities, participants' behaviours, staff actions, and the full range of human interactions that can be part of program experiences (Patton, 2002).

Observations are also used to supplement and clarify data derived from respondents interview (Polkinghorne, 2005). Through observation, researchers are able to discover other important information that the respondents are not aware of or unwilling to discuss during the interview session. Furthermore, respondents' behaviours, facial expressions, gesture, and other nonverbal indications can be source of data during the observation. This will surely help in understanding better the context within which the project operates. Observation can be done both informally and formally. Informal observation usually carried without acknowledging in advance the respondents of the specific sites. On the contrary, formal observation is done with the knowledge of the respondents.

As for this study, an informal observation of the PID was carried out to supplement data collected from questionnaire and interview. This can add depth and variety to the data collected by observing the users' behaviours and the activities in the PID. Being able to observe them in those real situations is more reliable because it is possible to watch their actual behavior. Notes related to the behaviours and activities

observed were made. The observation also includes the nonverbal indications, as mentioned earlier, of the respodents during the interview sessions. Besides observing the users behaviours and their related activities, photographs were also taken such as the PID buildings, the on-session classes as well as the newspaper cutting, notes, and memos displayed on the noticeboard. Photographs are another good alternative in collecting observable data of the studied phenomena. In addition, observation around the centres was also conducted. Details on the observation are discussed in chapter four.

3.4.4 Documentation review

By including the document analysis method, additional background information can be determined. There are various forms of document that can be reviewed such as letters, memoranda, agendas, administrative documents, newspaper articles, or any document that is relevant to the study. The documents can also include archival documents such as service records, organizational records, list of names, survey data, and other such records. Document analysis yields excerpt, quotations, or entire passages from records, correspondence, official reports, and open-ended surveys (Patton, 2002). Data from previous research were also referred.

In this study, the main document used at the source of reference was the PID annual report, which is required to be submitted to the Ministry. In addition to the annual report, other related and relevant documents (i.e. bulletin, manual on how to use computers) were also scrutinized. The documents were examined in order to gather information regarding the operation and the usage of the PID. This is important as it

may also include some historical data that could not be obtained through the other methods.

3.5 Sampling

Sampling is the process of selecting a sufficient number of elements from the population, so that a study of the sample and an understanding of its properties or characteristics would make it possible for making generalization towards such properties or characteristics of the population elements (Henry, 1990; Sekaran, 2003). Unlike quantitative approach, qualitative sampling usually works with small samples of people (Marshall, 1996; Miles & Huberman, 1994), nested in their context and studied in-depth. The most appropriate sample size for a qualitative study is that which adequately answers the research question(s) (Marshal, 1996).In fact, Patton (2002) emphasized that in a qualitative inquiry, there is no rule of sample size, "*the size depends on what you want to know; the purpose of the inquiry; what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources"*. An appropriate sample size for a qualitative study is a sample size that adequately answers the research questions since the focus of qualitative inquiries are to describe, understand, and clarify human experiences. Qualitative study also requires collecting a series of intense, full, and saturated descriptions of the experiences under investigation (Polkinghorne 2005).

This study used purposive sampling of telecentre users from the Kuala Nerang, Simpang Empat, and Balik Pulau PID. These three telecentres in Northern region of Malaysia were purposely selected as the case studies because it can help the

researcher to understand the problem and research questions (Creswell, 1994). This will then ease the explanation of the phenomenon to be studied (Patton, 2002). These sampling represent the homogeneity of the population as the physical characteristics of the PID are similar in terms of goals (to provide ICT access), management structure (led by manager/coordinator), locality (situated at the annex building of selected post offices in rural area), and users (undeserved group) (UNESCAP, 2006). Besides representing Northern telecentres, the selection was due to the following:

c. The PID had been honoured with various achievements in local and national levels such as The Best Pusat Internet Desa Competition award and ICT Excellence Awards 2005. As for Kuala Nerang, the KUS is led by a successful local business person.
d. Situated in the Northern Region of Peninsular Malaysia, UUM through its ITU-UUM Centre of Excellence (CoE) in Rural ICT Development wanted to become the hub for the rural ICT development programmes and activities. This ITU-UUM CoE has collaborated with these PID to be part of their research and development.

Conveniently selecting participants offers the researcher the opportunity to obtain relevant information that is only available with certain groups (Sekaran, 2003; Patton, 2002). A strategy for conveniently selecting information-rich cases is selecting cases which meet a predetermined criterion of importance. For this study, 130 telecentre users were given the questionnaires, while 16 were interviewed face-to-face who met the following criteria:

a. registered telecentre users,
b. they agreed to respond to the questionnaire and participate in the interview,
c. certain age group,
d. level of education, and
e. gender.

The participants were conveniently selected based on those who come to use the telecentres' facilities and services. Before giving out the questionnaires, the participants were asked whether she/he met the criteria and willing to participate in the study. The questionnaires were only distributed to those qualified. Meanwhile, an appointment was made with those who agreed to be interviewed. During the distribution of the questionnaire and the interview session, the candidates were given a consent letter (see Appendix A) explaining about the study and the selection criteria for participation.

3.5.1 Saturation

The data collection in a qualitative approach ends as soon as there is little or no additional learning could be extracted from any additional data. A researcher will stop collecting data when he/she began hearing a replay of the same information from the interviewees or respondents (Polkinghorne, 2005). The iteration of data collection would continue until the descriptions of the respondent's experiences become saturated, that is, the new sources repeat what has been previously extracted and become superficial (Glaser and Straus, 1967, as cited in Polkinghorne, 2005).

The primary source of data for this study is the data gathered through questionnaire and interview. In terms of the sample size in a qualitative study, (Patton, 2002) says that there is no rule for it. However, some says that usually the sample size involve a small number of respondents (Marshall, 1996; Miles & Huberman, 1994). The appropriate sample size depends on whether it could adequately answer the research question (Marshall, 1996). Data collection would be sufficient when there is evidence of coherent patterns and norms that indicate individual empowerment among the telecentre users. Besides the questionnaire and interview, consistent themes were obtained from observation and document review as well as from other related studies conducted previously (Nor Iadah et al., 2008; Zulkhairi et al., 2008; Zahurin et al., 2007). For example, before pursuing this study, several studies related to the impact of telecentre had been undertaken, whereby the results pointed out some similarities relating to the users conduct. A rich description of the study was facilitated through these multiple sources of data. The most important factor to consider is when the required data or information becoming obvious. This means that there is no more new category, theme or explanation emerges. Thus, this means that the information obtained have reached a saturation point. In addition, due to the sample homogeneity, the possibility of reaching saturation is higher since the participants are chosen according to some common criteria. These similarities appear to have been enough to render a fairly exhaustive data set within twelve interviews.

3.6 Data Analysis Procedure

According to Miles and Huberman (1994), qualitative data analysis consists of three concurrent flows of activity (Figure 3.3): data reduction, data display, and conclusion

drawing or verification. The first activity, data reduction, refers to the process of selecting, focusing, simplifying, abstracting and transforming the data that appear in written-up field notes or transcriptions. The second activity, data display, refers to an organized, compressed assembly of information that permits conclusion drawing and action. Finally, the third activity, conclusion drawing or verification involves the identification of regularities, patterns, explanations, possible configurations, causal flows, and propositions. Qualitative analysis requires examining massive amounts of data, transforming data into findings, and communicating the essence of what the data reveal (Patton, 2002). The responses are read and reread to have deep reflection in allowing understanding to emerge (Stake, 1995).

Based on the above activities, the main procedure that was applied in analyzing the data is the interpretive technique. This technique is chosen since it generally attempt to understand phenomena through the meanings that people assign to them (Walsham, 1995). The interpretive research usually attends to three types of data: language (interview); acts and interactions (observation); and physical objects used in these acts or in written language (questionnaires and documentation review). This is applicable for all the four sources of the collected data: questionnaire, interview, observation, and documentation review.

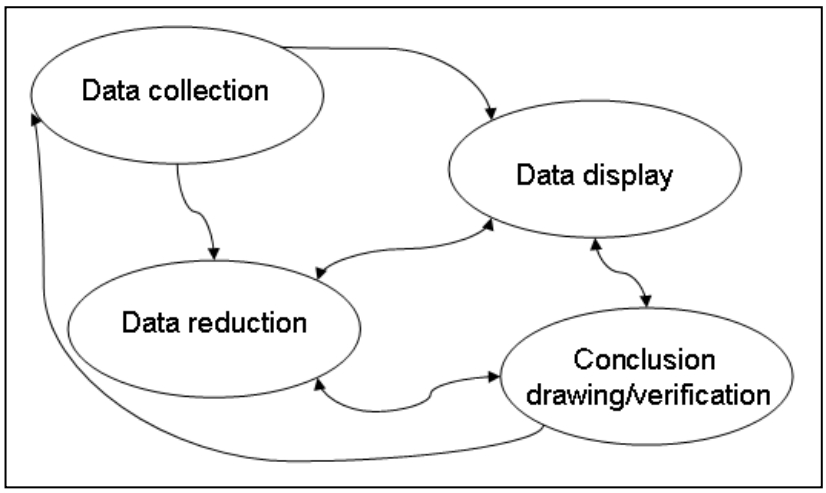

Figure 3.3: Components of Data Analysis: The Interactive Model

Source: Miles & Huberman, 1994

3.6.1 Data Analysis of this Study

The research data for this study consisted of the information from the questionnaires, interviews, and observation notes. By applying the techniques discussed above, the collected data from the questionnaires, interviews, and observation notes were transcribed manually.

In this study, as soon as the questionnaires were returned and the interview sessions were completed, each response was assigned a unique identification (ID) number. For example, the questionnaires were coded as KNGRX, SPFRX, and BPURX, whereby the KNGR, SPFR, and BPUR represent respondents from the Kuala Nerang, Simpang Empat, Balik Pulau PID respectively. The X refers to the number of respondents. As for the interviewee responses, they were coded as KNGWX, SPFWX, and BPUWX. Data from the interviews were transcribed into a text document. All the responses were then reviewed repeatedly to identify the pattern of

responses. Next was the categorization of the transcribed statements based on the pattern that was identified before to verify, as well as to elaborate on the data.

The data were then organized and structured through an inductive process using thematic analysis by highlighting noteworthy phrases, sentences, or core meanings of the content. The inductive process means that the categories, themes, and patterns emerge from the data and are not imposed before data collection (Patton, 2002). The thematic analysis involves identifying emerging themes recurring themes (Miles & Huberman, 1994; Patton, 2002). The themes identification is done through categorizing and direct interpretation (Stake, 1995). Data are examined and compared for similarities or differences using coding technique to highlight themes in the data and assign categories to these themes. The thematic analysis is done iteratively to i) identify further evidences that support or challenge the themes and ii) identify new and reclassify existing themes. The iterative process is to ensure that the data are sharpened, sorted, focused, discarded, and organized in such a way that conclusions can be drawn (Miles & Huberman, 1994). These themes, patterns, understandings, and insights are the "fruit" of qualitative inquiry (Patton, 2002). Once there is no more new category, theme, or explanation emerges, the process is stopped. This indicates that a saturation point has been achieved.

The interpretive technique was applied to analyze the data. The interpretive studies in this regard refer to the assumption that people create and associate their own subjective and inter-subjective meanings based on their interaction with the world around them (Orlikowski and Baroudi, 1991). Interpretive researchers are able to

understand the phenomenon according to meanings obtained from the respondents. In Information System (IS), interpretive research is "*aimed at producing an understanding of the context of the IS and the process whereby the IS influences and is influenced by its context"*(Walsham, 1993). According to Klein and Myers (1999), interpretive research "*can help IS researchers to understand human thought and action in social and organizational contexts; it has the potential to produce deep insights into information systems phenomena, including the management of information systems and information systems development".*

In writing up a case study, Creswell (1994) suggested to begin with a detailed description of the case and its setting, which presents the facts about the case. This enables reader to appreciate the condition of the participant (Patton, 2002). In this study, this is done by summarizing the data collected from the documentation review and questionnaires to provide a descriptive background of the PID and the participants.

3.6.2 Interpretive Research in Information Systems

Qualitative approach is a better choice of research design in information systems, especially when dealing with human and sociological aspect of computing (De Villiers, 2005; Trauth, 2001). Even Walsham (1995) and Myers (1997) have pointed out that there have been rising appreciation of the essentially social nature of information systems in practice that has led some researchers to adopt research approaches which focus primarily on human interpretations and meaning. Thus,

interpretive approaches are being employed to an increasing extent (Klien & Myers, 1999).

Even though, interpretive research originated from the social sciences discipline, it is now becoming accepted in information system. In recent years, interpretive research has emerged as an important strand in information systems research (De Villiers, 2005; Klien & Myers, 1999; Trauth, 2001; Walsham, 1995). Interpretive research does not only help in understanding human thought and action but also to produce deep insights into information systems phenomena including the management of information systems and information systems development (De Villiers, 2005; Klien & Myers, 1999; Walsham, 1995).

Qualitative strategies emphasize interpretive approach that uses verbal data to both pose and resolve research questions by focusing on understanding phenomena that occur in natural settings (De Villiers, 2005). Researchers develop categories and meaning from the data through an iterative process that starts by developing an initial understanding of the perspectives of those being studied (Kaplan & Duchon, 1988).

Interpretive methods of research in IS are aimed at producing an understanding of the context of the information systems, and the process whereby the information systems influences and is influenced by the context (Walsham, 1995). Myers (1997) stated that interpretive approach can be applied to IS implementation research, the

advantage being that it is able to deal with the social and political nature of information systems implementation.

3.6.3 Overview of Interpretive Technique

In order to analyze the data, the interpretive-hermeneutics technique was used based on the set of principles outlined by Klein and Myers (1999). The principles help to summarize important insights gathered from the data collection. The first and most fundamental principle of hermeneutics is that of the hermeneutic circle. Hermeneutics provides a theoretical framework for interpretive understanding or meaning with special attention to context and original purpose (Patton, 2002). The principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. For example, in order to understand the whole of any text, one must have an understanding from preconception about the meaning of its parts and their interrelationships.

The second is the principle of contextualization. This principle requires that the subject matter be set in its social and historical context so that the intended audience can see how the current situation under investigation emerged (Klien & Myers, 1999).

The third is the principle of interaction between the researcher(s) and the subjects. This requires critical reflection on “how the “data” were socially constructed through the interaction between the researchers and respondents. This principle differs to the

conceptualization whereby instead of placing the object of study in context, the researcher needs to place his or her own self and the subjects into a historical perspective. This is due to the fact that interpretivism suggests that information is produced as part and parcel of the social interaction of the researchers with the respondents (Klien & Myers, 1999).

The fourth principle, abstraction and generalization, requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action. Walsham (1995) argues that there are four types of generalizations from interpretive case studies: the development of concepts, the generation of theory, the drawing of specific implications, and the contribution of rich insight. The key point here is that theory plays a crucial role in interpretive research, and clearly distinguishes it from just anecdotes. However, theory is used in a different way than is common in positivist research; interpretive researchers are not so interested in "falsifying" theories as in using theory more as a "sensitizing device" to view the world in a certain way. Interpretive researchers in information systems tend not to generalize to philosophically abstract categories but to social theories such as structuration theory or actor network theory (Klien & Myers, 1999).

The fifth principle, dialogical reasoning requires the researcher to confront his or her prejudices that guided the original research design (i.e., the original lenses) with the data that emerge through the research process. The most fundamental point is that the researcher should make the historical intellectual basis of the research (i.e., its

fundamental philosophical assumptions) as transparent as possible to the reader and himself or herself. As a minimum, the researcher should identify what type of interpretivism s/he prefers, identify its philosophical roots, and relate the particular strengths and weaknesses of the preferred philosophical direction to the purpose of the work (Klien & Myers, 1999).

The sixth is the principle of multiple interpretations**.** The principle requires the researcher to examine the influences that the social context has upon the actions under study by seeking out and documenting multiple viewpoints along with the reasons for them. The analysis of reasons may include seeking to understand conflicts related to power, economics, or values. Moreover the researcher should confront the contradictions potentially inherent in the multiple viewpoints with each other, and revise his or her understanding accordingly. Finally, the last principle, suspicion requires sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the respondents" (Klien & Myers, 1999).

3.7 Summary of the Chapter

This chapter presented an overview of the methodology that was utilized to answer the research questions in this study. The proposed research design uses a multiple-case study approach to examine individual empowerment of PID users. The study applied four modes of data collection that include the use of questionnaire, interview, observation, and analysis of documentations specifically on the PID annual report. Data analysis will use a qualitative technique which is concerned with interpretive analysis.

CHAPTER FOUR
ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the findings of the questionnaire, interview, observation, and documentation review conducted in the study. The findings are presented in the form of three case studies for the following PID; i) Kuala Nerang, Kedah; ii) Simpang Empat, Perlis; and iii) Balik Pulau, Pulau Pinang. The discussions of each case are based on the three research questions stated in the first chapter.

4.2 Questionnaire and Face-to-Face Semi-structured Interview

The interview protocols for both the questionnaire and face-to-face interview, which were divided into four parts, were all the same. The first part comprises of demographic and general questions. The second part is about users' participation in the PID. The third is regarding the training and services offered in the PID and the last part contains the characteristics of the PID users.

The research questions to elicit answers are as follows:

a. How do intrapersonal factors reflect the empowerment of PID users?
b. How do interactional factors reflect the empowerment of PID users?
c. How do behavioural factors reflect the empowerment of PID users?

4.3 Case Study 1: PID in Kuala Nerang, Kedah

The Kuala Nerang PID, which is situated in the state of Kedah, started its operation on 3rd November 2003 and opened to the public on 23rd November 2003. However, the Internet access service was only available 30 May 2004. The 20 x 30 feet sized PID is strategically located at the centre of the Kuala Nerang town (Figure 4.1). Not only it is attached to the post office, but also it is nearby the local government administration departments such as the Padang Terap District Office, Padang Terap District Council, and Information Office.

Figure 4.1: The Building of Kuala Nerang PID

In its first operation, starting 2003, the PID was under the supervision of a supervisor, Cik Norafizah Mohd Azizan and her assistant, Cik Anis Sobirin Ibrahim. In 2005, the supervisor was replaced by Encik Mohd. Alwi Mahmud, and in early 2009, there was another replacement with Puan Siti Fatimah Ayob. However, the assistant supervisor was only taken over by Encik Muhammad Noorizan Ramli in 2008 (Figure 4.2). The PID management team is also supported by a Coordination Committee represented by 15 members from the local communities. Among the committee members are Head of the Kuala Nerang Post Office, instructor from the

Kuala Nerang Giat Mara College, local entrepreneur, school teacher, and higher institution and school students.

Figure 4.2: The PID Supervisor and Assistant Supervisor

The PID operation hours are between 8:30 a.m. and 5:00 p.m. only on weekdays (Sunday till Thursday). However, the centre is open on Saturdays, except on the first week of each month since the post office is closed, to handle a weekend computer class. The centre is divided into two sections, the administrative and classroom areas (Figure 4.3). The facilities in the PID comprise of computers (8 units), printers (3 units), laptop (2 units), and one unit each of scanner, camera digital, fax machine, LCD projector, and laminator machine. The PID is also equipped with wired and wireless Internet access. The laptops and built-in wireless Internet access (streamyx technology) were provided in 2008.

Figure 4.3: The Classroom and the Administrative Area

Computer trainings or classes are conducted by the supervisor and the assistant every Monday till Thursday (Figure 4.4). Since there is no class on Sundays, users can freely use the computer to fulfill their various purposes. The classes are divided into four sessions on each day where students are allocated two hours per week. The students are free to choose the session based on the available schedule either on Monday and Wednesday, or Tuesday and Thursday. Modules, diskettes, and students' cards are given to them. Eventually, they will receive their certificates once they have successfully completed their programs or trainings. The weekend computer class is intentionally held for those who cannot attend the weekdays' classes, for instance school teachers, entrepreneurs, and private and public officers. The computer trainings consist of Microsoft Word, Excel, Power Point, and Internet.

Figure 4.4: Computer Training Session

Besides the computer trainings, other services or programs offered by the PID are e-mail, information searching, online application, facebook, flickr, digital story-telling, blog, websites workshops, and consultation sessions. In order to attract participation from the local community, the PID administrator will regularly post advertisement at the PID and the surrounding areas (Figure 4.5). Figure 4.6 lists the charges for printing and Internet usage. PID members can use the Internet for free for the first hour but will only be charged one ringgit if they wish to you use for the next one hour. However, for non-members, they need to pay two ringgit an hour. The charge is still considered low by the users compared to the nearby cyber cafes.

Figure 4.5: PID Streamers

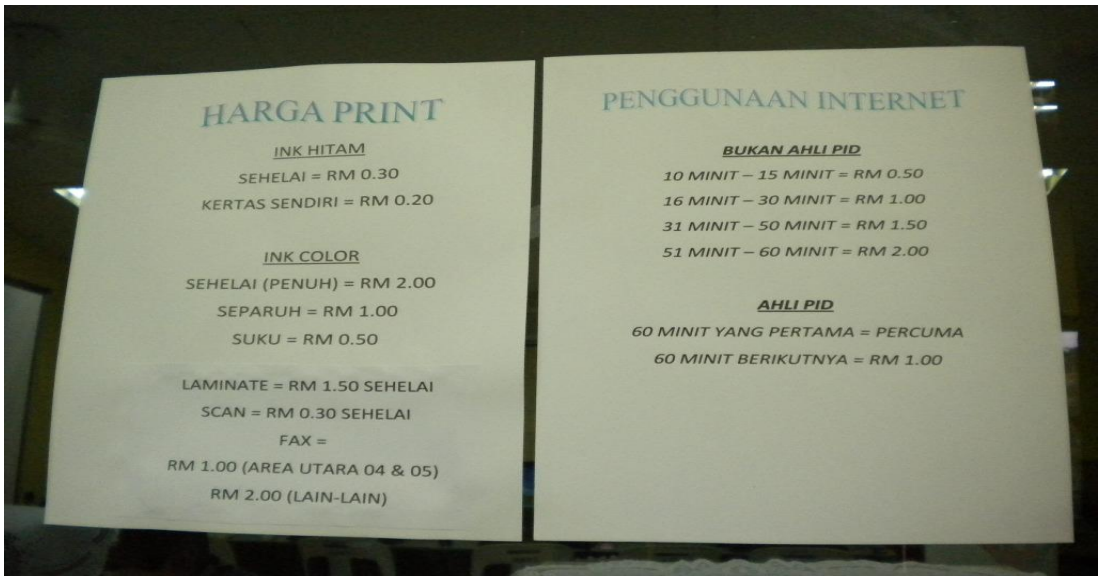

Figure 4.6: Services Charges

The Kuala Nerang PID vision is to develop the centre as a reference centre for the local communities. Its missions are to i) develop IT literate human resource, ii)

cultivate the IT culture in the local community, and iii) provide the opportunity for the community to be more aware of the latest development. To achieve the above vision and missions, the PID management has laid out the following objectives:

- to balance the development between the urban and rural communities,
- to reduce the digital gap among the urban and rural communities,
- to cultivate the ICT culture in the rural communities daily lives, and
- to provide new opportunities based on the ICT to the rural and less-fortunate communities

4.3.1 The Profile of Kuala Nerang PID Users

Thirty questionnaires were distributed to the Kuala Nerang PID users. Unfortunately, only 13 responses were returned, in which one is not usable since the respondents did not answer most of the questions asked. For the face-to-face interview, the PID supervisor and assistant supervisor have arranged with 10 users to be interviewed, but only five turned up. Out of these five interviewees, four of them had participated in the survey done earlier. The details are depicted in Table 4.1.

Table 4.1: Data Collection Technique and the Total Number of Kuala Nerang Respondents

Technique	Number of Respondents	Total
Survey	13 (1 unusable)	12
Face-to-face interview	5 (4 restatement)	1
Total Respondents	18	13

Table 4.2 portrays the demographic profile of the Kuala Nerang PID respondents. These 13 respondents were considered as the valid number that represents the Kuala

Nerang PID users since one survey was unusable, and the four interviewees were just restating or clarifying their answers in the survey. All respondents were fairly distributed between male (6) and female (7) youth aged between 18 to 29 years old. The users were mostly unemployed (61.5 %) who had just finished their secondary schools (SPM qualification), while the rests were teachers (15.4%), and self-employed (23.1%) with degree and diploma qualification.

Table 4.2: The Profile of the Kuala Nerang PID Users

		Frequency	Total Respondents
Sex	Male	6	13
	Female	7	
Age	15-19	7	13
	20-24	4	
	25-29	2	
Academic Qualification	SPM	8	13
	Diploma/STPM/Matriculation	3	
	Degree	2	
Employment	Unemployed	8	13
	Government/Private Sector	2	
	Self-employed	3	

4.3.2 Research Question 1: How Do Intrapersonal Factors Reflect the Empowerment of PID Users?

This section describes the responses given by the Kuala Nerang PID users in order to answer the first research question of this study. The intrapersonal empowerment factors for the PID users include perceived-control, self-efficacy, competence, and motivation. These four factors of intrapersonal constructs are described based on the working definition of empowerment of this study. The working definition of

empowerment in this study refers to the ability of a person in acquiring technological/ICT skills and competency to be able to control oneself and the environment in making positive change in one's life. Therefore, for telecentre users in rural areas, perceived control concerns with their reactions towards improving their socio-economic well-being. Self-efficacy focuses on their performance after acquiring ICT skills and knowledge in achieving a desired goal. Competence relates to their understanding and capabilities on the technical aspects of ICT. Motivation concerns with the inner factors that drive them to use ICT in improving their socio-economic well-being.

4.3.2.1 Perceived-control

This section provides the explanations on the indicators of the first factor of the intrapersonal construct of empowerment, perceived control. The indicators are determined based on the responses presented by the PID users regarding their reactions towards the use of ICT in improving their socio-economic well-being. The responses were established by presenting six questions to the respondents. The questions were separated into two parts. Each part consisted of three questions, where the first part was to discover the effect of the use of ICT in improving one's lives, changing one's standard of livings, and achieving one's ambitions. The second part was to find out one's view on the importance and one's readiness in acquiring ICT skills and knowledge.

The comments specified by the respondents revealed that all of them (13 out of 13) acknowledged the benefits of using ICT in their lives particularly in improving their

standards of living, and accomplishing their ambitions. Specifically, majority of them (12 out of 13) indicated that Internet offered them with various opportunities in business, and career. Nine respondents talked about the ability of achieving efficiency in carrying out their daily activities, while three of them shared the fact that they could improve their ICT skills and knowledge.

In terms of opportunities, only one respondent specified on the career opportunity, while most of them touched on business. The sole respondent who pointed up about the career opportunity was an unemployed teenager. The rest shared their constructive achievements in their business undertakings. Some respondents were mentioning that despite getting more potential customers and business networking, the development of business websites helped them to improve their business locally and internationally. For example, one of them pointed out the opportunity of getting more potential customers and business networking by applying the global marketing strategy in his business:

> *"Internet membolehkan pasaran produk saya dibuat ke seluruh dunia yang dikenali sebagai pasaran secara global. Dengan cara ini saya berupaya mendapat lebih ramai pelanggan dan kenalan perniagaan"*
> *(My product can be marketed throughout the world using the Internet. This global marketing method, enable me to get more customers and business contacts)*

Similarly, another businessperson shared his experience of being able to get more business counterparts by promoting his business through his website:

> *"Saya berupaya menambah pendapatan perniagaan saya melalui promosi di laman web, mendapat ramai kenalan dan rakan perniagaan dari seluruh Malaysia"*
> *(I am able to increase my business income through promotion in the website, getting more friends and business counterparts throughout Malaysia)*

Another respondent shared his experience of becoming successful in his business by promoting and selling his products through the Internet:

> *"Saya berjaya menjadi ahli perniagaan yang berjaya dengan mendapat jualan besar melalui Internet"*
> *(I am able to become a successful businessman, where I get more sales through Internet)*

Other than promoting and selling their products, three respondents mentioned that using their websites, they could now disseminate and share more information and knowledge pertaining to their businesses. The following is one of the related quotes:

"Menyediakan peluang yang luas serta menjadikan dunia tanpa sempadan di mana dapat berkongsi pengetahuan dan pengalaman melalui laman web"

(provides greater opportunities and made the world borderless where one can share knowledge and experience through web sites)

The other businessperson proudly declared that his ambition of becoming successful catfish entrepreneur had become a reality:

"Tercapai matlamat menjadi usahawan ikan keli yang berjaya dengan menggunakan kaedah pemasaran Internet"

(Achieve the target of becoming a successful catfish entrepreneur by using Internet-marketing approach)

The other businessperson talked in terms of opportunity of generating more income by utilizing the benefit of electronic commerce:

"Menambah & menjana pendapatan kerana mendapat ramai pelanggan, kenalan dan ejen jualan melalui Internet, dapat memperluaskan perniagaan, mudah berkomunikasi dengan pelanggan melalui Yahoo Messenger (YM), kehidupan dimudahkan dengan adanya Internet di mana tidak perlu beratur dan tunggu untuk pembayaran bil dan lain-lain"

(Easy to promote business, more kenalan from all parts of the world, communication with customers (YM), easy & fast access to information, Save time from queuing & waiting; can search archive information)

Efficiency is determined based on the responses by most respondents who mentioned that the use of ICT facilitates them in performing their daily tasks especially in saving their time while handling those routines. One respondent was being specific by clarifying that the use of electronic mail helped him to save time in getting his work completed quicker.

"Penggunaan ICT seperti penggunaan e-mel membantu menjimatkan masa dan memudahkan kerja saya di mana kerja dapat disiapkan dengan lebih cepat"

Another young teacher, aged 26 six years old, who currently attached to a school in a remote area in Sarawak, described in detail the reason why he chose efficiency as the impact of using ICT in improving his life:

"Bagi saya, hidup pada masa kini tidak boleh terlepas/ketinggalan dari segi penggunaan teknologi kerana ia banyak memberi kemudahan kepada saya terutamanya penggunaan (online transaction) di mana saya selalu menempah tiket secara online

(pergi/balik Sarawak/Kedah) kerana ianya lebih mudah dan cepat. Begitu juga untuk saya mengetahui tentang isu-isu semasa"

(As for me, living in today's world, one cannot get away from using technology because it gives a lot of advantages to me especially in terms of the online transaction whereby I have always booked my flight ticket online because it is easier and faster. The same applies in terms of looking for current issues)

Another two respondents (both were 23 years old male) admitted that ICT managed to change their standard of living through communication facilitation. They enjoyed the fact of being able to get in touch with other people at any time, and anywhere. In fact, one of them mentioned the cliché of living in the borderless world:

"Dunia tanpa sempadan, kita dapat berkomunikasi seluruh dunia dengan mudah tanpa mengira masa dan tempat"

(Borderless world, we can communicate worldwide easily at anytime, anywhere)

Three of them also denoted their realization of the inevitability of using ICT in handling most of their daily activities. The following are their remarks:

"Kebanyakan urusan masa kini melibatkan penggunaan ICT"

(Most of today's matters involved the use of ICT)

"Dunia sentiasa melonjak ke hadapan dan ICT menjadikan kehidupan lebih mudah"

(The world always move forward and ICT makes lives easier)

"Kepentingan, ikut peredaran masa, tak mahu ketinggalan zaman"

(Its importance, to be up-to-date, does not want to be left behind)

The last reaction regarding the use of ICT in improving one's life, changing one's standard of living and achieving one's ambition was related to acquiring ICT skills and knowledge. The respondents realized that they need to improve their skills and knowledge in ICT in order to keep pace with the dynamic nature of such technology. Moreover, they need the skills to excel in their various undertakings. Here are examples quoted from two respondents:

"Tidak mahu ketinggalan kerana besar kemungkinan pada masa hadapan ianya dapat membantu lebih lagi dalam urusan perniagaan saya"

(Do not want to be left behind because in the future ICT can help me more in my business)

"Untuk menjamin masa depan dengan mencerahkan peluang melanjutkan pelajaran/persaingan pekerjaan/meneroka bidang baru"

(To have a better future with greater chance to further education or to compete in new field)

Three additional questions related to the second part of perceived control factor were to find out one's view on the importance and one's readiness in acquiring ICT skills and knowledge. Regarding their willingness to learn any new computer software or application, all respondents mentioned "YES" for one obvious reason: to keep up-to-date with the technology advancement. The respondents realized that the need to improve their skills and knowledge in ICT in order to keep pace with the technology that change rapidly and also to have a better chance in competing for job hunts. Here are some examples quoted from the respondents:

"Tidak mahu ketinggalan kerana besar kemungkinan pada masa hadapan ianya dapat membantu lebih lagi dalam urusan perniagaan saya"
(Do not want to be left behind because in the future ICT can help me more in my business)

"Untuk menjamin masa depan dengan mencerahkan peluang melanjutkan pelajaran/persaingan pekerjaan/meneroka bidang baru"
(To have a better future with greater chance to further education or to compete in new field)

Similar reaction was received relating to their willingness in spending more time to improve their ICT knowledge. All respondents stated that they were always willing to spend more time to improve their ICT knowledge because they were aware of the importance of ICT in their lives (38.5%: 5 out of 13) and they were ICT fanatics (15.4%: 2 out of 13). Regrettably, the other six respondents did not give their explanations. Examples of the quotes for each category include:

The importance of ICT in daily lives:

"Dengan adanya pengetahuan dan kemahiran ICT, ianya dapat memudahkan urusan seharian (ICT knowledge and skills facilitate daily routines)"

"Penting untuk meningkat kemajuan diri dan kerjaya terutamanya dalam arus globalisasi (it is important to develop oneself and one's career especially in this globalization era)"

ICT fanatic:

"Minat yang mendalam"
(deep interest)

"Saya benar-benar ingin memahami sesuatu yang baru, terutama untuk meningkatkan pengetahuan dan kemahiran ICT agar dapat meningkatkan kemajuan diri"

(I really want to improve my ICT knowledge and skill so that I can improve myself)

Finally, thirteen respondents agreed to the fact that they need to have ICT knowledge in this globalization era. However, only six of them shared their justifications. One respondent emphasized on the importance to be in line with the current technology development:

"Tidak mahu ketinggalan dengan arus kemajuan"

Two of them stressed on the importance of ICT usage in carrying out their daily activities. This is an example of their remarks:

"Kebanyakan urusan masa kini melibatkan penggunaan ICT"

(Most of today's matters involved the use of ICT)

These are examples quoted from the other two respondents:

"Dunia sentiasa melonjak ke hadapan dan ICT menjadikan kehidupan lebih mudah"

(The world always move forward and ICT makes lives easier)

"Kepentingan, ikut peredaran masa, tak mahu ketinggalan zaman"

(Its importance, to be up-to-date, does not want to be left behind)

4.3.2.2 Self-efficacy

The second factor of the intrapersonal construct of empowerment is self-efficacy. In this study, self-efficacy focuses on the performance of PID users after acquiring ICT skills and knowledge in achieving a desired goal. Four questions were asked in order to find out the level of self-efficacy of the PID users. The purpose of posting these questions was to obtain the respondents' capability of using ICT and their understanding of the benefits of using ICT.

Even though majority of the respondents (92.3%: 12 out of 13) stated that the use of ICT could assist them in solving certain problems, one did not give his answer. For those who answered, they presented that ICT supported in terms of the ability of getting immediate access to information through the Internet. Four of the respondents, through the interview session, also added that having access to information enable them to make evaluation before deciding on particular issues. This was clarified through the following statement:

"*pencapaian maklumt yang mudah dapat membantu dalam membuat penilaian dan pilihan"*

(Easy access to information helps in making evaluation and choice)

One rather interesting reaction of using ICT in solving problem given by a businessperson was:

> "Saya boleh *mendapat maklumat terperinci dalam masalah yang saya hadapi dan apabila saya faham mengenai masalah itu, saya akan mencari jawapan bagi menjawab soalan itu pula, semuanya dapat dipermudahkan melalui penggunaan ICT"*
> *(I can get detailed information regarding the problems I faced and when I comprehend the situation, I will get my answers, all these are made easier using ICT)*

Out of these 12 respondents, one of them had included additional reason, which was:

> *"Menawarkan banyak peluang pekerjaan"*
> *(Offers a lot of job opportunities)*

For the second question, the respondents were asked whether they are comfortable using computer or Internet on their own. One respondent did not state his answer during the survey. The rests mentioned that they were able to use the computer or Internet with minimum supervision since they already possessed basic computer skills. From all the responses, those who aged between 18 and 20 simply said:

> "*Sudah ada kemahiran asas"*
> *(I already had the basic skills)*

Interestingly, the two teachers and the businesspersons conveyed their answers by relating them to their main responsibilities:

> *"Sebagai seorang guru, selalu menggunakan komputer dalam menyiapkan tugasan"*
> *(As a teacher, I always use computer in my works)*

> *"Sudah ada kemahiran asas, dan saya selalu menggunakan komputer untuk tujuan perniagaan"*
> *(Have the necessary skills and knowledge and I always use computer for my business purposes)*

For the next question regarding self-efficacy, which was related to the electronic services or applications usage, eight out of the 12 respondents stated "YES". Three of them did not state their reasons. The other four respondents bravely admitted that they have not used the services because they do not know how to use it. They also explained that they did not see the need of using such services or applications. This was the quote:

> "*Tiada keperluan dan tidak tahu menggunakannya"*

For those who had experience using such services, all of them claimed that electronic services were very convenience and effective in various ways. All of them said that

they could now avoid the hassle of queuing and waiting at any counters when using the electronic applications such as Internet banking and online ordering services:

> "*Internet banking, online ordering system adalah lebih mudah dan menjimatkan berbanding berurusan melalui kaunter"*

The other two businesspersons specifically named the applications that they were using for their personal and business matters. These were their responses:

> "*CIMB Click, mudah.com, ebay.com, lelong.com dan lain-lain memudahkan urusan perniagaan dan urusan peribadi saya"*
> *(CIMB Click, mudah.com, ebay.com, lelong.com etc., facilitate my personal and business matters)"*

> *"Saya biasa menggunakan mudah.com, e-bay untuk mengiklan dan membeli barangan"*
> *(I usually use the mudah.com, e-bay, for advertising and buying products)*

The other businessperson talked about the use of online meeting as part of conducting his business activities:

> "*Online meeting memudahkan pengurusan perniagaan saya"*

On the other hand, the teacher who was currently attached in Sarawak highlighted the convenience of using the online flight ticketing system:

> *"saya selalu menempah tiket secara online (pergi/balik Sarawak/Kedah) kerana ianya lebih mudah dan cepat"*

The fourth question, "*If you were to develop your own website/blog, what would the content be?"*, was only intended for those who had not developed website or blog. However, out of the eight respondents, only one was interested in creating a blog that would emphasize on the importance of green environment. The other three mentioned that they did not see the need of having website, while the rests did not give any thought.

4.3.2.3 Competence

In order to determine their ICT competency level, the PID users need to answer four questions related to their ICT skills and knowledge. The questions include the following:

- *Have you ever downloaded any application/software from the Internet? Why?*
- *List all the types of computer maintenance that you have successfully done.*
- *Do you understand most of the terms/words related to computer hardware/software? Why?*

- *After participating in the training programs offered by the PID, can you consider yourself as ICT literate? Why?*

For the first question related to competency, nine respondents (69.2%: 9 out of 13) had attempted to download various applications or software from the Internet for personal and business usage. They indicated that the downloading was a very convenience process, where they can do it at any time and at any place. They usually downloaded free types of application or software such as antivirus, printer drivers, and MP3. The other three respondents had never downloaded any application or software because they did not know how; did not have the courage to try, and did not see the need of such process.

In terms of computer maintenance, seven respondents (53.8%: 7 out of 13) had never done any, while the others (38.5%: 5 out of 13) had experienced in computer formatting, and software installation. Interestingly, one of them had the skill of repairing computers since he was very interested in the technical aspect of the computer system. He even constantly consulted the PID operator assistant who according to him was an expert in the area.

Nine of the respondents pointed out that they understand most of the terms or words related to computer hardware and software as they had been using computers for quite sometimes. These are two examples quoted from several them:

"Mempunyai pengalaman dalam penyenggaraan komputer"

“Telah lama menggunakan komputer, memiliki kemahiran yang diperlukan”

The best part was when one of them proudly said:

“Saya suka belajar”
(I like to learn)

Unexpectedly, there is a respondent assertively confessed that he did not understand most of the computer related terminologies. In addition, three others said that their understandings were limited since they were just been introduced to the computer training programs and have a lot more to discover.

When asked whether they can consider themselves as ICT literate, all respondents except one indicated various positive answers. This statement indicated the most obvious answer (5 out of 13):

“Saya telah menghadiri kelas komputer”
(I have attended computer class)

The second highest response (3 out of 13) was the following:

"Saya tahu menggunakan komputer dan Internet”

(I know how to use the computer and Internet)

Two responses were related to gaining ICT skills and new knowledge:

"Banyak kemahiran ICT yang telah diperolehi"

(I have gain a lot of ICT skills)

"Banyak ilmu baru telah dipelajari"

(I have gain a lot of new knowledge)

Only one person disclosed about his technical ability:

"Saya boleh menyenggara komputer sendiri"

(I can do my own computer maintenance)

4.3.2.4 Motivation

This section describes the motivational aspect of the Kuala Nerang PID users, which is the last factor of intrapersonal construct. Motivation refers to the internal processes that give behavior its energy and direction. In other words, in order to initiate action, an individual must be motivated to exercise control. For example, in the case of using ICT, individuals who wanted to improve themselves would willingly sacrifice their times in getting the related knowledge and skills. This is

important to ensure that they could always be abreast with the rapid technology development.

In order to determine the motivational characteristic of the PID users, four questions were posed. The answer to the first question, "*What makes you attracted to come and participate in the PID?",* can be classified into four categories: ICT facilities, PID supervisor and assistant supervisor, ICT knowledge and skill, and strategic location. Most respondents (38.5%: 5 out of 13) were attracted to visit and participate in the PID because they wanted to use the ICT facilities in the PID, such as computer, Internet access, printer, and scanner. Four respondents (30.8%) claimed that they came to the PID due to the good service rendered by both the supervisor and her assistant. Here was the comment given by the users:

"Pekerja yang ramah dan mesra, mudah meminta pertolongan"

Another four respondents noted that they wanted to learn and gain ICT skills and knowledge, while three others chose the strategic locality of the PID (near the Post Office). The rests of the responses include coziness of the place (2), free or minimum charge (1), and interest (1). Interestingly, the successful businessperson pointed out that the PID activities and facilities are beneficial to his work. This was his response:

"A*ktiviti yang dijalankan membawa kepentingan kepada kerja yang saya lakukan"*

When they were asked the second question, "*Why are you interested in using the PID?*", four respondents agreed that the low charge had made them choose to come and use the computer and Internet facilities in the PID. Three respondents specified that the PID was a cheerful and best place.

> *"PID menyeronokkan, dan layanan best (PID is a cheerful place and the service is the best)"*

Other reasons included no computer and Internet access at home, PID is situated nearby their homes or workplace, and to learn ICT.

For the third question, "*What make you decide to use the services and participated in the training offered by the PID?*", almost similar responses to the first question were given. The responses include these factors: supervisor and assistant supervisor (7), Internet facilities (4), PID computer certification program (3), ICT knowledge and skill (2), and no charge (1). Table 4.3 represents the remarks extracted from each category.

Table 4.3: Decision of Participating in the Kuala Nerang PID

Response Category	Remarks made by the respondents
Supervisor and assistant supervisor	*"Pengajaran secara profesional"* *(Professional teachers)* *"Layanan best"* *(Service is best)* *"Kemudahan mendapat maklumat"*

	(Easy to get information)
Internet facilities	*"Tidak ada kemudahan mengakses Internet di rumah"* *(No Internet access at home)*
PID computer certification program	*"Zaman sekarang memerlukan sijil komputer dan pengetahuan dalam bidang ICT"* *(Nowadays one need to have computer certificate and knowledge in ICT)*
ICT knowledge and skill	*"Untuk menambah kemahiran dan pengetahuan"* *(To improve skills and knowledge)* *"Tiada asas IT"* *(No basic knowledge in IT)*
No charge	*"Latihan adalah secara percuma"* *(Trainings are free)*

All respondents agreed that the use of ICT helps them to achieve efficiency and effectiveness in their daily routines. This reality is determined based on their answers for the question "*What makes you decide to use the ICT in your daily life?*" The efficiency and effectiveness were achieved using various electronic applications such as online payment; registration, booking, and job applications that facilitate numerous activities or transactions.

> *"ICT memudah serta menyegerakan urusan pembayaran bil ... tidak lagi perlu beratur di kaunter-kaunter bayaran"*
>
> *(ICT ease bills payment matters ... no more queuing at the counter)*

The two young businesspersons indicated their decision of using the ICT as the following:

> *"Untuk urusan perniagaan"*
> *(For business matters)*

> *"ICT menyediakan alat perhubungan pantas dengan pelanggan dalam urusan perniagaan"*
> *(ICT provides fast communication mechanism with customers in business matters)*

Lastly, one respondent mentioned the importance of ICT in both his life and business.

> *"Tidak mahu ketinggalan dari segi ilmu komputer dan perniagaan"*
> *(Do not want to be left behind in terms of computer and business knowledge)*

4.3.3 Research Question 2: How Do Interactional Factors Reflect the Empowerment of PID Users?

This section describes the responses given by the PID users in order to answer the second research question of this study. The description is based on the four factors of

interactional constructs of individual empowerment, which are critical awareness, decision-making skill, problem-solving skill, and leadership skill. The interactional construct of psychological empowerment describes how people analyze and understand their external conditions including social and political environment (Zimmerman, 2000). For telecentre users in rural areas, critical awareness refers to their awareness level regarding the establishment of the telecentres in their neighbourhood. Zimmerman (1995) state that interactional empowerment could involve new insights, information, and knowledge, and could include being able to identify useful resources, knowing how to access these resources, and understanding barriers to resource access. With regard to telecentre users, these provide indications of their decision-making, problem-solving and leadership skills.

4.3.3.1 Critical Awareness

Four questions were asked in order to identify the awareness level of the PID users regarding the establishment of the PID in their community. The questions were from Section C in the questionnaire (refer to Appendix A).

First, when the question was raised, *How did you know about the PID in your area?,* most respondents (76.9%: 10 out of 13) indicated that they knew about the existence of the PID from their friends. Seven found out through the banner posted on the centre while visiting the post office. Nonetheless, one of them admitted that he did not understand what the banner was all about until one of his friends explained it to him.

After answering the first question, they were then asked about the services that were offered at the PID. Table 4.4 lists down the services as indicated by the respondents.

Table 4.4: Services Offered in the Kuala Nerang PID

Services	Total Respondents
Computer classes	13
Internet	12
Consultation services	10
Printing	10
Computer maintenance	9
Fax	8
Lamination	5
Filling up online form	5
Wireless connection	5
Computer sales agent	3
Paying utilities bills	1

The next question was related to the trainings offered by the PID. The various training programs are depicted in Table 4.5. From the same question, the respondents also mentioned that the supervisor and assistant supervisor conducted all trainings. Apart from the internal trainings, there were a few selected users occasionally sent to other training programs organized by ministry or other stakeholders. For example, in this case, two respondents had been involved two times in the e-services training organized by KTAK which were conducted outside the PID.

Table 4.5: Training Programs in the Kuala Nerang PID

Trainings	Total Respondents
Computer classes	10
Internet	5

Website/blog	2
e-services	2
MS Publisher	2

For the last question regarding critical awareness, "*What make you decide to use the services and participated in the training offered by the PID?"*, three respondents stated the importance of having computer certificate. Another two were aware of the importance of having ICT skills and knowledge. However, for the rests, their reasoning inclined towards generic interests. For instance, seven respondents mentioned about the friendliness of the operators, four did not have Internet access at home, and one did not own computer at home. The following quotes represent examples of those answers.

a. Friendliness of the operators

"Pengajaran secara profesional"

"Layanan best"

"Perkhidmatan yang baik, operator yang peramah dan professional…mudah untuk mendapatkan maklumat"

b. No Internet access at home

"Tidak ada kemudahan mengakses Internet di rumah"

"Tiada kemudahan Internet di rumah"

c. No computer at home

"Tiada komputer di rumah"

On top of that, one respondent talked about the low fee charged by the PID:

"Lebih murah berbanding tempat lain..... caj minima untuk belajar MSOffice hanya RM25"

4.3.3.2 Decision-making Skill

The second factor of interactional construct of empowerment is about decision-making skill. This section describes the decision-making skills of the participating PID users.

The first question, *"Do you decide on your own to use the information and communication technology (ICT) in your daily life?"* was purposely queried in order to determine the significant standpoint of each PID user regarding the decision of ICT usage. As expected, all respondents, except one, gave "YES" as their answers.

The second question was about the most used computer application at the PID. Most of the respondents (76.9%: 10 out of 13) stated the Internet, followed by Microsoft Office package (69.2%: 9 out of 13). Only one person used the Adobe Photoshop application for preparing brochures regarding his business. Table 4.6 lists the use of Internet and Microsoft Office package as stated by the respondents.

Table 4.6: The Use of Computer Application at the Kuala Nerang PID

Applications	**Usage**
Internet	Utilities online payment
	Information searching
	Communication
	Internet marketing
	Website/Blog updating
	Online meeting/teleconferencing
MS Office	Computer trainings
	School/office assignment completion
	Typing purposes (i.e. resume, formal letters)

When asked whether, they have developed their website or blog, majority of the Kuala Nerang PID users (61.5%: 8 out of 13) had never tried to create one because they did not have the skills to do so. This was based on the following responses:

"tidak tahu caranya"

(Do not know how)

"tiada ilmu dan kemahiran"

(Do not have the knowledge and skill)

Nevertheless, three respondents had business websites and one had a personal blog. The three businesspersons, in fact, linked their websites to the Kuala Nerang PID website under the Kelab Usahawan (Entrepreneur Club) category for purpose of promoting their business activities. One of the websites is as follows:

> *"to promote products (MLM Gano Excel) and & activities, refer to the website under the PID Kuala Nerang Kelab Usahawan or www.iget.blogdrive.com and www.buyuse.blogspot.com"*

The teacher who developed his personal blog intended to share information and knowledge with other bloggers. For those who have not developed their website or blog, only one was interested in creating a blog that would emphasize on the importance of green environment. The other three mentioned that they did not have it in mind and the rest did not give their reasons.

For the last question, all respondents agreed that ICT knowledge helped them became a wiser decision-maker and problem solver, except one. However, this particular respondent did not state his reason of disagreement. The five respondents mentioned that having the ICT skills and knowledge was an advantage to them since they can have access to lot of information on various issues which will then give more opportunity for them to make a choice or decision:

"Pelbagai maklumat dari pelbagai pihak dapat diperolehi seterusnya dinilai untuk mendapatkan keputusan"

They also added that they had become wiser decision-makers and problem solvers whereby they did not simply accept what others said, instead they would first do some research before making decision:

"Menyediakan maklumat yang lebih tepat tak .... terima bulat-bulat apa orang cakap"

Unluckily, the other seven respondents did not mention their reasons of saying that ICT knowledge helped them became a wiser decision-maker and problem solver.

4.3.3.3 Problem-solving Skill

Under this section, three questions, two from section B and one from section C of the questionnaire, were posed to explore the respondents' problem solving skills. Both questions, B4, "*What are the barriers/obstacles that you experienced while using the PID?"* and B5, "*How did you cope with the barriers that you face?"* were examined together in order to match the barriers faced with the coping strategies. The most significant barrier listed by the respondents (9) was the problem of having to queue before they can use the computers in the PID since there was a limited number of PCs (state the numbers). These were examples of their comments:

"*PID sentiasa dipenuhi pelajar dan pengguna"*

(PID is always full with students and users)

"*Tak cukup PC"*

(Insufficient number of PCs)

Two respondents gave their views in terms of the technical aspects:

"Low computer specification"

"No webcam"

While two respondents said that they did not experience any barriers while using the PID.

In order to cope with the first barrier, the problem of queuing, one respondent is fortunate because he could bring his own laptop to have Internet access via the PID wireless network connection. Another respondent said that he would choose the time that not many users were in the PID.

"Datang PID pada masa yang sesuai seperti masa penggunaan yang kurang"

The other seven users (53.8%: 7 out of 13) stated that the administrator should add the number of PCs in the PID. This answer does not represent their coping strategies.

Instead of trying to cope with their problems themselves, they were pointing to others to overcome the problem.

> *"Kerajaan harus memberi peruntukan kepada PID supaya dapat menyediakan lebih banyak bilangan computer"*
> *(The government should give allocation so that the PID can provide more computers)*

Unfortunately, there were no strategies being stated in handling the other two barriers.

In answering the last question on problem-solving skill, only three respondents indicated that they would try to find solution by themselves if they were to encounter problems while using computer. Most of the others (9) would refer to someone else who are more technically expert such as the PID supervisor and the assistant or other users. Interestingly, two respondents took action in their own manner where they said that they would straight away switch off or reset the computer if it went bizarre.

4.3.3.4 Leadership Skill

The last factor of interactional construct of empowerment is pertaining to leadership skill. In order to determine whether the PID users possess the leadership capabilities, three questions were laid out so that they can explain on their various strategies of related requirements.

The first question is about the ways of encouraging more people from the local community to come to the PID. The respondents suggested a few strategies such as aggressive promotions by the PID (9), spread of words on the importance of ICT to the community (2), add more computers (1), provide bigger space (1), provide more sophisticated devices (1), and create more activities (1). Regarding the promotions, there were two ways proposed by them, which include giving talks in schools, and mosques, and placing advertisement in the printed and electronic media.

The two respondents that came up with the idea of spreading the importance of ICT directly to the local community said that they were willing to spend time to talk their close friends and relatives and also their acquaintance pertaining to the importance of ICT in changing one's life. This was the remark:

> *"Saya akan menceritakan kepada masyarakat tentang kemudahan yang tersedia seperti kemudahan mendapat pelbagai maklumat mengikut citarasa masing-masing (i.e. resepi masakan dan hiasan dalaman kepada surirumah) dan mempromosi barangan keluaran mereka (i.e. kraftangan) dengan membina laman web sendiri atau melalui laman web PID"*
>
> *(I will inform the community on the facilities offered such as of getting all sort of information required by them (i.e. cooking recipes and internal decoration to housewives) and also about promoting their homemade products (i.e. handicraft) through their own websites or the PID website)*

After getting the experience and knowledge in ICT, eight of the respondents (61.5%) informed their readiness to become ICT instructors. Three of them stressed their willingness as:

> "*Untuk berkongsi pengetahuan, kemahiran dan pengalaman"*
> *(to share knowledge, skills, and experience)*

One of them convincingly gave his reasons of becoming an ICT instructor:

> "Ingin *mendidik anak bangsa menjadi berjaya dan celik IT (to teach the young generation to become IT literate and to be successful in IT)"*

> "*Ingin mencurah bakti (social obligation)"*

A very humble remark was:

> "*Kerja sebagai pengajar ICT adalah kerja yang mengembirakan, menguntungkan & bermanafaat (ICT instructor is a happy, profitable, and beneficial job)"*

Two respondents refused to become instructors because they have other commitments to fulfill.

Out of the 13 respondents, only five of them were appointed as PID Kelab Usahawan (Entrepreneur Club) committee members. In fact, one of them was elected as the vice chairperson. The rest of the respondents said that they have not been offered any post not only in the PID committee but also other committee in their villages or community.

4.3.4 Research Question 3: How Do Behavioural Factors Reflect the Empowerment of PID Users?

This section describes the responses given by the PID users in order to answer the third research question of this study. The description is based on the two constructs of the behavioural factors of individual empowerment, which are coping, and participation. Behavioral empowerment reflects efforts made that promote an individual's strengths or competencies. Zimmerman (1995) emphasizes that actions associated with behavioral empowerment would vary with the goals and opportunities available. For telecentre users, this includes their participation and coping efforts to engage themselves in ICT-related telecentre activities to improve their socio-economic well-being.

4.3.4.1 Coping and participation

The coping and participation of the respondents focuses on their commitments towards ICT-related activities organized by the PID especially pertaining to their socio-economic well-being. The questionnaire and each interview session were started with some general questions such as the number of years as PID users, the

frequency of PID usage in a week, and the purpose of coming to PID (Table 4.7). These questions were asked in order to determine the coping and participation behaviour of the PID users. Almost sixty-two percent of the respondents had been using the facilities in the PID for more than a year. Most of them (61.5%) stated that they usually came to the PID between one to five times in a week. The respondents came to the PID to fulfill various purposes such as searching information, completing school homework/assignment, communicating via Internet, reading online news, doing business chores, and participating in the computer trainings.

Table 4.7: The Kuala Nerang PID Usage

		Frequency	**Total Respondents**
PID Usage	Less than a year	5	13
	1-2 years	5	
	More than 2 years	3	
Frequency of Usage	Only when required	5	13
	1-2 times	3	
	3-5 times	5	
Purpose of using PID	Homework/Assignments	7	
	Office chores	0	
	Business chores	3	
	Computer training	3	
	Reading news	3	
	Communication	4	
	Playing games	2	
	Entertainment	3	
	Information searching	9	

4.3.5 Observations of the Kuala Nerang PID

In this section, some of the observations of the PID were made. This was part of the data collection method. The Kuala Nerang PID was visited twice for data collection. The two visits were considered enough since prior to this research, several visits had been made to the PID when conducting other related research on telecentre that showed similar observations (as mentioned in Section 2.3.3). In addition, this is a cross sectional not longitudinal study. The second visit were needed to find out more or clarify on certain issues or behavior from the same or different set of respondents once the data collected from the first visit were analyzed. The purpose of the first visit, which was on 3 March 2009 at 9:30 am, was to distribute 30 sets of questionnaire to the users.

The purpose of the first visit, which was on 3 March 2009 at 9:30 am, was to distribute 30 sets of questionnaire to the users. The PID, which was divided into two sections: classroom and administrative areas, was equipped with seven desktops, two laptops, a printer, and a scanner. The desktops were placed in the classroom area, while the laptops, printer, and scanner were in the administrative area. The laptops were provided for the use of the supervisor and the assistant supervisor.

During the visit, there were four teenage girls attending computer class conducted by the assistant supervisor. At that time, situation at the centre was a bit relaxed because most users especially schoolchildren were attending schools. Seeing them learning about the computer applications, it shows that these girls came to the centre to acquire or improve their ICT skills and knowledge. At the same time, each of them

must have their own intentions of learning to use ICT especially those that bring about positive outcome to them. Obviously, this can be associated to the first intrapersonal factor of empowerment, perceived control. In addition, by participating in the computer training session, it shows that all of them were motivated to improve themselves. Consequently, this will lead them to gain self-efficacy and competence. In answering the first research question of the study, "How can intrapersonal factors play a role in empowering PID users?", such characteristics suggest that these teenage girls are getting ready to build up their intrapersonal trait towards empowering themselves (had fulfilled all the intrapersonal empowerment factors in terms of perceived control, self-efficacy, competence, and motivation).

A couple of girls also came in after a few minutes just to do some printing. The girls seemed to know how to use the computer since the PID assistant supervisor did not mind letting them used his laptop for the printing purposes. In terms of the intrapersonal factors of empowerment, this action indicates that the girls had possessed the self-efficacy and competence in handling the use of ICT applications and devices.

Even though, there were many people queuing at the post office counters during the hours, there was no one who came in to the centre to use the online payment transactions. According to the assistant supervisor, usually there were some people in the community came in to use the Internet or ask for his help in using various online applications. Most of the time, especially when he was free, he would entertain their requests. Sometimes, he would approach some of the people in the

post office and invite them to the PID so that he could help them using the online applications to perform various transactions.

The second visit, which was on 17 May 2009 at 3:00 pm, was set for conducting interview with the users. On that particular day, the attendance of the students for the computer class was full (seven people). Similar as to what observed during the first visit, the willingness to participate in the computer training session signified that the users had the motivation and perceived control towards acquiring ICT skills and knowledge in trying to achieve positive outcomes in their lives. Therefore, their actions suggest that they would soon be working towards attaining the other two factors of intrapersonal empowerment, self-efficacy, and competence.

During that particular hour, there were several users turned up but have to go back since there was no more PC available. However, a young teacher managed to stay at an extra corner provided with table and chair where he could use his laptop to access the wireless Internet connection. After a while, two more men in their twenties came in with their laptops and started to access the Internet. This situation suggests that there were users who intentionally came to the centre just for accessing Internet. The teacher can be categorized as among those who had already acquired the necessary ICT skills and knowledge since he already owned a laptop that he confidently brought along to the centre. This would be an indication that he already fulfilled the characteristics of the intrapersonal factors of empowerment.

In terms of how can interactional factors play a role in empowering PID users?, the fact that the users came to the centre and participated in its training and activities, denotes that they were critically aware of the existence of the PID, and of its offered training and services. In addition, their participation in the PID shows that they had gone through some kind of judgments process (assessment and evaluation) in making decision related to the use of ICT. Moreover, for the teacher who came in with his laptop to access the internet through wireless connection must have anticipated the benefit of using ICT in his live. This indicates that he do realize that ICT can support him in making decision and solving problems.

4.4 Case Study 2: PID in Simpang Empat, Perlis

Pusat Internet Desa Simpang Empat (Figure 4.7), which is situated in the Arau Parlimentary constituency, is the only PID in Perlis. The centre started its operation on November 2003. Since then, the centre had gone through various phases of improvement in order to deliver high-quality ICT-related services to the surrounding communities. During the first phase (Training Centre: 2003-2004) the centre focus was to give free ICT training to the community. In 2005 until 2007, the centre was upgraded to a community knowledge centre (CKC) particularly to concentrate on the implementation of electronic services and applications such as the e-government, e-learning, and e-commerce. The following year in 2008, the PID went through the third phase of its development. Known as PID 2.0, the center was aspired to create a social entrepreneur club with the intention to provide a platform for the community to share related experience, and knowledge among themselves. Eventually, the number of social entrepreneurs among the local communities would increase. The

PID attracts many users not only from the Simpang Empat community but also from other parts of Perlis since it is located only 12 kilometres from the state capital, Kangar. In the Simpang Empat District, there are 23 villages with the population of 14,000 people (based on the 2004 statistics). Sixty percent of the local communities are farmers and fishermen, 20% are entrepreneurs, and 20% work in the public and private sectors.

Figure 4.7: The Simpang Empat PID Building

Since its operation in November 2003, the PID was under the supervision of a supervisor, Encik Nik Mohd Nasir bin Nik Megat, and his assistant, Cik Safariza bt Md. Fazil. In 2007 until today, Pn. Rahimawati Abdul Rahim took the place of the previous assistant supervisor. The management of the PID is supported by a Coordination Committee, chaired by Tuan Haji Shukri Haji Salim, with 10 committee members from all races in the community (Figure 4.8). The members also include teacher, agriculture officer, information officer, *imam*, police officer, village leader, and housewife. However, the number had since been increased to 18 people until today.

Figure 4.8: The Simpang Empat PID Organizational Chart

Initially, the PID was supplied with six computers, six UPS (uninterruptible power supply), two HP laser-jet printers, one HP desk-jet printer, one HP scanner, and one digital camera. These devices were provided by the government with the collaboration of INTEL as one of the smart partnership involved in the PID project. In addition, on 16 February, 2004, the centre was also equipped with free ISDN Internet technology with the speed of 128Kbps. The PID operates five days a week, Monday till Friday from 8.30 a.m. to 5.00 p.m. In 2005, to meet the high demand from the community, the facilities in the PID had been upgraded with additional two computers, a laptop, a LCD projector, and its screen, one fax machine, mycard reader, e-pay service, and 512 Kbps Streamyx Internet technology (Figure 4.9).

Figure 4.9: The Facilities in Simpang Empat PID

The first computer training program started in January 2004 with 72 students. The students were required to attend the class for three days in a week. In the following month, the students were divided in to two groups since the number had increased to almost 60 more. The PID also had set up a computer class schedule so that it would easier for the students to adjust to their time. The use of class modules were only implemented in the middle of April, 2004. Each computer class consists of 5-7 students (Figure 4.10). The students are required to attend the class three times a week, which falls on Tuesday, Wednesday, and Thursday. The classes are divided into groups based on specific modules. Microsoft Office Word module begins at 9.00 till 10:30 in the morning, Microsoft Office Powerpoint and Internet module at 11.00 till 12.30 in the afternoon, and Microsoft Excel module is from 2.30 to 4.00 in the evening.

Figure 4.10: Class Session in Simpang Empat PID

Besides access to computer usage and computer class, the PID also organized outdoor activities, such as, conducting a small scale research pertaining to data gathering of the local communities' socio-economic activities, heritage, and culture (Figure 4.11). The information is required for the purpose of developing the PID website. The following is the list of current services offered by the PID:

- Free computer and Internet access
- Free basic computer class and training
- Financial license registration and renewal through e-procurement
- Printing and scanning
- Fax
- Handphone top-up services (MAXIS, CELCOM & DIGI), IDD CALL and Internet prepaid
- Wedding card designing and printing
- Typing

Figure 4.11: Data Gathering Activities

At the end of 2004, the Simpang Empat PID had been honoured with The Best Pusat Internet Desa Competition award at the ICT Excellent Award and the Asean Communication and Multimedia expo at the Malaysian International and Conventional Exhibition and Convention Centre (MIECC) in Seri Kembangan, Selangor (Figure 4.12). The achievement was based on the following criteria; number of users, number of trained users, PID management, and the commitment of the members of the Coordination Committee towards the progress and operations of the PID.

Figure 4.12: The Best Pusat Internet Desa Competition Award

In 2006, the PID once again made an outstanding achievement when the centre was pronounced as Community Knowledge Centre by the Perlis Chief Minister, YAB Dato' Seri Shahidan Kassim. Furthermore, the PID was also declared as one-stop centre that provide additional online facilities such as the e-government, e-learning, e-commerce, and telecommunication applications.

The Simpang Empat PID vision is to create a digital community in order to narrow the knowledge gap between the rural and urban communities. Its mission is to equip the centre with knowledge networking and sophisticated ICT facilities in order to accomplish the community requirements. To achieve the vision and mission, the PID management has laid out the following objectives:

- to develop the IT infrastructure in the community
- to create continuous trainings in order to increase the ICT awareness, information and skills among the community

- to become the moderator for the implementation of e-government applications
- to become a reference centre to improve the local community socio-economic level
- to become a community knowledge centre that integrates the public and private agencies

4.4.1 The Profile of Simpang Empat PID Users

Out of the fifty questionnaires distributed to the Simpang Empat PID users, 35 responses were returned. However, two responses were not usable since the respondents did not answer most of the questions asked. There were six users who turned up for the face-to-face interview. Out of these six interviewees, only one of them had participated in the survey done earlier. The details are depicted in Table 4.8.

Table 4.8: Data Collection Technique and the Total Number of Simpang Empat Respondents

Technique	Number of Respondents	Total
Survey	35 (2 unusable)	33
Face-to-face interview	6 (1 restatement)	5
Total Respondents	41	38

Table 4.9 portrays the demographic profile of the Simpang Empat PID respondents. The valid number that represents the Simpang Empat PID users is 38 respondents since two survey responses were unusable and one of the interviewees was just

restating or clarifying their answers in the survey. Most of the Simpang Empat respondents were female (68.4%). Majority of the respondents aged between 15-19 years old, 23.7% were between 20-29 years old, 13.2% were between 30-39 years old, 7.9% were between 40-49 years old and 2.6% were between 60-64 years old. The users were mostly unemployed (42.1%) who had just finished their secondary schools (SPM qualification), while the rests were housewife (2.6%), students (31.6%), government servants (5.3%), and self-employed (15.8%) with degree (5.3%) and diploma (18.4%) qualification.

Table 4.9: The Profile of the Simpang Empat PID Users

		Frequency	**Total Respondents**
Sex	Male	12	38
	Female	26	
Age	15-19	20	38
	20-24	7	
	25-29	2	
	30-34	2	
	35-39	3	
	40-44	1	
	45-49	2	
	50-54	0	
	55-59	0	
	60-64	1	
Academic Qualification	SRP/PMR	2	38
	SPM	25	
	Diploma/STPM/Matriculation	7	
	Degree	2	
	Others	1	
	**missing value*	*1*	
Employment	Unemployed	16	38
	Housewife	1	
	Student	12	

	Government/Private Sector	2	
	Self-employed	6	
	**missing value*	*1*	

4.4.2 Research Question 1: How Do Intrapersonal Factors Reflect the Empowerment of PID Users?

This section describes the responses given by the Simpang Empat PID users in order to answer the first research question of this study. Similar to the first case, the description is based on the four factors of intrapersonal constructs of individual empowerment, which are perceived-control, self-efficacy, competency, and motivation.

4.4.2.1 Perceived control

This section clarifies the responses gathered pertaining to the first construct of empowerment, perceived control. The responses are necessary to determine the PID users' reactions under various conditions or circumstances.

The first three questions that stress on the improvement of socio-economic well-being specifically requested the respondents to explain on how ICT helps to improve their lives, change their standard of livings, and achieve their ambitions. Interestingly, almost all respondents (97.4%: 37 out of 38) communicated positive indication in terms of acquiring skills and knowledge in ICT. The skills and knowledge are important particularly in accessing information from the Internet. Having access to information provides them the exposure towards various business,

career, and study opportunities. Besides those opportunities, they were convinced that not only their standards of living could be changed but they could also accomplish their ambitions if they were to use the technology.

Career opportunity was pointed out by fourteen respondents (36.8%) who mentioned that the ICT knowledge and skills gained benefited them in terms of providing a convenience platform of jobs hunting. Furthermore, some of them were relieved that the computer certificates that they possessed could be an extra value for them in securing job application or promotion:

> *"Memberi peluang-peluang pekerjaan melalui laman web. Membolehkan saya mencari pekerjaan melalui Internet. Dengan adanya sijil atau kemahiran komputer, dapat memudahkan persaingan untuk mendapat kerja"*

Eleven respondents (28.9%) admitted that having the ICT knowledge and skills allowed them to easily delve into matters regarding furthering their study. In addition, administration aspects such as application to the various higher learning institutions could be dealt online. This is an example of the responses stated by the respondents:

> *"Melalui penggunaan Internet saya berpeluang mengetahui maklumat berkaitan peluang meneruskan pengajian saya. Memudahkan urusan yang berkaitan permohonan untuk menyambung*

pelajaran dan sebagainya. Menyediakan laman web berkaitan pelajaran (ilmu pengetahuan)"

In terms of offering business opportunities, only four respondents (10.5%) agreed that with the ICT knowledge and skills, they could continuously update their information regarding the various related sectors. This would eventually increase their possibilities of venturing or expanding into other businesses. For instance, a self-employed man in his forties was saying that he was able to expand his business through the Internet:

"Penggunaan ICT (i.e. Internet) memberi peluang yang luas dalam perniagaan, mendapat lebih ramai kenalan perniagaan serta pasaran perniagaan yang lebih luas"

His statement was supported by a young self-employed man, aged 28, who claimed that he could conduct his business worldwide through the Internet:

"Dapat menajalankan perniagaan dengan lebih luas tanpa ada sebarang jurang (dunia tanpa sempadan atau globalisasi). Mengguna dengan sebaik mungkin mengikut perancangan. Segala maklumat hanya dihujung jari oleh itu memberi lebih peluang menambah & menjana pendapatan"

Other answers concerning the use of ICT in improving one's socio-economic well-being life include the ability to achieve efficiency in accomplishing daily activities or routine matters and in facilitating communication. Fifteen respondents modestly stated that their daily routines could be handled faster and smoothly through the use of online applications. Another 13 respondents were delighted to the fact that they could easily get connected to their friends, relatives, colleagues, and business acquaintances through numerous communication softwares regardless of time and location. Fascinatingly, all respondents that chose "facilitate communication" as their answers were between the ages of 18 to 25. Three of them explicitly pointed out that they now have the opportunity of establishing connections with new friends from different parts of the world. The following are quoted from two of the respondents:

> *"Dapat berhubung secara langung serta memberi peluang mengenali ramai rakan dari dalam dan luar negara"*

> *"Menyediakan platform untuk saya berkomunikasi melalui blogstar"*

Nevertheless, eight respondents emphasized on the opportunity of broadening their existing or acquiring new knowledge. Amazingly, a 60 years old self-employed man eagerly said that by having ICT skills and knowledge, he can now proceed with his interest in multimedia.

"Dapat meningkatkan kemahiran ICT serta dapat meneruskan minat dalam bidang multimedia"

To proceed with the identification of factors related to perceived control, three more questions were posted to determine the respondents' point of views regarding the importance and their readiness of acquiring ICT skills and knowledge. Even though all respondents were convinced that they were always ready to learn new computer softwares and applications, five of them suddenly gave contradict reactions towards to the other two questions: "*Do you need to have ICT knowledge in this globalization era? Why?"* and "*Are you ready or willing to spend more time to improve your ICT knowledge? Why?"*. Their negative reactions could not be elaborated since they did not provide their justifications.

Nearly 80% of the respondents obviously wanted to improve their current ICT knowledge and skills because they realized the importance of being up-to-date with the technology advancement. These were some of their justifications:

- Do not want to be left behind from development (not to be lost in the era of globalization)
- ICT offers unlimited facilities and conveniences
- To become more competitive particularly in the job market
- To move ahead for securing a better future

An interesting explanation given by two 18 years old students was that they would apply the knowledge and skills in their lives and career:

"Pengetahuan/kemahiran ICT boleh diaplikasikan dalam kehidupan dan kerjaya"

4.4.2.2 Self-efficacy

As for the Simpang Empat PID case, most of the respondents (86.8%: 33 out of 38) realized that ICT was capable in assisting them in solving problems by offering them the convenience of information retrieval. For instance, the opportunity of obtaining required information from numerous websites could be used as guidance solving certain problems. This statement is quoted from a 24 years old fresh university graduate:

"Menyediakan banyak maklumat, contohnya apa yang telah dicapai oleh orang lain, boleh diaplikasikan dalam kehidupan"

Through the interview session, two respondents shared their experience of solving their problem by searching information from the Internet. An unemployed woman aged 19, talked about the usefulness of Internet in assisting her in exploring higher education prospect.

"Mudah untuk mendapat maklumat yang diperlukan (i.e. dari segi untuk meneruskan pengajian ke peringkat yang lebih tinggi)"

On the other hand, 61 years old self-employed man was relieved that he was able to claim his son's insurance that involved in an accident by looking up for related information from the Internet.

> *"Mudah untuk mendapat maklumat yang diperlukan (i.e. pengalaman anak mengalami kemalangan, berjaya membuat tuntutan insuran dengan membuat pencarian maklumat melalui Internet)"*

Nevertheless, a 30 years old government servant and a 22 years old student fancied the use of electronic mail where they could get instant feedbacks on any of their queries. A male teacher, aged 34, was blissful with the opportunity of accessing Internet that provides him a reference centre.

Despite supporting in solving problem, ICT also provides the respondents an alternative channel in handling routine activities especially in paying utility bills, filing forms, and applying jobs, which proved to be much faster and handy. Surprisingly, an 18 years old student seemed to be thankful since she could now use the computer to prepare her assignment because her handwriting was untidy.

When asked whether they are comfortable using computer or Internet on their own, almost all respondents (94.7%: 36 out of 38) stated "YES", except a 17 years old girl who did not give her response, and a 18 years old girl who admitted that she was a new ICT learner. Those who felt comfortable mostly said that they have already possessed the basic ICT skills. As a matter of fact, the only senior citizen being

interviewed mentioned that he was now at ease when using the computer or Internet since he had been the member of the PID for the past six years. Similarly, a self-employed man in his forties also claimed that he had been using computers for quite sometimes.

Although more than 90% of the respondents admitted that they already possessed the basic ICT skills, slightly more than half of them revealed that they had never used any of the online services available. Out of these numbers, only nine explained their reasons. Three teenagers, aged between 18 and 20, said that they did not see the needs of using those services based on the following quotes:

"Tiada keperluan"

Another two mentioned about security factor:

"Tidak yakin dengan security .....virus banyak"

Another two did not trust the security aspect, while the other four respondents, aged 18, 20, 24, and 61, admitted that they had not use such services because they did not have the knowledge. The senior citizen also added that he had never given it a try.

For the remaining respondents (44.7%: 17 out of 38) that had experienced using electronic services and applications, said that such services were very convenient and effective especially in disseminating information, paying bills, and filling various

application forms. Unfortunately, only two of these respondents failed to present their reasoning. In terms of information transmission, seven respondents mentioned about the efficiency and effectiveness of using electronic mail.

The last question relating to self-efficacy, "*If you were to develop your own website/blog, what would the content be?"* was only intended for the 28 respondents that had never developed website or blog. Regrettably, six of them did not attempt to answer, while another six bluntly declared that they did not have the intention of developing website or blog because they were not interested. On the other hand, 16 respondents were excited to have their own personal and business website or blog. Among the content of personal websites/blogs that they wanted to share were issues related to:

a. science and technology,
b. food delicacies,
c. special recipes,
d. family,
e. motivation,
f. religion, and
g. academic.

For the business websites, surely the content would be about individuals' business products since their main target was to promote and market those products.

4.4.2.3 Competence

The respondents from the Simpang Empat PID demonstrated that their ICT skills had improved after using various services and facilities at the telecentre. This was based on several convincing explanations provided by them that basically focused on their ability to use the computer, several applications, and Internet. Twelve of them even specified the related trainings that they had undergone either at the PID or elsewhere.

Nonetheless, a number of them (26.3%: 10 out of 38) indicated that they still do not understand most the computer hardware and software terminologies, while another two claimed that they did not understand at all. The 10 respondents did not know much about the related terminologies stated that their understandings were limited since they were new learners in the computing world.

Those who were satisfied with their computer knowledge mentioned that their achievements were due to their efforts of attending computer classes during their school days or while participating in the PID, and from the exposure gained after using the technology for quite sometimes.

Similarly, the responses for the next question suggested that slightly more than half of the respondents (55.3%: 21 out of 38) had attempted downloading something through the Internet. Most of them tried this for personal purposes. However, only three respondents specified the materials or applications that they had downloaded. For example, a young woman aged 19, said that she usually downloaded educational materials such as past years examination test bank. The 61 year old man who was

interested in multimedia application regularly downloaded related software with the intention of learning more about them, while another man in his forties had downloaded Adobe, Internet Explorer, and Firefox applications mainly for his personal and business usage.

For those who had never experienced the downloading process, only seven of them honestly gave their reasons for not doing so. Four of them said that they did not know how to go about doing the downloading process. The rests were either did not see the need of such operation, not interested, or did not trust the security aspects. In fact, one of them stated the following:

> *"Setakat ini saya cuma menggunakannya untuk berurusan dengan KPT dan mencari maklumat sahaja"*
> *(I only used it to deal with KPT and search for information)*

Finally, the majority of the respondents (76.3%: 29 out of 38) revealed that they had never been involved in maintaining a computer, while the others were familiar with various technical solutions such as hardware, and software installation, computer formatting, and cleaning viruses.

4.4.2.4 Motivation

Motivation concerns with the inner factors that drive them to use ICT in improving their socio-economic well-being. This section describes the motivation factor of empowerment intrapersonal construct. Four questions were presented to order the

respondents to determine their motivational characteristics. In answering the first three questions, which overall focused on their aims of coming and participating in the PID, the respondents pointed out six factors that can be categorized into two parts, intrinsic and extrinsic motivations. Intrinsic motivation represents the motivation that comes from inside an individual, while extrinsic motivation represents the motivation that comes from outside an individual. Table 4.10 depicts the intrinsic and extrinsic motivation factors identified from the responses. The intrinsic factors include filling spare time, learning to use computer and Internet, and using the ICT facilities. On the other hand, the extrinsic motivation factors comprise of free/minimum service charge, comfortable place, and friendly operators.

Table 4.10: Motivation Factors

Types	Factors	Total Responses
Intrinsic	filling spare time	21
	learning to use computer and Internet	13
	using the ICT facilities	13
Extrinsic	free/minimum service charge	31
	comfortable place	20
	friendly operators	11

The findings in Table 4.10 obviously indicated that a majority of the respondents decided to come to the PID and participate in its activities was due to “cost”, either minimum or free service charge. The respondents seemed to appreciate the low or free of charge since most of them kept on repeating about it especially when they registered to become PID members. They also added that no other nearby centres that could offer such low or free usage charge. A 36 years old man mentioned about

the membership scheme offered by the PID whereby he only need to pay RM3 during registration, which enable him to access the Internet for free. Another teenage girl mentioned about the low fee charged for those who wanted to participate in the computer classes.

The next highest response regarding the appealing factor that made the respondents came to the PID was "location". The respondents were able to spend their free time by doing some meaningful activities especially when the centre was located near to their homes and workplaces. At the same time they could use the ICT facilities and other services provided at the centre. Besides of its cost, location, and facilities, most of them chose the PID because of its relaxing "condition". According to some of them, they were happy to hang around the PID since the centre was clean. Moreover, the centre was also equipped with air-conditioner, which made it the most comfortable compared to other centres.

Most of the respondents that chose gaining ICT skills and knowledge as their answers explained that ICT skills and knowledge was important in order to be successful in today's world. Some of them, young students between the age of 18 and 22, realized that those who have computer certificate would not only have better chance competing in job market but also to secure a better future. The personality of the PID supervisor and his assistants was another trait that caused the respondents to keep on visiting the centre. They claimed that what made the PID administrators appealing to them were their good and friendliness attitude. Some were impressed with the administrators' capabilities in teaching them.

For the last question, "*What makes you decide to use the ICT in your daily life?*", most respondents (78.9%: 30 out of 38) stated efficiency and effectiveness as their answers especially in terms of access to information. For instance, they mentioned about the convenience of looking for latest information regarding career and academic opportunities. Others realized the importance of ICT in their daily lives particularly in helping them to generate their income where they can promote and sell their products online.

4.4.3 Research Question 2: How Do Interactional Factors Reflect the Empowerment of PID users?

This section describes the responses given by the Simpang Empat PID users in order to answer the second research question of this study. Similar to the first case, the description is based on the four factors of interactional constructs of individual empowerment, which are critical awareness, decision-making skill, problem-solving skill, and leadership skill.

4.4.3.1 Critical Awareness

Critical awareness in this study refers to the PID user's awareness level regarding the establishment of the telecentres in their neighbourhood. The responses for the first question related to critical awareness revealed that most respondents (63.2%: 24 out of 38) knew about the existence of the PID from their friends, relatives, and teachers. Seven found out through promotion by various printed and electronic media such as

from the newspapers, banners, signboards, and Perlis FM, while the other seven coincidently knew about the PID when they visited the Post Office.

The list of services offered in the Simpang Empat PID is displayed in Table 4.11. Most respondents were aware of the availability of computer classes and the printing services provided at the centre.

Table 4.11: Services in the Simpang Empat PID

Services	Total Respondents
Computer classes	32
Printing	32
Internet	29
Consultation services	15
Typing services	6
Computer sales agent	5
Photostat	3
Computer maintenance	2
Fax	2
Paying utilities bills	1
Business registration	1

Regarding the computer classes which were offered at the PID, most respondents (52.6%: 20 out of 38) indicated that they had attended the basic computer training class. This class trained them the use of three popular Microsoft Office packages, which were Word, Excel, and Power Point applications. Another six respondents participated in Internet class. The 61 years old man came to the centre to learn about the video editing technique and various graphic applications. Unfortunately, four respondents failed to specify the type of trainings that they obtained from the PID.

The respondents were in consensus that all the computer classes were conducted by the supervisor and assistant supervisor. For the rests of the respondents, eight of them pointed out that they did not get any training from the PID while the other six did not state their answers at all.

For the last question pertaining to critical awareness, "*What make you decide to use the services and participated in the training offered by the PID?"*, only ten respondents realized the importance of having ICT skills and knowledge especially in ensuring their success. For example, a teenage girl stated the following:

> *"Untuk mendapat kemahiran komputer kerana masa kini ramai yang menggunakan komputer untuk bekerja. Seiring dengan peredaran zaman yang memerlukan penggunaan komputer, keperluan masa kini"*

Another four of them talked about the advantage of having computer certificate especially in competing for job applications. Unfortunately, the other answers were more prone towards generic interests instead of satisfying their inner needs. Those answers were filling their spare time, free or low charge, administrators, comfortable factor, and facilities or services offered. These responses are more related to the motivational factors of the intrapersonal factors of empowerment.

4.4.3.2 Decision-making Skill

The initial response of the Simpang Empat PID users pertaining to the decision of using ICT showed that all respondents except one acknowledged that the choice was made entirely by themselves on their own. Evidently, this signified that they had their own viewpoint regarding the matter particularly when majority of them (78.9%: 30 out of 38) really appreciated the efficiency and effectiveness of using the technology in facilitating their routine matters. Most of the time, these respondents came to the centre mainly because they wanted to access information from the Internet (86.8%: 33 out of 38).

Besides the Internet, the most used application at the centre was the Microsoft Office package (34.2%: 13 out of 38) especially the Microsoft Word, Excel, and Powerpoint. These applications were usually used by those who attended the computer training sessions at the centre. The least used applications were FrontPage and audio-video related applications. The main usage of Internet and Microsoft is listed in Table 4.12.

Table 4.12: The Use of Computer Application at the Simpang Empat PID

Applications	Usage
Internet	Information searching
	Communication
	Entertainment
MS Office	Computer trainings
	School/office assignment completion

In terms of website development, majority of the respondents (73.6%: 28 out of 38) had never develop one. Out of them, only 10 revealed their reasons as they did not have the related skills, knowledge, and interest. Three of those who were not interested in developing websites or blog presented remarkable clarifications during the interview session. A young lady, aged 19, openly expressed her anxiety concerning the misinterpretation of the information in the website or blog. On the contrary, another teenage lady simply admitted that she was not interested in writing and a self-employed man in his forties cynically communicated that he was not interested in sharing information with other people.

For those who had developed their own personal and business websites, their content usually differs according to the users' interests such as families, politics, career, and entertainment. The only person who had a business website is the 28 years old self-employed man who deliberately developed it for promoting his expertise in computer services.

For the last question, when asked whether having ICT knowledge helps them to become wiser decision-makers and problem solvers, two respondents did not answer and one disagreed with the statement. Unfortunately, her disagreement was not explained. For those who agreed, only 14 of them communicated their agreements which mainly touched on the efficiency of accessing information. For example, three self-employed man, aged 28, 36, and 40 admitted that by besides the opportunity of having numerous required information, they could as well learn from others' who shared their experiences and views. This would eventually help them in making their

own assessment and evaluation before proceeding with their final resolution. The other four conveyed that with ICT knowledge they had become better person where one of them appreciated that he was more knowledgeable and the other was saying that he was more confidence in solving his problems.

4.4.3.3 Problem-solving Skill

In order to identify their problem-solving skill, the participating respondents were required to explain the way they went about handling and managing any ICT related problem and challenge. In this study, they needed to not only specify those barriers or obstacles but also to describe how they cope with problems faced while using ICT applications at the PID. In this section, three questions were posed to explore the respondents' problem solving skills. Both questions, B4, "*What are the barriers/obstacles that you experienced while using the PID?"* and B5, "*How did you cope with the barriers that you face?"* were examined together in order to match the barriers faced with the coping strategies. Finally, they were also required to specify on how ICT help them in solving their problems.

The main barriers pointed out by the respondents were:

1) the hassle of waiting or queuing to use the computers in the PID (55.3%: 21 out of 38),
2) slow Internet connection (28.9%: 11 out of 38), and
3) virus attack (13.2%: 5 out of 38).

However, seven respondents said that they faced no problems while visiting the PID.

To overcome the above barriers, each respondent had his or her own way of dealing with the dilemma. In dealing with the problem of insufficient number of computers, six respondents insisted that they would patiently wait at the centre until there is available computer. Another six chose to come at some other times that they thought would be not many users at the PID. Usually they would refer to the PID supervisor or the posted class schedule for the best time to come back. The other four would rather go to the nearby cyber café instead of waiting at the centre. Nevertheless, three respondents would not mind sharing computers with their friends.

To overcome the second problem of slow Internet connections, they would patiently stay and proceed with their work, go to the nearby cyber café or go home. Lastly, those who had to confront with the virus attack could only manage to inform the PID supervisor about the problem.

For the last question regarding the problem-solving skill, respondents were requested to share their action when encountering problem while using computer. Unfortunately, only 10 respondents stated that they would first try to solve the problem by themselves before consulting others. If only the problem persisted, they would refer it to those were more skillful. For the rests, majority of them (65.8%: 25 out of 38) would immediately referred the problem either to the supervisor, his assistant, or anybody available. Unfortunately, two respondents did not give their answers; one said that he got no problem, one would straight away shut down the computer; and one mentioned that it depended on types of problem.

4.4.3.4 Leadership Skill

To identify the leadership skill, the Simpang Empat respondents were initially needed to suggest the means of encouraging more people to use the PID facilities. The primary strategy stated was that all PID users should play a role in spreading the benefits of using ICT to the community (52.6%: 20 out of 38). Others were prone towards PID administrators' initiative, which were to perform aggressive promotions (26.3%: 10 out of 38), provide more attractive services (10.5%: 4 out of 38), and additional computers (7.9%: 3 out of 38).

For the first strategy, spreading of ICT benefits, users were encouraged to share their views on ICT with their close friends and relatives. By doing this, they could attract the attention of others to visit the PID.

In terms of promotion, among the suggestions were to advertise about the PID through printed and electronic media, and conduct awareness talk and campaign in the community. As for the idea of providing attractive services, suggestions included the following: more reading materials, regular visitors should be taught to develop their own blogs, and provide fixed timetable for PID registered members.

Regarding their readiness to become ICT instructors, regrettably, only 13 respondents expressed their willingness. This was mainly due to their obligations in sharing knowledge and skills with others. Impressively, the 61-year-old man showed his eagerness in sharing his knowledge in multimedia. Due to various reasons, the other 24 respondents sincerely rejected the idea of becoming ICT instructors.

Unfortunately, seven of them failed to clarify on their refusal. The most stated explanation was that they were not ready in terms of skills and knowledge (45.7%: 11 out of 24). Other reasons include that they were not interested, they were too young, and they had other priorities.

Currently, only two respondents have positions in the PID, a 42 years old self-employed and the 61 years old man. Both of them were elected as the community representatives at the PID due to being active members. In addition, they possessed the basic skills and knowledge in ICT. On the other hand, those who had never been offered any position in their village or community gave their some of their reasons as follows:

> *"Mungkin saya terlalu muda"*
> *(Probably because I am too young)*

> *"Tiada yang mencadang nama saya"*
> *(Nobody propose my name)*

> *"Tidak kekal di kampung kerana masih mencari kerja dan ingin melanjutkan pelajaran"*
> *(I am not staying at the village since I am still looking for job and I want to continue my study)*

> *"Tidak berminat kerana sibuk dengan kerja"*

(I am not interested because I am busy with my work)

4.4.4 Research Question 3: How do Behavioural Factors Reflect the Empowerment of PID users?

This section describes the responses given by the Simpang Empat PID users in answering the third research question of this study which focused on the two factors of the behavioural construct; coping, and participation.

4.4.4.1 Coping and Participation

In order to determine the coping and participation behaviour of the PID users, general questions such as the number of years as PID users, the frequency of PID usage in a week, and the purpose of coming to PID were posed to them. Table 4.13 presents the responses from the respondents. Nearly all respondents (95%: 38 out of 40) had visited the PID for more than one year. In fact, 12 of them had been loyal to the PID where they kept on coming to the centre for more than two years. In terms of frequency of usage, most of the respondents came to the centre once or twice in a week. Those who came more than eight times a week were unemployed teenagers, while those who came in once a while were mostly college students between the age of 20 and 33. The respondents came to the PID with various intentions especially to search for information (82.5%: 33 out of 40), participate in computer trainings (50.0%: 20 out of 40), complete school homework or assignments (42.5%: 17 out of 40), seek entertainment (37.5%: 15 out of 40), and read online news (25.0%: 10 out of 40).

Table 4.13: The Simpang Empat PID Usage

		Frequency	Total Respondents
PID Usage	Less than a year	20	38
	1-2 years	5	
	More than 2 years	11	
	*missing value	2	
Frequency of Usage	Only when required	6	38
	1-2 times	15	
	3-5 times	8	
	> 8 times	4	
	*missing value	5	
Purpose of using PID	Homework/Assignments	17	
	Office chores	1	
	Business chores	6	
	Computer training	20	
	Reading news	10	
	Communication	8	
	Playing games	3	
	Entertainment	15	
	Information searching	33	
	Filling up online form	1	
	Scanning	1	
	Photocopying	1	

4.4.5 Observation on the Simpang Empat PID

This section describes the observations made at the Simpang Empat PID, which was included as one of the data collection method. The centre was visited twice. Similar to the other PID, this centre was also separated into two sections: a classroom and an administrative area. In the classroom section, there were seven desktops available, while at the administrative area, there were another three desktops, and a printer.

Users can use the three desktops if other users used the desktops in the classroom. At the administrative area, there was also a photocopier, where people can use the service for a minimum charge. In addition, the centre also provides a mini refrigerator filled with soft drinks for sale.

Looking around inside the center, one would never miss the glimpse of posters, streamers, paper cuttings, and award certificates hanged on the wall. The supervisor was being creative in promoting and highlighting the centre's activities and achievements to visitors. The significant of such effort was the streamer that listed the PID mission and objectives. By placing it next to the main door, there was no reason for visitor failing to spot the streamer.

The first visit of the observation was made at 10:00 in the morning. During that time, a computer class session (Microsoft Office Module) conducted by the assistant supervisor was on progress. Amazingly, all students (seven of them) were female between the ages of 20 to 40 years old. Since the attendance of the session was full, therefore there was no available PC at the classroom area. The class session was very cheerful where everybody was enjoying and having fun trying out their computer practical exercises. In relation to the first research question of the study, "How can intrapersonal factors play a role in empowering PID users?", the users decisions of participating in the computer class show that they were motivated to acquire or improve their ICT skills and knowledge in order to accomplish positive transformation in their lives. Their actions also indicate that they could not only realize the benefit offered by ICT but also they could perceive that having ICT skills

and knowledge can help to improve their socio-economic well-being. This is evident by those housewives and part-time businesswomen who find time to come to the centre. As a result, by already established these two traits, perceived-control and motivation, these women would definitely progress towards the other intrapersonal traits, self-efficacy and competence, once they had succeeded in completing their computer trainings.

However, those who came in to use the computer or to access the Internet would use the PCs that were placed at the administrative area. For example, a teenage girl who was waiting for her SPM result was using one of the PC browsing through the Internet searching for information on higher institution prospectus. Once a while, she would turn over to other sites or pages such as the news and social networking websites. When spending her time through the facebook, she seemed to be very engrossed updating related information and checking her emails. From the observation, it looked like her intrapersonal construct of empowerment, be it in terms of her perceived control, self-efficacy, competence, and motivation, was high since she was able to use the above ICT applications confidently. Her conduct while using the computer and Internet obviously indicates that ICT skills and knowledge is important for her in improving her life especially in offering the opportunity of facilitating her routine activities.

During the next visit, which was about 12:00 in the afternoon, there were a few people at the centre using the computers. Some of them were browsing through the Internet and some were practicing their Microsoft Word and Excel lessons. Two of

them were middle-aged women in their forties. One of them was a housewife and the other was a night market seller. Both of them were revising their computer lessons. They usually came to the centre during that particular time after they had done with their house chores and while waiting to fetch their children from school. Their actions indicate that they were willing to spend some time to learn using the computer and its applications probably with the intention to not only improve their knowledge but also their socio-economic activities. This is because during the first visit, there were a couple of housewives who attended the computer class were actively involved in selling their home-made cakes and house ware and kitchenware products such as "Tupperware" from homes. In fact, they always brought along their products to the centre for promotion and sales. Both of them even mentioned that they would like to develop their business websites in the future, once they have gained the necessary ICT skills and knowledge. Usually, those who have interest in business would become members of the PID entrepreneur club. This would be one of their platforms in generating and sharing ideas and experience relating to business activities. According to the PID supervisor, a few of the entrepreneur club members were able to sell their products outside their hometown after promoting them through the club websites. For instance, one of the Tupperware dealers had diversified her business by involving in another direct-selling activity which she discovered through the Internet. Since the business was still new in Malaysia, she somehow or other had to develop her own website so that she can easily communicate with the business headquarter in the States and also with her clients throughout Malaysia. She was very grateful that she can develop the website with the help from the PID supervisors. She is now one of the members that consistently came to the centre to

improve her knowledge in updating and maintaining her website. Pertaining to the first factor of intrapersonal construct, perceived control, their determination in acquiring ICT skills and knowledge reveals that they had put their efforts in improving their socio-economic well-being. At the same time, this formed the basis that motivates them to learn more about ICT.

The others were school-leavers who took the opportunity to come to the PID not only to improve their computer skills but also to browse through websites related to higher education opportunities.

Regarding the second research question, "how can interactional factors play a role in empowering PID users?", by visiting the centre and participating in its training and activities, the observed users were critically aware of the existence of the PID, and of its offered training and services. Their awareness indicates that they had initially made up their decision relating the use of ICT. For example, the decision and effort in learning ICT made by the housewives, part time businesswomen, and school-leavers shows that they do realize that ICT can help them in making their decision and solving their problems.

While at the centre, there was a police officer came in asking for his assignment that he requested to be typed and printed out a few days before. According to the PID supervisor, the police officer was currently a part time student attached with a higher learning institution. Not long after that, a Chinese man in his sixties came to seek help from the supervisor. He asked the supervisor to help him prepare a formal letter

addressed to a government agency. Nothing much can be described regarding both of them since they either do not have ICT skills and knowledge or they were too busy to get their job done.

4.5 Case Study 3: PID in Balik Pulau, Pulau Pinang

The Balik Pulau PID (Figure 4.13) in Pulau Pinang started its operation on 26 December 2003 to provide ICT access to the surrounding communities. The Balik Pulau was chosen as one the PID location since it was considered as one of the rural area in the state of Pulau Pinang. The Balik Pulau is known as one of the popular durian producer in Malaysia. Currently, the centre is equipped with 10 personal computers (sponsored by DELL and the local community), two laptops, broadband Internet access by Streamyx, two laser jet printers, and one unit each of all-in-one printer, bubble jet printer, photostat machine, scanner, digital camera, binding machine, laminating machine, fax machine, LCD projector, screen projector, and 100 watt speaker.

Figure 4.13: The Balik Pulau PID Building

Originally, the centre was managed by Mornizawati Abdullah as the supervisor and her assistant. Almost three years later, 1st April 2006 until today, the centre is under the supervision of Puan Siti Huraizah binti Abdul Rahman, an IT degree holder. The PID operation is also supported by an assistant supervisor, and a voluntary technician who usually comes in to lend a hand (Figure 4.14). The operation hours of the PID are between 8.30 a.m. till 6.00 p.m. from Monday to Friday (Figure 4.15). Computer classes are also conducted from 9.00 a.m. to 12.00 p.m. on every Saturday except on the first week since the post office is closed on that particular Saturday. However, classes shall be conducted on Saturdays upon users' requests. Usually the requests came from employed users who are working during weekdays. The computer classes focus on the basic ICT training, which include introduction to computer, and Microsoft Office Packages modules. The Microsoft Office module would only touch on these applications; Word, Excel, PowerPoint, and Frontpage.

Figure 4.14: The Balik Pulau Supervisor and her Assistant

Figure 4.15: The Balik Pulau PID Operation Hour

Besides computer trainings (Figure 4.16), other main services offered by the PID consist of Internet and computer access. The use of Internet and computer in the PID is free for those who become PID members. In addition, the centre provides consultation services not only pertaining to computing matters but also on entrepreneurships. The communities can also obtain assistance in developing website, blog, and digital story telling activities. Other services include computer maintenance, printing, photocopying, faxing, laminating, and binding. Besides computer applications, the users may also access the electronic services and applications such as e-government, e-banking, e-learning, and e-procurement. In addition, business and streamyx registration may also be done at the centre.

Figure 4.16: The Computer Class Session

Similar to PID Simpang Empat, PID Balik Pulau has also achieved recognition from various national competitions. Among those are the Penang Chief Minister k-ICT Award 2006, and ICT Excellence Awards 2005 (Figure 4.17).

Figure 4.17: The Award

The Balik Pulau PID objectives are to:

- bridge the digital gap between the rural and urban communities,
- provide ICT knowledge to the communities especially to the senior citizen,
- create an electronic community through the development of a community website,

  and
- create awareness of the importance of ICT among the communities.

4.5.1 The Profile of Balik Pulau PID Users

Fifty questionnaires were distributed to the Balik Pulau PID users and 32 responses were returned, in which, seven were not usable since the respondents did not answer most of the questions asked. For the face-to-face interview, the PID supervisor and assistant supervisor have arranged with 10 users to be interviewed, but only five turned up. Out of these five interviewees, three of them had participated in the survey done earlier. The details are depicted in Table 4.14.

Table 4.14: Data Collection Technique and the Total Number of Balik Pulau Respondents

Technique	Number of Respondents	Total
Survey	32 (7 unusable)	25
Face-to-face interview	5 (3 restatement)	2
Total Respondents	37	27

Table 4.15 portrays the demographic profile of the Balik Pulau PID respondents. Majority of the respondents were female (55.6%). Most of the users were youth aged between 15 to 39 years old (77.8%), followed by those aged 40 to 54 (14.8%), and a

69 years old senior citizen (3.7%). One male user did not disclose his age. The users were mostly self-employed (51.9%), unemployed (33.3%) (including a pensioner), students (7.4%), and housewives (7.4%).

Table 4.15: The Profile of the Balik Pulau PID Users

		Frequency	**Total Respondents**
Sex	Male	12	27
	Female	15	
Age	15-19	7	27
	20-24	5	
	25-29	1	
	30-34	5	
	35-39	3	
	40-44	2	
	45-49	1	
	50-54	1	
	55-59	0	
	60-64	0	
	65-69	1	
	**missing value*	1	
Academic Qualification	Primary school	0	27
	SRP/PMR	5	
	SPM	8	
	Diploma/STPM/Matriculation	7	
	Degree	3	
	Other	4 (each MSc, Mechanical Elec. Cert., MBA, college comm. cert.)	
Employment	Unemployed	9 (1 pensioner)	27
	Housewife	2	
	Student	2	
	Government/Private Sector	0	
	Self-employed	14	

4.5.2 Research Question 1: How Do Intrapersonal Factors Reflect the Empowerment of PID users?

Similar to the previous two case studies, the descriptions in this section are based on the feedbacks given by the Balik Pulau PID users in answering the first research question of the study, which focus on the four intrapersonal constructs of individual empowerment: perceived control, self-efficacy, competence, and motivation.

4.5.2.1 Perceived Control

This section describes the characteristics of the Balik Pulau PID users in terms of the first factor of the intrapersonal construct of empowerment, perceived control.

In explaining on how ICT helps to improve their lives, change their standard of livings, and achieve their ambitions, majority of the respondents (96.3%: 26 out of 27) indicated that they were glad with the positive outcomes achieved from having the skills and knowledge in ICT. For them, the main advantage is the ability to use computer and Internet in accessing information. This will eventually provide more chances for them in getting hold of various opportunities in business, career, and academic. Furthermore, the respondents also admitted that the use of ICT would not only help them to achieve their ambitions but also change their standards of livings.

Those who focused on the business opportunities (22.2%: 6 out of 27) claimed that the knowledge and skills in ICT usage enable them to explore and expand on the area so that they could generate their source of income. An example of this can be referred to the statement made a 24 years old Internet marketer who was currently

depended on the use of the technology as his main source of income. For that reason, he added that he need to constantly improve his proficiency in order to be successful in life.

> *"Penggunaan ICT merupakan sumber pendapatan saya. Kemahiran sedia ada dapat dipertingkat seterusnya dapat membantu saya mencapai tahap yang lebih baik dalam perniagaan yang diceburi"*

Likewise, a self-employed woman aged 37, whom recently being terminated from her executive position at an electronic factory decided to follow her husband footstep in conducting business through the Internet. Involving in this kind of business was not a problem to her since she had acquired the ICT skills previously during her study in a university. She was eager to start her own business through the Internet so that she could change her standard of living by giving additional support to her family income. This is her remark:

> *"Perniagaan yang diceburi secara kecil-kecilan dapat menambah pendapatan keluarga di mana kebanyakan urusan perniagaan dilaksanakan melalui penggunaan komputer dan Internet (blog)"*

Meanwhile, a 36 years old businessman described that his standard of living had changed whereby currently he managed to expand his business circle globally:

> *"Dapat ramai kawan dari dalam dan luar negara"*

Instead of providing opportunity to search and apply jobs online, eight respondents were also delighted that they could benefit the advantage of possessing the ICT knowledge, which could lead to a better chance in competing for job recruitment and placement. This is evidenced by the remark made by a young housewife aged 20 that stressed on her aim to utilize the ICT knowledge and skills in looking for jobs so that she could support her family income:

> *"Untuk mengenengahkan teknologi pada masa kini. Dengan adanya kemahiran komputer, diharap dapat memudahkan peluang untuk mendapat pekerjaan bagi menampung kehidupan. ICT juga dapat dijadikan platform untuk membantu meningkatkan keupayaan diri sendiri dan seterusnya untuk maju ke depan. Menggunakan IT dengan cara betul dapat mencapai apa yang kita inginkan dalam hidup"*

A self-employed man explained in detail the process of registering with job agencies through the Internet:

> *"Searching jobs. We register at website like "jobstreet.com". So we easy to search our interesting career. At the same time employer can also contact us with reading our resume"*

Another four respondents highlighted that the advantage of having ICT skills was not only important in competing for job applications but also for continuing study in

higher learning institutions. All of them were motivated to use the ICT skills and knowledge in achieving better their ambitions and in changing their standard of living. For a 19 years old pre-university student, having knowledge in computer was an important preparation for her university life later where it could facilitate her in conducting her campus-life activities.

> *"Akan mengaplikasikan ICT yang telah diajar. Kemahiran ICT yang dimiliki dapat membantu dalam persaingan untuk melanjutkan pelajaran ke peringkat yang lebih tinggi dan juga untuk mendapat pekerjaan. Dapat menambahkan lagi pengetahuan tentang komputer sebagai persediaan untuk melangkah ke alam universiti. Dapat memudahkan aktiviti yang dijalankan di IPT (i.e. membantu dalam menyiapkan tugasan)"*

The most interesting example was the declaration made by a security guard aged 47, with only SPM qualification, where he proudly asserted that once he knew how to use the ICT, he would never stopped from learning new things:

> *"Tahu menggunakan ICT membuatkan saya ingin terus belajar"*

Apart from the above opportunities, some of them (11.1%: 3 out of 27) stated that having access to information via the Internet also provides the capacity of improving not only knowledge and skills in ICT but also in other fields. The appropriate skills and knowledge helps them to carry out their daily routines and business duties more

efficiently. For a businessman in his thirties and a 54 years old mechanic, ICT helped them to perform and manage their works efficiently and effectively. Similar experience was also shared by a student that realized the fact that ICT had facilitated her daily routines.

However, few respondents gave different reactions on how ICT had changed their way of lives after being able to get connected to the Internet. Their justifications primarily were to keep up-to-date with latest local and international issues, and to get acquainted with new and old friends. Relating to this, the Internet marketer was saying that any information that could easily obtained from the Internet needed to be used wisely by properly evaluating and assessing before applying them in solving any obscurity. Here is his statement:

> *"Mudah mendapat maklumat terkini. Dapat mengetahui maklumat dengan cepat dan mudah, walaubagaimanapun pelbagai maklumat yang diperolehi tidak terus diambil begitu sahaja, ianya akan dinilai dan ditapis untuk mendapat maklumat yang terbaik, menambahkan pengetahuan am melalui isu-isu semasa yang dibincang melalui Internet"*

For a self-employed man aged 37, reading online newspapers had saved some of his ringgit and cent from his pocket money. Moreover, he really appreciated the technology since he could read a variety of online newspapers; be it in Chinese, Malay, or English.

The second part of the questions that related to perceived control required the respondents to give their perspective on the importance and their readiness of acquiring ICT skills and knowledge. Amazingly, almost all respondents (96.3%: 26 out of 27) agreed that an individual should obtain ICT knowledge in today's globalization era. This response corresponds to the feedbacks gathered from the other two questions, where almost 90.0% (24 out of 27) of them willing to learn new computer software or applications and slightly more than 80.0% (22 out of 27) were ready to spare sometimes in attaining the related knowledge. Five respondents refused (18.5%: 5 out of 27) to spend time learning ICT because four of them claimed that they were busy and another, a 21 years old student, said that she was a slow learner. The earlier reason seemed consistent since these respondents; the 54 years old mechanic, 33 years old farmer, 36 years old businessman, and 69 years old pensioner; were all tied up with various commitments. Apart from being busy, the pensioner admitted that he did not see the need of learning new computer applications

The key reason given by most respondents was the importance of being in line with the technology development so that they would not be marginalized in grabbing valuable opportunities offered. Among the rationales presented were to be more competitive in job market, business management, or academic; to facilitate daily matters and responsibilities; and to achieve the government aspiration of becoming developed communities. In other word, their answers generally focused on the importance of being ICT literate and knowledgeable in assuring a better future. For

instance, the young housewife was so keen to learn about ICT especially the Internet in order to be more competitive in assuring job placement:

> *"Teringin sangat nak mempelajari kemudahan Internet. Untuk menambah ilmu pengetahuan. Sementara saya belum bekerja…untuk menambah kemahiran dan pengetahuan ICT bagi menjamin peluang untuk mendapat pekerjaan"*

The same view was shared by a secondary school leaver who stated that being ICT knowledgeable would be an advantage for her as preparation towards academic excellent if she were to enroll in higher learning institution:

> *"Untuk mengisi masa cuti. Dunia semakin maju, kebanyakan urusan melibatkan penggunaan ICT dan yang penting untuk memastikan ilmu ICT dapat membantu dalam aktiviti pembelajaran di IPT nanti"*

As for the young Internet marketer, besides of his great interest in the technology, he obviously would not want to ignore the potential of utilizing his programming skills in involving himself in related activities so that he could generate another source of income:

> *"Berminat dengan teknologi terkini. Tidak mahu ketinggalan terutamanya dari segi persaingan untuk merebut peluang perniagaan*

terutamanya apabila bidang pengaturcaraan komputer ini akan dijadikan sebagai sumber pendapatan. Setakat ini belajar sendiri"

Nevertheless, many of them stressed that they need to keep up-to-date with the technology so that they could use it to facilitate their daily routines and duties. This is what described by the ex-factory executive:

"Untuk merebut peluang menambah pendapatan terutamanya apabila ICT dapat membantu dalam urusan harian dan perniagaan. Terutamanya yang dapat membantu urusan perniagaan seperti pembangunan blog"

As for two teenagers and a businessman, they were always ready to learn new computer software or applications because they realized the importance of ICT in facilitating their daily matters. This is their remark:

"Untuk mencuba sesuatu yang baru. Untuk menambah ilmu pengetahuan terutamanya pada masa kini kebanyakan urusan menggunakan ICT"

A 34 years old housewife revealed that her ICT knowledge needs to be continuously improved so that she would able to use the latest version of computer systems or applications:

"Kita harus mengetahui kaedah yang terkini untuk menggunakan komputer"

4.5.2.2 Self-efficacy

Majority of the Balik Pulau respondents (77.8%: 21 out of 27) acknowledged that ICT could function as a valuable source of reference. This is primarily due to the convenience of accessing information from the Internet. Even though ICT was only helpful in solving certain matters; they were still relying on the technology in getting immediate answers to any inquiries since the principal function of the Internet was to connect people and information anywhere anytime. The following is a basic example of the "connection" as stated by a 37 years old self-employed man:

"If you have any enquiries, you can ask through e-mail or the company website, customer service page"

One respondent described in details his approach of using Internet in solving problems:

"Sekiranya kurang pasti tentang sesuatu, selalunya membuat carian melalui search engine, juga mendapat khidmat nasihat/kepakaran melalui teman siber, juga merujuk ke laman web yang menyediakan tips untuk penyelesaian masalah"

In addition, a woman was grateful that ICT provides alternatives in doing business especially for those who were striving to generate their income:

> *"ICT menyediakan cara alternatif untuk menjalankan perniagaan, juga untuk memberi banyak peluang untuk mendapat pekerjaan. Dalam ekonomi yang kurang memberangsangkan, saya baru sahaja diberhentikan kerja ...jadi saya beralih untuk menumpukan kepada bidang perniagaan. Kebanyakan urusan dikendalikan melalui penggunaan Internet (blog)"*

Unfortunately, in answering the second question under the self-efficacy factor, *"Do you feel comfortable using the computer/Internet in the PID on your own? Why?"*, most respondents (59.3%: 16 out of 27) failed to state relevant answers due to their misinterpretation of the question asked. Instead of indicating whether they were at ease while using computer and Internet on their own, they were describing the comfort that they felt while in the PID. These are examples of such responses:

> *"Jika saya tidak memahami, saya boleh bertanya pekerja di PID"*

> *"Fast and always available"*

> *"Privacy"*

Nonetheless, for the nine respondents who managed to understand the question well, six of them revealed that they felt comfortable using the technology because some of them had acquired the necessary basic computing skills. Moreover, some of them had been using computer for quite sometimes. Three of them who still feel uncomfortable declared that they have a lot more to learn and improve. In fact, a 47 years old security guard revealed that there must be an ICT instructor besides him every time he used the computer at the PID.

In terms of electronic services or applications, only 13 respondents had the experience of using such services. Efficiency and effectiveness were the main reasons of them using the services. For example, the ex-factory executive was happy that such services were easy to use and best of all it helped her to save her the time of physically going shopping:

> *"Mudah, hanya perlu faham arahan yang diberikan, buat belian melalui Internet dan isi borang ... cara pembelian menjimatkan masa, tidak perlu ke kedai"*

Besides effectiveness, efficiency, and time saving, the Internet marketer added that he trusted the process of online transactions:

> *"Mudah dan cepat dalam semua urusan. Mudah, boleh dipercayai (i.e. membuat pembayaran)"*

Remarkably, the 47 years old security guard used the online services as alternative to look for extra income, while two unemployed young women, aged 19 and 21, insisted that they had used the online services because they were enthusiastic in trying something new.

Out of the 12 respondents that never used the online services, only four of them specified their reasons. While the others, an 18 years old unemployed woman, the pensioner, and the young housewife, said that they did not know how to go about using the services, the 33 years old farmer bluntly declared that he did not trust the security factors in the PID.

The last question under the self-efficacy factor concerned with the content of one's blog or websites. This particular question was to be answered by those who had never developed his or her own website or blog. From the 19 respondents, nine declared that they were not interested in or thinking of developing any website or blog. Out of these, only one specifically mentioned that he did not have the skill. Nevertheless, for those who wish to have their own website or blog indicated that they would write on these issues; personal achievements (3), business (3), career (2), and sport (1). The other person, a 34 years old entrepreneur with a master degree, was being too ambitious by announcing that he would write about everything under the sun.

Under the business issue, the ex-factory executive was very passionate about having her own blog that would highlight on the achievements of local women entrepreneur

in the community so that it would motivate other women to follow their footsteps. In fact, she added that she already had set up plan to develop a blog for one of her social clubs. This is her statement:

> *"Blog untuk persatuan ushanita yang menyenaraikan usahawan wanita yang berjaya di sekitar dan luar Balik Pulau"*

The only respondent who chose sport as the main issue for her website or blog was a teenage girl. She mentioned that she wanted to provide and share information about her favourite football team.

4.5.2.3 Competence

This section describes the ICT competency level of the respondents based on the responses from the four questions presented to them. The first question was, *"Have you ever downloaded any application/software from the Internet? Why?"*. The responses gathered for this question showed that almost half of the respondents (48.1 %: 13 out of 27) admitted that they had tried attempting the downloading process from the Internet. Unfortunately, only one of them mentioned the advantage of using such process, which was free, time and cost saving, and easy. The rests simply stated reasons of using such process. For example, five of them, aged between 18 and 26, used the downloading process for learning purposes. The Internet marketer even specifically denoted the type of application:

"e-book: Menjimatkan masa, cuma tempah, buat bayaran kemudian download & terus baca melalui komputer"

On the other hand, a 30 years old self-employed woman usually downloaded materials from the Internet not only for her own collection but also for her customers. The others stated that they the downloaded materials and software were for their personal usage. For those who had never downloaded anything from the Internet claimed that they either do not know how to or they do not have the need to do so.

In terms of computer maintenance, which was the second question presented under the competence factor, only five respondents (18.5%) claimed that they had such capability. As expected, the Internet marketer who had strong programming skill also possessed other technical skills based on his response:

"Software installation (operating system, virus, printer, etc.), disk and computer formatting, and some technical problems…Baikpulih komputer"

When asked whether they understand most of the terms or words related to computer hardware and software, one did not state her answer, while 14 of them (51.9%) said YES primarily because they had been using computers and its applications for quite sometimes. For those who had the difficulty in understanding such terminologies said so specifically because they had limited knowledge in ICT since they were new

learners. In addition, one of them had never gone through any formal ICT class. Surprisingly, a teenage girl said that she did not care on the matter.

The last question on the competence factor was *"After participating in the training programs offered by the PID, can you consider yourself as ICT literate? Why?"*. This time, majority of the respondents (85.2%: 23 out of 27) admitted that they were ICT literate. Although seven of them did not spare their rationales, the others stressed on the fact that they had attended computer classes or trainings before, they know how to use computer and Internet. In addition, three women were pleased to discover that their ICT knowledge and skills had improved gradually. An unemployed young girl and a housewife, aged 18 and 34 respectively, revealed that they knew more about ICT than before. While the ex-factory executive was delighted that she had improved her skills in using Microsoft Office packages and Internet. For those (4 out of 27) who considered themselves as ICT illiterate, only one said that he never had the chance to learn.

4.5.2.4 Motivation

This section describes the motivation factor of empowerment intrapersonal construct of the Balik Pulau respondents. Table 4.16 listed the intrinsic and extrinsic motivation factors of the respondents. The intrinsic motivation factors include: 1) using the ICT facilities; 2) learning and to use computer and Internet; and 3) filling spare time. On the other hand, the extrinsic motivation factors comprise of 1) free/minimum service charge; 2) friendly operators; and 4) comfortable place.

Table 4.16: Motivation Factors

Types	Factors	Total Responses
Intrinsic	using the ICT facilities	19
	learning to use computer and Internet	10
	filling spare time	9
Extrinsic	free/minimum service charge	15
	friendly operators	12
	comfortable place	8

Table 4.16 portrays that most respondents (19 out of 27) came to PID because they wished to use the ICT facilities provided at the centre. Their desire was driven by the realization that the world had changed and developed due to the advancement in the technology. Therefore, by any means they had to make sure that they would always keep up with its development since the technology provides an alternative and convenience information resources, communication, and business transactions platforms. For instance, seven of them use the Internet to look for job, business, and academic opportunities. One respondent stated his gratefulness of not only being able to expand his business through the Internet, but also to improve his technical ability:

> *"Menjana sumber pendapatan ..... untuk mengembangkan perniagaan serta berkongsi maklumat dan kepakaran, juga untuk menambah kemahiran teknikal. Misalnya saya banyak belajar kemahiran programming melalui Internet"*
>
> *(To generate source of income ..... to expand business and share knowledge and expertise, and also to improve technical skills. For*

example, I learned a lot about programming skills through the Internet)

A businesswoman also shared the same experience:

"ICT sebagai satu platform untuk memperkenal atau mempromosi perniagaan yang diceburi"
(ICT as a platform to introduce or promote my business)

In addition, some of the respondents came to centre to perform their business, office, or personal matters. For example, an unemployed man, aged 37, said that he loved to visit the centre because it was equipped with latest version software that he can use to perform his tasks. This is his comment:

"Completed and updated important useful software"

To illustrate the intrinsic factor of "learning and to use computer and Internet", out of the ten respondents that purposely came to the PID to learn ICT, a young housewife spoke out her wish to learn about computer usage:

"Teringin belajar tentang penggunaan komputer ..... untuk mendapat pengetahuan bidang ICT"

During the interview session, she showed her enthusiasm of learning computers because she wanted to use her ICT skills in looking for jobs or other opportunities so that she could support her family income. In fact, she also realized the importance of ICT in today's world. Therefore, she would not miss the opportunity of getting and improving her ICT knowledge especially when she could easily visit the centre during her free time. This is her additional remarks:

> *"Untuk mencari pekerjaan dengan mudah. Ingin belajar komputer untuk mencari pekerjaan. Umur masih muda jadi kalau ada sijil komputer akan ada kelebihan dari segi persaingan, walaupun telah berumahtangga tetapi keinginan untuk bekerja masih ada sebab ingin membantu menjana pendapatan keluarga"*

Likewise, another example of learning and to use computer, the ex-factory executive said that since she had been laid off from her work, she would always make sure that every morning she would come to the centre to learn more about ICT. She had to discipline herself especially when she was now trying to develop her own blog to accommodate her preparation of promoting her new business through the Internet:

> *"Kursus yang ditawar menarik (i.e. membangunkan blog) ..... memberi kemudahan untuk menjalankan urusan perniagaan"*

Her effort and dedication become evident when her three years old daughter was there with her at the centre. Besides getting more ICT knowledge, she also added

that she usually visit the centre to use other facilities such as fax and photocopy machines. During that time, she was preparing a formal letter, which she needed to fax to an agency on that same day. Even though, she looked busy, she still spared her time to join in the interview session. This is also quoted during the interview:

> *"Selain kemudahan komputer ada kemudahan fax dan Photostat ..... memberi kemudahan untuk menjalankan urusan perniagaan"*

Those who chose to come to the centre during their spare time did that because they could built up their social networking circle by registering as PID memberships and the social entrepreneur club members. However, a teenage girl said that it was convenient for her to come to the centre every day since her father was working at the post-office. After all, she had a lot of free time because she was waiting for her higher institution application result. At the same time, she could also improve her computer skills:

> *"Dapat mengisi masa lapang serta dapat menambah kemahiran penggunaan komputer demi memenuhi masa lapang sementara menunggu keputusan untuk melanjutkan pelajaran ke IPT"*
> *(To fill up my free time and to improve computer skill while waiting for my higher institution application result)*

As for the extrinsic factors, cost of using the ICT related services in the PID was the main reason highlighted by most the respondents (15 out of 27). The respondents

mentioned for those who registered as PID members, they can use the computer and Internet for free. Otherwise, they only have to pay a lower charge of RM2.00 per hour compared to that at the other cyber cafes. Usually those cyber cafes would charge between RM3.00 to RM3.50 per hour.

Human factor is the second important factor in getting the community to participate in the PID activities. This was obviously supported by twelve respondents that described the personality and characteristics of the PID operators as charming, friendly, and helpful. Another attraction of coming to the PID was related to the comfort they experienced while at the centre. Eight respondents agreed that the centre was much comfortable compared to the other cyber centres within the vicinity. Most of them mentioned the cleanliness and noisiness aspects. In addition, a 42 years old businesswoman was very glad that the centre turned out to be a place where she could meet up with other local business counterparts:

> *"PID is a place where I can meet most of the Balik Pulau businessmen/women"*

Finally, in answering the last question, *"What makes you decide to use the information and communication technology (ICT) in your daily life? Is this your own decision?",* all respondents were being motivated in using ICT because they realized that the world had changed and developed due to the advancement in the technology. Therefore, by any means they had to make sure that they would always keep up with its development since the technology provides an alternative and convenience

information resources, communication, and business transactions platforms. For instance, some of them (25.9%: 7 out of 27) use the Internet in looking for job, business, and academic opportunities. Amazingly, the Internet marketer was grateful that he could not only expand its business through the Internet, but also his technical skills:

> *"Menjana sumber pendapatan ..... untuk mengembangkan perniagaan serta berkongsi maklumat dan kepakaran, juga untuk menambah kemahiran teknikal. Misalnya saya banyak belajar kemahiran programming melalui Internet"*

The ex-factory executive also shared the same experience:

> *"ICT sebagai satu platform untuk memperkenal atau mempromosi perniagaan yang diceburi"*

4.5.3 Research Question 2: How Do Interactional Factors Reflect the Empowerment of PID users?

This section describes the responses given by the Balik Pulau PID users in answering the second research question of this study. The description is based on the four factors of interactional constructs of individual empowerment, which are critical awareness, decision-making skill, problem-solving skill, and leadership skill.

4.5.3.1 Critical Awareness

This section describes the awareness level of the PID users by determining their responses regarding the establishment of the PID in their community. Most respondents (63.0%: 17 out of 27) knew about the PID from their relatives and friends. Four of them accidentally found out about the centre during their visit to the post-office, while the other three were aware of its existence because the centre was located nearby their homes. The rest discovered through various media channels such as the Internet, promotion made by the PID staff, and banner posted at her neighbourhood respectively.

Table 4.17 presents the list of the services offered at PID as pointed out by the Balik Pulau respondents. The list indicates that most of the respondents were aware of the availability of the computer training classes, access to Internet, and printing services. For the computer maintenance service, from the observation, it was found out that the centre do have a voluntary computer technician that usually comes during his free time.

Table 4.17: Services in the Balik Pulau PID

Services	Total Respondents
Computer classes	24
Internet	23
Printing	21
Consultation services	17
Computer maintenance	12
Computer sales agent	7

Fax	2
Scanning	2
CD burning	1

As for the computer trainings (Table 4.18), the most popular attended by the respondents was the basic computer class which included the teaching of the Microsoft Office Packages (not including Access). Other trainings included: 1) the website or blog development; 2) Internet usage; and 3) networking. All respondents admitted that the trainings were conducted by the supervisor and her assistants. However, four respondents did not specify the trainings that they had participated. Another six respondents did not get their computer training from the centre; and one did not state his answer. While a business entrepreneur mentioned that he could easily get whatever computer related training that he wanted from the centre as long as there were demand and requests, the mechanic refused to take part in any of the offered trainings because he hated the supervisor in charge.

Table 4.18: Training programs in the Balik Pulau PID

Trainings	**Total Respondents**
Computer classes	10
Website/blog	5
Internet	2
Network	2
CD burning	1

When asked to state their reasons of using the services and participating in the trainings offered by the PID, only six respondents (22.2%) were aware of the

importance of getting ICT skills and knowledge in improving their lives. Two of them admitted that having ICT certificates provides a better chance in competing for academic excellent and job placement. The following are quoted from two respondents:

> *"Dengan adanya asas ICT senang untuk mendapat pekerjaan di masa depan sebagai persediaan untuk melanjutkan pelajaran ke IPT"*

> *"Untuk mencari pekerjaan dengan mudah. Saya ingin belajar komputer untuk mencari pekerjaan ..... kerana umur saya masih muda jadi kalau ada sijil komputer akan ada kelebihan dari segi persaingan. Walaupun telah berumahtangga tetapi keinginan untuk bekerja masih ada sebab ingin membantu menjana pendapatan keluarga"*

On the other hand, two respondents stressed that they need to continuously improve their computer skills and knowledge so that they can conduct their business through the Internet more effectively. Other responses gathered were factors related to the usage charge, operators, and infrastructure.

4.5.3.2 Decision-making Skill

All Balik Pulau PID respondents admitted that the decision of using ICT was made by them. This indicates that they were aware of their stance regarding the use of the technology. In addition, they also stated the various computer applications that they

mostly used while they were at the PID. Most of them (66.7%: 18 out of 27) came to the centre to use the Internet for several intentions such as searching for information, communicating, and reading news. The other six of the respondents mentioned that they usually used the Microsoft Office Package applications which include the word processor (Microsoft Word), electronic spreadsheet (Microsoft Excel), and presentation (Microsoft Power Point). Their answers were basically due to the fact that they were still attending the computer training sessions at the centre. Unfortunately, the other three respondents did not specify their answers.

Majority of the respondents (66.7%: 18 out of 27) had never tried to develop their own website or blog due to several reasons: lack of related knowledge and skill, busy, and not interested. The rest of the respondents had developed their own business websites and personal blogs. Those who owned business websites were very excited that they could promote their product to a wider market which eventually would help them to generate more income. On the other hand, those with personal blogs loved the fact that they could share their knowledge and experience with others. Moreover, they were also looking for new friends and supporters.

Out of the 27 respondents, only four of them disagreed with the fact that ICT knowledge helped them to become a wiser decision-maker and problem solver. One of them was the 54 years old mechanic who sternly stressed that knowledge in ICT does not necessarily make you a better decision-maker. This is his statement:

"Problem and decision are not decided by ICT knowledge"

For those who declared that their ICT knowledge had helped them to become wiser decision-makers and problem-solvers did so because they could easily find numerous sources of information from the Internet in dealing with their difficulties. Besides improving their knowledge in various areas, they could simply cross check that information and make some evaluations before deciding the best outcome or solution. For example, an 18 years old teenager was saying that it was much easier and faster to search for college information through the Internet rather than elsewhere. This would also assist her in choosing the best college for her to continue her study. This is the remark quoted from her:

> *"Maklumat tentang peluang melanjut pelajaran (ke kolej) mudah diperolehi ..... seterusnya memudahkan saya untuk membuat keputusan"*

Her statement was also supported by another respondent who had just finished her pre-university (matriculation) program. Another female respondent described her view on how ICT helped her becoming a better decision-maker:

> *"Sesuatu keputusan yang ingin dibuat akan merujuk kepada google, serta pandangan-pandangan lain melalui pelbagai website lain, seterusnya membuat penilaian yang teliti. Kebaikannya, terdapat pelbagai sumber maklumat"*

(Any decision to be made would refer to google and other views from other websites, so that detailed evaluation could be conducted. The advantage is that there are various information resources)

4.5.3.3 Problem-solving Skill

This section describes the ways respondents handled problems or challenges related to the use of ICT as experienced by them. First of all, they were required to describe the approach that they used in coping with barriers or obstacles they faced while using the PID. In addition, they also need to specify on how ICT could help them in solving their problems.

Insufficient number of computers seemed to be the most prevalent hindrance (44.4%: 12 out of 27) to the respondents while visiting the PID especially during peak hours. Instead of waiting and queuing for available PCs, these respondents would either go to the nearby cyber cafes, go back home or bring their own laptops. For those who were not satisfied with the Internet connection, which sometimes slow, could only stay and used the Internet patiently after informing the centre's supervisor. Other difficulties regarding the PID include small space, lack of ICT understanding, operation time limited to office hour, and some PCs did not support Chinese language.

Regarding their reactions towards any problem confronted while using computers, majority of the respondents (81.5%: 22 out of 27) would directly referred to the supervisor in charge or someone who were knowledgeable and skillful. However,

there were some of them (14.8%: 4 out of 27) who would try to resolve the problems by themselves. If the problems continue, then only they would seek help from the supervisor or the technician. Nevertheless, three of them admitted that they would shut down or restart the computer if there was no help available.

4.5.3.4 Leadership Skill

This section portrays the leadership skill of the participating respondents. The skill refers to one's ability in guiding, directing or influencing people to perform various tasks or activities. In this study, the PID users were asked to share their strategies in handling three issues: 1) encouraging and attracting more participation from the local communities to use the PID facilities; 2) appointment as ICT instructor; and 3) appointment in any of the local community committees. Based on the three questions posed to them, the respondents were required to share their strategies in highlighting their leadership ability.

In order to encourage and attract more participation from the local communities in using the PID facilities, most respondents had come up with the following propositions: to continuously inform others in the community regarding the ICT benefits, and to request the PID administrators to carry out more aggressive promotions and create more attractive services and activities. In terms of spreading the good side of ICT to the local communities, seven of the respondents indicated their willingness and determination. For example, the ex-factory executive was very determined to unfold the opportunities offered through ICT to her women entrepreneur association:

"Sebagai usahawaniaga, perlu ambil peluang dengan kemudahan yang ada di PID, oleh itu akan menceritakan mengenai perkhidmatan yang disediakan (selain penggunaan komputer termasuk cetakan bewarna), harga perkhidmatan yang murah, dan kebaikan menggunakan komputer (i.e. peluang untuk mempromosikan perniagaan melalui Internet (blog))"

Likewise, a 42 years old business woman also insisted that she shall never give up in telling people about the advantageous of participating in the PID activities:

"I'll keep telling people about all the facilities they have and all activities they organize that can benefit most fresh graduates and business community"

In terms of the promotions and attractive activities, almost half of the respondents suggested these: 1) to place more banners in the local township; 2) to distribute pamphlets to various neighbourhoods within the community; 3) to regularly organize awareness program; and 4) to conduct business workshops.

When asked whether they were ready to become ICT instructor, only ten of the respondents demonstrated their eagerness for a genuine reason: to share knowledge and skills so that other people could also be successful. On the other hand, for those who refused to become ICT instructors, seven of them mentioned that they still need

to improve their ICT skills and knowledge; two had other obligations, while the rests failed to specify their decisions.

Finally, in terms of their appointments in the any of the local community committees, barely 22.2% of the respondents revealed that they had been offered such responsibility. Unfortunately, only three of them mentioned their respective posts: as the committee member and the secretary of the PID Social Entrepreneur Club and as the member of housing committee. Those who had not been offered any responsibilities were thankful because they had their own justifications. For example, two of them frankly admitted that they were busy with their works, three were not interested, and five needed to learn more. Interestingly, one respondents seemed frustrated by saying that he had never been nominated in any committee appointment.

4.5.4 Research Question 3: How Do Behavioural Factors Reflect the Empowerment of PID users?

This section describes the responses given by the Balik Pulau PID users in answering the third research question of this study which focused on the two factors of the behavioural construct; coping, and participation.

4.5.4.1 Coping and participation

Based on table 4.19, the respondents that had been faithfully visiting the Balik Pulau PID for more than two years was only 33.3%, while the newcomers consist of slightly more than fifty-five percent. Surprisingly, only two of the newcomers

usually dropped in on the PID more than 8 times in a week. Another six of them typically spend their time at the PID between 1-2 times in a week, while five of them between 3-5 times. Four of them would only be at the centre when required. These newcomers mostly came to the PID to attend their computer training sessions.

In contrast, half of those who had been going back and forth to the PID for more than two years still spend more than four times a week in the centre with various purposes mainly looking for information.

Table 4.19: The PID Usage

		Frequency	**Total Respondents**
PID Usage	Less than a year	15	27
	1-2 years	3	
	More than 2 years	9	
Frequency of Usage	Only when required	7	27
	1-2 times	6	
	3-5 times	10	
	6-8 times	0	
	> 8 times	4	
Purpose of using PID	Homework/Assignments	5	
	Office chores	4	
	Business chores	13	
	Computer training	12	
	Reading news	6	
	Communication	11	
	Playing games	0	
	Entertainment	3	
	Information searching	16	

4.5.5 Observation on Balik Pulau PID

This section presents some of the observations made at the Balik Pulau PID. Similarly, the visit to the Balik Pulau centre was carried out two times. The visit was on Friday. In the early morning, there were only a few users coming to the centre. However, the number started to increase after 10 a.m. During that time, three teenage girls were attending a computer class. Even though, the class session was on, other users can still come in to use the available computers as long as they did not make any noise or disturbance. A young man seemed to be engrossed with his work, when he was really concentrating browsing through the Internet. Once a while, he was seen to chatting through the Yahoo Messenger. The way he was using the computer, it looked like he was very comfortable with it. Another Malay woman in late 30s was using the Microsoft Word application, and a Chinese woman in her 40s seemed to be searching for some information through the Internet. Half an hour later, a friend or relative joined her at the centre.

The above scenario indicated that these four users had already possessed the necessary ICT skills and knowledge since they could use the various applications on their own. Therefore, it can be concluded that in terms of the intrapersonal factors of empowerment, these four users did demonstrate their characteristics related to perceived control, self-efficacy, competence, and motivation particularly when they were able to use the computer and Internet to carry out their individual tasks and routine matters. However, for the three teenagers who were attending the computer class, their actions obviously indicated that the already attain perceived control since they were willing to spend their times learning and improving their ICT skills and

knowledge. Each of them must have individual intentions in acquiring those skills. Indirectly, they were full with motivated to engage themselves in such activities. Most importantly, the fact that the three teenagers remained at the centre even after their class session ended showed that they were really determined in learning and using ICT. For example, two of them were practicing their lesson while the other was browsing through the Internet looking for higher institution information prospectus. The supervisor mentioned that the girls usually stayed on if there were not many people around. One of them came in every day since she followed her father who was working at the post-office. Having these two traits, perceived-control and motivation, these teenagers will surely progress towards the other intrapersonal traits, self-efficacy, and competence, once they had succeeded in completing their computer trainings.

At the administrative area, the supervisor assistant was busy attending other users who came in to do some printings and to ask about the entrepreneurship activities organized by the PID. There were a few pamphlets about the PID activities on the front desk. According to the PID supervisor, besides the PID website, she had also created a blog purposely to tackle on the entrepreneurship activities so that those who were interested could be updated with the latest information and programs. However, only a few of them would interact online via the electronic mail. Others would either come or make a phone call to the centre if they wanted to know more about any activities or posting in the blog. Sometimes, the supervisor wondered the reason of them not using the e-mail.

4.6 Summary of the Chapter

This chapter describes the findings of an in-depth of PID users' empowerment using interpretive analysis. The chapter is organized according to each separate cases of the three PID. The data is gathered from three methods of data collection, which include interviewing, observation, and documentation review. Each case begins by introducing the PID background. The description is followed by explaining the profile of the respondents that have participated in the study. The case is then described based on the three individual empowerment construct; intrapersonal, interactional, and behavioural in order to answer the three research questions posted in Chapter One.

In terms of the intrapersonal factors of the empowerment construct, the finding indicates that by coming to the centre during their leisure time, the Kuala Nerang users managed to gain the ICT skills and knowledge that facilitate them in problem solving and handling their routines or daily activities. They also admitted that the Internet offers them with various opportunities in business, and career. Similar trend is shown by the Simpang Empat and Balik Pulau PID users. However, users in Simpang Empat and Balik Pulau added that they have succeeded in achieving social their social well-being whereby they are more aware of local and international matters especially in updating themselves in technology advancement.

For the interactional factors, all users from the three PID are aware of the importance of acquiring ICT skills and knowledge especially in competing for academic excellence and job placement and conducting online business. They obviously

demonstrate their decision making and problem solving skills by admitting that ICT do support them in problem solving and decision making particularly for those who are able to handle their problems especially when they come across any barrier or obstacles during their visit to the PID. In addition, some of them manage to develop their own personal or business websites or blogs. However, those who currently do not have their websites or blogs express their determination in developing such skill so that they will be able to have one soon. Similarly, only a number of users from all the three PID genuinely show their interest in accepting responsibility. For example, even though most of them willing to become the spokesperson for the centre in terms of spreading the importance of using ICT for the local communities, they are not ready to become ICT instructor or to be part of any committee member not only in the PID but also in their community.

In terms of the behavioural factors of empowerment, the findings indicate that the users from the three PID have shown their commitment with the activities and services provided by the centre where most of them have participated in the PID for more than one year.

CHAPTER FIVE
CROSS CASE ANALYSIS

5.1 Cross Case Analysis of Kuala Nerang, Simpang Empat and Balik Pulau PID

This section presents the data across all of the above three PID cases in order to identify similarities and differences in terms of the role of intrapersonal, interactional, and behavioural constructs in empowering the users of telecentre. By identifying similarities and differences, further insight into issues concerning the telecentre users' empowerment can be provided by generalizing the case study results (Figure 5.1). Based on the theoretical framework (as discussed in Chapter 2), meaningful sense of data is able to be generated. The theoretical framework of this study consists of the conceptual model of psychological empowerment of PID user. This framework is used as a template for comparing and generalizing the empirical results of the three cases. Studying multiple cases makes it possible to build a logical chain of evidence (Yin 1994; Miles and Huberman 1994). The cross-case analysis is use to seek a chain of evidence for the relationships studied on the basis of the framework. The relevant issues concerning the telecentre users' empowerment relate to the research questions, as formulated in Chapter 1:

a. How do intrapersonal factors reflect the empowerment of PID users?
b. How do interactional factors reflect the empowerment of PID users?
c. How do behavioural factors reflect the empowerment of PID users?

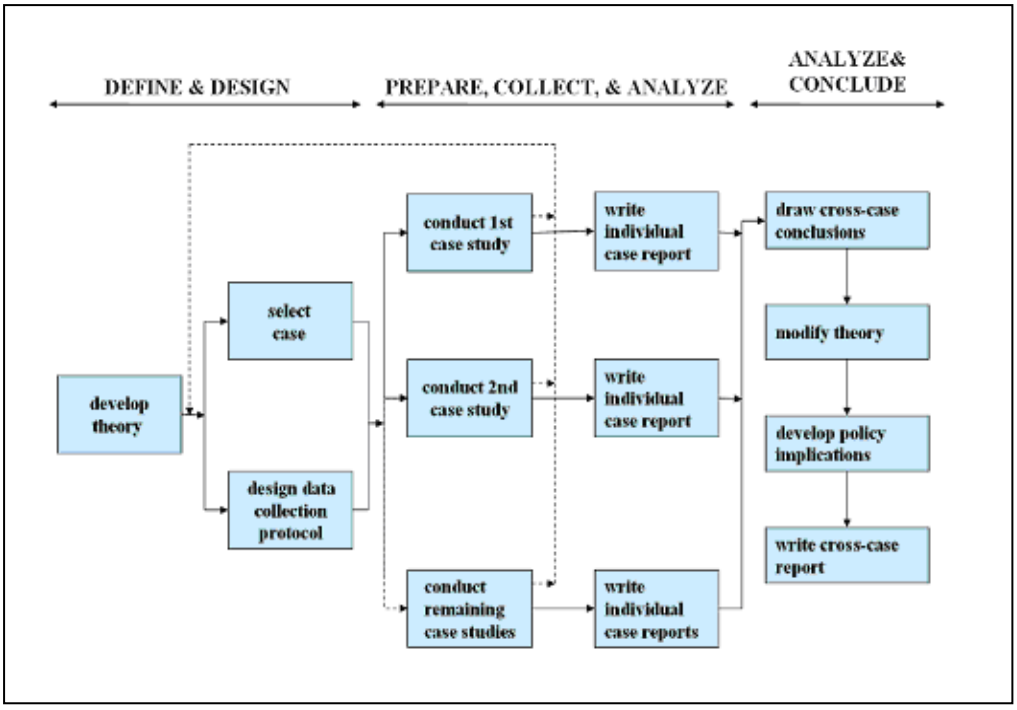

Figure 5.1: Multiple Case Study Method

(Source Yin: 2003)

5.1.1 Intrapersonal Factors of Empowerment

This section describes the intrapersonal factors as revealed by the respondents from the three cases; PID Kuala Nerang, Kedah, PID Simpang Empat, Perlis, and PID Balik Pulau, Pulau Pinang (Table 5.1). The findings from all the cases indicate that having ICT skills and knowledge bring about positive change to the users' quality of life and social and economic well-being. The first intrapersonal factor, perceived control, is concerned with users' reactions towards improving their socio-economic well-being. For example, almost all the respondents (92.3%: 72 out of 78) from the three PID recognized the importance of acquiring ICT skills and knowledge. The respondents in Balik Pulau in particular did mention that by acquiring ICT skills and knowledge, they are able to grab opportunities, become more competitive, and explore new knowledge. This will open opportunities for new business and career

and in turn generate new sources of income. Respondents from Kuala Nerang were also found to have the same opinion about this. In addition, the respondents in Balik Pulau and Simpang Empat PID were saying that they succeeded in achieving social well-being whereby using Internet technology they can improve their general knowledge on local and international matters. Furthermore, they were able to comprehend materials written in languages other than their mother tongue. The respondents from Balik Pulau PID also indicated that by using Internet technology they can easily be acquainted with new friends. Most importantly, respondents from Simpang 4 and Balik Pulau PID stated that they wanted to make sure that they will always be updated with technology advancement. These provide alternative opportunities for socio-economic development. In terms of economic well-being, the respondents in Balik Pulau and Kuala Nerang asserted that they are able to use ICT as an alternative medium to generate income and become more competitive.

Table 5.1: Cross Case Analysis on the Role of Perceived Control in Users' Empowerment at Telecentres

Intrapersonal Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Perceived Control	• Internet offers business and career opportunities • Achieving efficiency • Improve ICT skills and knowledge	• Acquiring ICT skills and knowledge • Achieving efficiency • Acquiring and broadening new knowledge • Keeping up-to-date with technology development	• Acquiring ICT skills and knowledge o Ability to access information from Internet o Ability to grab opportunities offered through internet o Ability to generate source of income o Ability to be more competitive (job recruitment/placement /promotion & studies in college) o Ability to have

			continuous learning (exploring new things/knowledge) ○ Ability to get acquainted with old and new friends ○ Ability to read online newspaper in various languages • Keeping up-to-date with latest local and international issues • Keeping up-to-date with technology development • Achieving efficiency

In term of self-efficacy, the second intrapersonal factor that focuses on users' performance after acquiring ICT skills and knowledge in achieving a desired goal, the findings point out that 84.6% (66 out of 78) of the respondents from the studied PID agreed that the use of Internet facilitates problem solving and routine matters (Table 5.2). For example, the Internet has become their additional source of reference. Internet also enables them to be connected conveniently with others and to get instant response for any enquiries. With ICT skills and knowledge, respondents from the Balik Pulau PID have the ability to conduct business online. This will give them the opportunity to improve their economic well-being. The respondents also admitted that such capabilities would eventually support them in achieving efficiency and effectiveness.

Table 5.2: Cross Case Analysis on the Role of Self-efficacy in Users' Empowerment at Telecentres

Intrapersonal Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**

Self-Efficacy	• Facilitate problem solving and routine matters	• Facilitate problem solving and routine matters
		• ICT skills and knowledge improvement
			• Facilitate problem solving and routine matters
			  ○ Internet acts as source of reference
			  ○ Connectivity (ability to get instant response)
			• Achieving efficiency and effectiveness
			• Ability to conduct online business

The third factor, competence relates to users' understanding and capabilities on the technical aspects of ICT. The relationship between competence and socio-economic well-being is not as obvious as of perceived control and self-efficacy. However, competence is very important, as competence will determine the users' level of commitment in using ICT towards improving their socio-economic well-being. The findings suggest that there is willingness among users (96.2%: 75 out of 78) in acquiring new ICT skills and knowledge and willingness to go all out in spending needed resources for that (Table 5.3). To be competent, respondents from all PID realized that ICT literacy and technical skills are important. In this study, the prominent technical skills indicated are the ability to handle the downloading process and computer maintenance.

Table 5.3: Cross Case Analysis on the Role of Competence in Users' Empowerment at Telecentres

Intrapersonal Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**

Competence	• ICT literate
	• ICT technical skill
		• ICT literate
		• ICT technical skill
			• ICT literate
			• ICT technical skill
			  ○ Ability to handle downloading process
			  ○ Ability to handle computer maintenance

The last factor, motivation concerns with the inner causes that drive the users to use ICT in improving their socio-economic well-being. Motivation to use ICT is driven both by intrinsic and extrinsic factors. The findings show that the respondents from all PID opted for spending their spare time in the centre to learn ICT and use the ICT facilities (Table 5.4). Apart from those inner factors, some of the respondents from the three PID also admitted that free or minimum service charge (60.3%: 47 out of 78), friendly operators (29.5%: 23 out of 78), and comfort (43.6%: 34 out of 78) were other reasons that dragged them to come to the centre. This will then let them gain competence in ICT.

Table 5.4: Cross Case Analysis on the Role of Motivation in Users' Empowerment at Telecentres

Intrapersonal Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Motivation	• To fill users spare time • To learn to use computer and Internet • To participate in computer certification program • Friendly operators	• To fill users spare time • To learn to use computer and Internet • To use ICT facilities • Free/minimum service charge	• To use ICT facilities • To learn to use computer and Internet • To fill users spare time • Free/minimum service charge

	• Free/minimum service charge	• Comfortable place • Friendly operators	• Friendly operators • Comfortable place

5.1.2 Interactional Factors of Empowerment

The description of the interactional factors of the respondents from the three cases; PID Kuala Nerang, Kedah, PID Simpang Empat, Perlis, and PID Balik Pulau, Pulau Pinang is based on the four factors of interactional constructs of individual empowerment, which are critical awareness, decision-making skill, problem-solving skill, and leadership skill. The interactional construct of psychological empowerment concerns with how people analyze and understand their external conditions including social and political environment (Zimmerman, 2000). Regarding the telecentre users in rural areas, critical awareness refers to their awareness level regarding the establishment of the telecentres in their neighbourhood. The findings from all the cases indicate that most of the PID users (65.4%: 51 out of 78) knew about the PID existence from their friends and relatives (Table 5.5). Apart from that, some of them (21.8%: 17 out of 78) got the information from the promotion made by the PID management through the distributed pamphlets, and banners. However, only two respondents from the Simpang Empat PID mentioned that they heard the news about the PID from the radio (Perlis FM), while one from the Balik Pulau PID got it from the Internet. Nevertheless, there were few of them from all the three PID coincidently found out about the PID existence while visiting the nearby Post Offices.

Table 5.5: Cross Case Analysis on the Role of Critical Awareness in Users' Empowerment at Telecentres

Interactional Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Critical Awareness	• **PID promotions**: o Words of mouth (friends, relatives, & teachers) o Mass communication media (banners)	• **PID promotions**: o Words of mouth (friends, relatives, & teachers) o Mass communication media (newspapers, banners, signboard & Perlis FM)	• **PID promotions**: o Words of mouth (friends, & relatives) o Coincidence (while visiting the Post Office/near to home) o Mass communication media (Internet & banners) o Promotion by the PID administration
	• **Services offered**: o Computer classes o Internet o Printing o Consultation o Computer maintenance o Fax o Lamination o Filling up online form o Wireless connection o Computer sales agent o Paying utilities bills	• **Services offered**: o Computer classes o Internet o Printing o Consultation o Computer maintenance o Fax o Lamination o Filling up online form o Wireless connection o Computer sales agent o Paying utilities bills	• **Services offered**: o Computer classes o Internet o Printing o Consultation o Computer maintenance o Computer sales agent o Fax o Scanning o CD burning
	• **Computer classes** o Microsoft Office (Word, Excel & Powerpoint) o Internet o Website/blog o E-services o MS Publisher	• **Computer classes** o Microsoft Office (Word, Excel & Powerpoint) o Internet o Video editing technique o Graphic application	• **Computer classes** o Microsoft Office (Word, Excel & Powerpoint) o Website/blog o Internet o Network o CD Burning
	• **Decision to use the services and participate in the training offered by the PID:** o Friendliness of the operators	• **Decision to use the services and participate in the training offered by the PID:** o To acquire ICT	• **Decision to use the services and participate in the training offered by the PID:** o Competing for

	○ No Internet access at home ○ No computer at home ○ Low fee charged by the PID	skills and knowledge ○ To obtain the computer certificate ○ Filling spare time ○ Free/low charge ○ Friendly administrators ○ Comfortable place ○ Facilities/services offered	academic excellence and job placement ○ Conducting business online

Findings from the three PID shows that the respondents consistently agreed that among the popular services offered by the PID were computer classes (88.5%: 69 out of 78), Internet access (82.1%: 64 out of 78), printing (80.8%: 63 out of 78), and consultation (53.8%: 42 out of 78) (Table 5.5). Only a small number of them realized about the assistance they could get from the PID in terms of computer maintenance (29.5%: 23 out of 78), computer sales agent (19.2%: 15 out of 78), and fax (15.4%: 12 out of 78). On the other hand, only a few respondents from Kuala Nerang and Simpang Empat were aware that they could obtain additional services such as lamination (9.8%: 5 out of 51), wireless connection (9.8%: 5 out of 51), filling up online form (9.8%: 5 out of 51), and paying utilities bills (3.9%: 2 out of 51). Some of the respondents from Balik Pulau PID also pointed out the opportunity of using scanner (7.4%: 2 out of 27) and burning CDs (3.7%: 1 out of 27) at the centre.

The respondents from all the PID unanimously stated that the computer classes that they had and could participated at the centre comprised of Microsoft Office Packages, and Internet. Respondents from Kuala Nerang and Balik Pulau also mentioned that they learned to develop websites and blogs from the centre.

Moreover, all respondents were in consensus that the supervisor or the assistant supervisor conducted all the computer classes offered at the PID.

Most importantly, relating to the critical awareness among the telecentre users, what made most of the respondents from Kuala Nerang and Simpang Empat decided to use the services and participated in the trainings offered by the PID was due to the friendliness of the operators (supervisor and assistant supervisor) and the low usage fee (Table 5.5). While the respondents from Balik Pulau went to the PID for the sake of competing for academic excellence and job placement, and conducting business online, those from Simpang Empat intended to acquire ICT skills and knowledge, and obtain computer certificate. Others stated their reasons as no Internet access and computer at home (Kuala Nerang), to fill their spare time, and PID is a comfortable place (Simpang Empat).

Regarding their decision-making skills, all respondents from the three PID denoted that they made their own decision in using the ICT facilities and services (Table 5.6). These respondents were in consensus that the most used computer applications while at the PID were Internet and Microsoft Office packages, which include Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. The respondents from all the PID also admitted that most of them had never developed any website or blog for various reasons such as do not have the related skills and knowledge, do not have the interest, and busy. However, only a few of them (28.2%: 22 out of 78) had developed their personal or business websites and blogs with the intention of sharing information, knowledge, and experience, and promoting their products to wider

market. In fact, three users in PID Kuala Nerang linked their business websites to the PID website under the Kelab Usahawan (Entrepreneur Club) category.

Table 5.6: Cross Case Analysis on the Role of Decision-making Skill in Users' Empowerment at Telecentres

Interactional Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Decision-making skill	• **The use of ICT**: ○ All respondents (except one) decided themselves.	• **The use of ICT**: ○ All respondents made their own choice ▪ majority appreciated the efficiency and effectiveness of using the technology in facilitating their routine matters.	• **The use of ICT**: ○ All respondents decided themselves.
	• **The most used computer application**: Internet Microsoft Office package	• **The most used computer application**: Internet Microsoft Office package	• **The most used computer application**: Internet Microsoft Office package
	• **Website/blog development**: ○ **Never**: ▪ Did not know how/have the knowledge and skill ▪ One had the intention to create a blog that would emphasize on the importance of green environment ○ **Business websites**: ▪ All were linked to the Kuala Nerang PID website under the Kelab Usahawan (Entrepreneur Club) category to serve the purpose of promoting their	• **Website/blog development**: ○ **Never**: ▪ Did not have the related skills, knowledge, and interest ○ **Personal blog** ○ **Business websites**	• **Website/blog development**: ○ **Never**: ▪ Did not have the knowledge and skill, busy or do not interested ▪ One had the intention to create a blog that would emphasize on the importance of green environment ○ **Business websites**: ▪ To promote product to wider market & to gain more income ○ **Personal blog**: ▪ To share knowledge and

	business activities ○ **Personal blog**: ▪ To share information and knowledge with other bloggers		experience with others
	• **ICT supports in decision-making and problem solving**: ○ Majority agreed that ICT knowledge helped them became a wiser decision-maker and problem solver since they have access to lot of information on various issues. Therefore, they did not simply accept what others said, instead they would first do some research before making decision.	• **ICT supports in decision-making and problem solving**: ○ Majority agreed upon the efficiency of accessing information. Having numerous required information, they could learn from others' who shared their experiences and views. This would eventually help them in making their own assessment and evaluation before proceeding with their final resolution. With ICT knowledge, they had become better person (more knowledgeable and more confidence in solving problems)	• **ICT supports in decision-making and problem solving**: ○ Numerous sources of information on the Internet in dealing with their difficulties ○ Cross checking of information can be done easily

Respondents from all the PID also agreed that ICT does support them in decision-making and problem solving especially in terms of providing numerous information sources on diverse issue. They can also learn from others who shared their experiences and views which will then helped them in making their own assessment and evaluation before proceeding with their final resolution. Besides, they can crosscheck information more easily. They admitted that having these opportunities, gave them the benefit of becoming a wiser decision-maker and problem solver. Most

importantly, they always keep in mind that they should not simply accept what others said, instead they would first do some research before making final decision.

The users (53.8%: 42 out of 78) from all the three PID highlighted insufficient number of computers at the PID as the main barrier or obstacle faced (Table 5.7). Users from Simpang Empat and Balik Pulau included the problem of slow Internet connection at these centres. Others include low computer specification (Kuala Nerang), virus attack (Simpang Empat), small space, lack of ICT understanding, operation time limited to office hour, and PCs do not support Chinese language (Balik Pulau). Surprisingly, a few users from Simpang Empat PID mentioned that they had never faced any problems while at the centre. When asked to describe their ways of handling those barriers or obstacles, only a few of them shared their actions.

Table 5.7: Cross Case Analysis on the Role of Problem Solving Skill in Users' Empowerment at Telecentres

Interactional Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Problem solving skill	• **Barriers/obstacles experienced while using the PID**: ○ Waiting for their turn to use the computers ○ Low computer specification	• **Barriers/obstacles experienced while using the PID**: ○ To use the computers in the PID ○ Slow Internet connection ○ Virus attack ○ No problem	• **Barriers/obstacles experienced while using the PID**: ○ Waiting for their turn to use the computer ○ Slow Internet connection ○ Small space ○ Lack of ICT understanding ○ Operation time limited to office hour ○ PCs do not support Chinese language

In order to cope with the computer inadequacy, the Simpang Empat and Balik Pulau respondents would either wait patiently for their turns or go to the nearby cyber café (Table 5.8). Some respondents in Kuala Nerang and Balik Pulau chose to bring along their laptops to access the Internet since the centres are equipped with wireless connection. On the other hand, a few of them, from Kuala Nerang and Simpang Empat PID, who would rather come back to the centre at other more convenient times. While there were users who willing to share the computer with their friends (Simpang Empat), others would either go home (Balik Pulau) or make a request to the administrators to add more PCs.

Table 5.8: Problem Solving Strategies

Barriers	Kuala Nerang PID	Simpang Empat PID	Balik Pulau PID
Insufficient number of computers	Bring own laptop to access Internet via wireless connection		Bring own laptop to access Internet via wireless connection
		Wait patiently for their turns	Wait patiently for their turns
	Come back at other times	Come back at other times	
		Go to the nearby cyber café	Go to the nearby cyber café
	Asked the administrator to add more PCs		
		Share with their friends	
			Go home
Slow Internet connection		Patiently stay and proceed with their work	Patiently stay and proceed with their work
		Go to the nearby cyber café or go home	
			Inform the supervisor
Virus attack		Inform the PID supervisor	
Other problems while	Refer to someone who are more skillful and	Refer to someone who are more skillful and	Refer to someone who are more skillful and

using the computer	knowledgeable	knowledgeable	knowledgeable
	Try on their own	Try on their own	Try on their own
	Immediately switch off or reset the PC	Immediately switch off or reset the PC	Immediately switch off or reset the PC

The respondents from Simpang Empat PID who could not stand the setback of slow Internet connection would immediately went to the nearby cyber café or went home, while those from Balik Pulau opted to inform the supervisor regarding the matter. Nevertheless, there were among them who would patiently stay and proceed with their works. Finally, the respondents from the Simpang Empat PID who were bothered with virus attack decided to just forward the trouble to the PID supervisor. In addition, if they were to encounter other hindrances while using the computers, most of them would immediately refer to those who are more ICT skillful and knowledgeable. However there are a few of them would either tried to solve them on their own or straight away switch off the PC.

Pertaining to the last factor of interactional empowerment, leadership skills, the evaluation of the characteristics of respondents were based on their experience on three aspects; 1) their strategy of encouraging more participation to the PID from the local community; 2) their readiness to become ICT instructor; and 3) their experience of being member of any of the community committee (Table 5.9). The findings from all the three cases indicate that the respondents recognized the importance to spread the importance of ICT in one's life to the community. All of

them did not mind and showed their willingness to share the benefits of ICT to their relatives and close friends. They also recommended that the PID administrators should play a role in initiating more promotions throughout the communities. Among their suggestions in getting more community participation were to place advertisement in various printed and electronic media. The respondents from Kuala Nerang and Balik Pulau further added that the PID administrators should conduct awareness talk and campaign particularly at schools and mosques.

Table 5.9: Cross Case Analysis on the Role of Leadership Skill in Users' Empowerment at Telecentres

Interactional Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Leadership skill	• **To encourage more participation from local community**: Aggressive promotions by the PID Giving talks (schools and mosques) Placing advertisement in the printed and electronic media ○ Spread of words on the importance of ICT to the community ▪ Talking to their close friends and relatives and also their acquaintances pertaining to the importance of ICT in changing one's life ○ Add more computers ○ Provide bigger space ○ Provide more sophisticated devices ○ Create more activities	• **To encourage more participation from local community**: ○ Spread of words on the importance of ICT to the community ▪ Talking to their close friends and relatives Aggressive promotions by the PID ▪ Advertise through printed and electronic media ▪ Conduct awareness talk and campaign in the community ○ Provide more attractive services ○ Provide more reading materials ○ Regular visitors should be taught to develop their own blogs ○ Provide fixed timetable for PID registered members ○ Add more computers	• **To encourage more participation from local community**: ○ Spread of words on the importance of ICT to the community ▪ Talking to their business counterparts ○ Aggressive promotions by the PID ▪ Place more banners in the local township ▪ Distribute pamphlets to various neighbourhoods within the community ○ Create more attractive services and activities ▪ Organize awareness program ▪ Conduct business workshops

	• **Becoming ICT instructor**: ○ **Willing:** ▪ Once they had the skills and knowledge: ▪ To share knowledge, skills, and experience ▪ To teach the young generation to become IT literate and to be successful in IT ▪ ICT instructor is a happy, profitable, and beneficial job ○ **Refused**: ▪ Have other commitments	• **Becoming ICT instructor**: ○ **Willing**: ▪ To share knowledge, skills, and experience ○ **Refused**: ▪ Not ready in terms of skills and knowledge ▪ Not interested ▪ Too young ▪ Have other priorities	• **Becoming ICT instructor**: ○ **Willing**: ▪ To share knowledge and skills ○ **Refused**: ▪ Need to improve their ICT skill and knowledge ▪ Have other obligations
	• **Member of community committee?** ○ PID Kelab Usahawan (Entrepreneur Club) committee members ○ PID Kelab Usahawan (Entrepreneur Club) vice chairperson ○ None ○ Had no offer (as PID or other village committee)	• **Member of community committee?** ○ PID community representatives ○ Being elected since they are active members and possess ICT skills and knowledge ○ PID Kelab Usahawan (Entrepreneur Club) vice chairperson ○ None ○ Too young ○ No nomination ○ Not a permanent resident at the village ○ Have other commitments	• **Member of community committee?** ○ PID Kelab Usahawan (Entrepreneur Club) committee member ○ PID Kelab Usahawan (Entrepreneur Club) secretary ○ Housing committee member ○ None ○ Busy ○ Not interested ○ Need more skills and knowledge ○ Had not be nominated

Other than the above strategies, the PID administrators were urged to provide more attractive services and activities. For example, respondents from Simpang Empat would appreciate if the PID could provide more reading materials, organize website or blog development workshop, and prioritize fixed schedule for registered members. On the other hand, those from Balik Pulau stressed on conducting awareness program and business workshops.

Most of the respondents from Simpang Empat (63.2%: 24 out of 38) and Balik Pulau (63.0%: 17 out of 27) openly admitted that they were not ready to become ICT instructor because they need to improve their ICT skills and knowledge, are not interested, and are too young. In addition, a few of them from the three PID stated that they have other commitments and priorities. However, the respondents from all PID who showed their willingness mentioned that they were obligated to share their knowledge, skills, and experience with others in the community. Other reasons given by those from Kuala Nerang include teaching the young generation to become IT literate and to be successful in life. Some of them even stated that ICT instructor is a happy, profitable, and beneficial job.

Similarly, majority of the respondents from the three cases had never held and been offered as member of any of the committee in their community. Nevertheless, a few of them currently were holding the post as committee members in the PID Entrepreneur Club and local housing committee.

The above actions demonstrated by the users from the three PID complement Zimmerman's (1995) description regarding the decision-making, problem solving, and leadership skills of interactional empowerment. Zimmerman noted that those skills involve new insights, information, and knowledge, and being able to identify useful resources, knowing how to access these resources, and understanding barriers to resource access.

5.1.3 Behavioural Factors of Empowerment

According to Zimmerman (1995), actions associated with behavioral empowerment would vary with the goals and opportunities available. In this study, the telecentre users' actions focus on their participation and coping efforts in engaging themselves in ICT-related telecentre activities to improve their socio-economic well-being. The findings reveal that the duration of respondents being PID users differ between all the three cases (Table 5.10). Most of the Kuala Nerang respondents had been using the PID between 2-3 years while those from Simpang Empat were between 1-2 years. However, in Balik Pulau, the number of those who had been using the PID facilities less or more than a year is almost equivalent.

Table 5.10: Cross Case Analysis on the Role of Coping and Participation in Users' Empowerment at Telecentres

Behavioural Empowerment Factors	**PID Location**		
	Kuala Nerang	**Simpang Empat**	**Balik Pulau**
Coping and participation	• **Time period of being PID user** ○ **2-3 year**.	• **Time period of being PID user** ○ **1-2 years**	• **Time period of being PID user** ○ **< 1 year** ○ 1 year
	• **Frequency of PID usage in a week** ○ **5 times** ○ **when required**	• **Frequency of PID usage in a week** ○ **1-5 times** ○ **when required** ○ **eight times**	• **Frequency of PID usage in a week** ○ **1-5 times** ○ **8 times** ○ **when required**
	• **Intention of coming to PID** ○ Searching information ○ Completing school homework/assignment ○ Communicating via Internet ○ Reading online news ○ Doing business chores, and ○ Participating in the computer trainings	• **Intention of coming to PID** ○ Searching for information ○ Participating in computer trainings ○ Completing school homework or assignments ○ Seeking entertainment ○ Reading online news	• **Intention of coming to PID** ○ Searching for information ○ Completing business chores ○ Participating in computer trainings ○ Communication

Despite the significant different in terms of the period of becoming PID users between the three cases, the findings show that the frequency of PID usage by most of the respondents from all the PID was between 1-5 times in a week. This indicates that there are no difference between old and new PID users when it comes to the use of ICT services and facilities especially when their main intention of visiting the centre was to search for information. Nevertheless, if respondents from Simpang Empat and Balik Pulau stated to participate in computer trainings as their second and third intention respectively, those from Kuala Nerang listed this as their last intention. This may due to the fact that majority of them were older users, who had already acquired the basic ICT skills and knowledge. Likewise, while users from Kuala Nerang listed communication as their third intention, those from Balik Pulau chose it as their last.

The above findings correspond to Zimmerman's statement that actions associated with behavioral empowerment would vary with the goals and opportunities available.

5.2 Psychological Empowerment Model for Telecentre Users

Based on the cross case analysis, a psychological empowerment model for telecentre users has been proposed (Figure 5.2). The model lists 27 items of each factor of the PE construct as identified from the findings of the study. The findings suggest that PE does exist among the telecentres users. The model is represented by the three PE constructs followed by the eight PE factors and finally the indicators of each factor. The three PE constructs are intrapersonal, interactional, and behavioural. The factors of the first PE construct include

perceived control, self-efficacy, competency, and motivation. For the second PE construct, interactional, the factors are critical awareness, decision-making, and problem solving skills. Finally, the factors for the behavioural construct are coping and participation. Originally, in the Zimmerman's PE framework, there are four factors for the interactional construct, critical awareness, decision-making, problem solving, and leadership skills. However, in this study, the leadership factor is not prominent because most of the telecentre users are most of the respondents are young, inexperienced, and has just completed their secondary education.

These indicators derived from the findings demonstrate the psychological empowerment of the telecentre users. These items can also be used as indicators to evaluate or assess the psychological empowerment of telecentre users. For example, the indicators for the first factors of the intrapersonal constructs, which is perceived control, emphasize on acquiring, broadening, and keeping updated with ICT skills and knowledge. The indicators for the self-efficacy look into the ability to facilitate problem solving and routine matters together with improving ICT skills and knowledge.

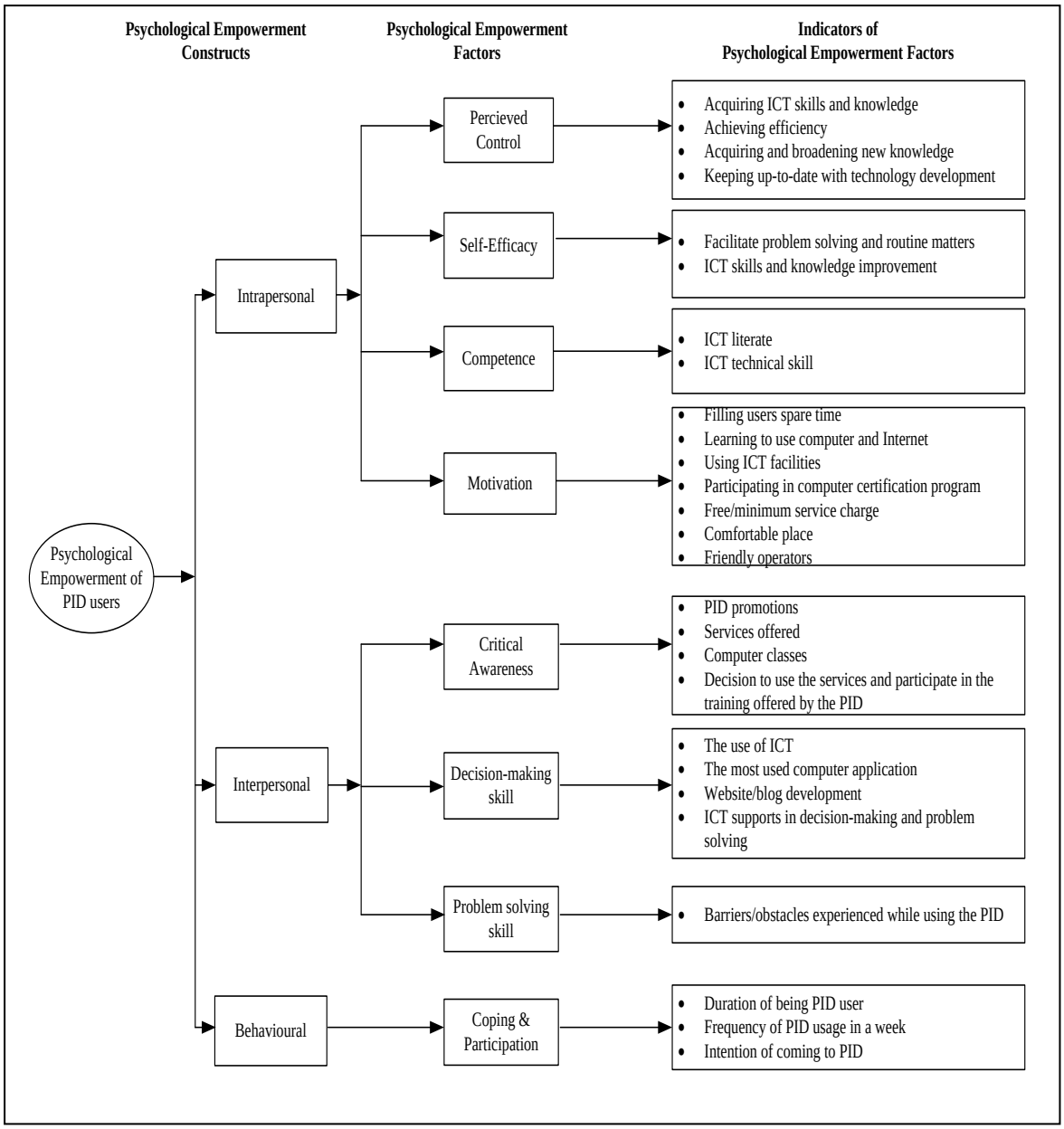

Figure 5.2: The proposed Model of the Psychological Empowerment of Telecentre User

5.3 Summary of the Chapter

This chapter discusses the analysis of the three PID cases. For the intrapersonal construct of empowerment, all respondent admitted that having ICT skills and knowledge bring about positive change to the users' quality of life and social and

economic well-being. As for the interactional construct, the findings indicate that the interactional level does exist among the respondents since they are aware of the existence of the ICT centre and the provided ICT facilities in their community. All of them admitted that the decision of acquiring ICT skills and knowledge was made solely by themselves since they had recognized the importance of ICT in their lives. Most of them agreed that they have become wiser decision-makers and problem-solvers after being acquainted to the ICT technology and application especially the Internet. They loved the fact that they are able to obtain numerous information from the Internet. The connectivity gave them the opportunity to share knowledge and experience among their counterparts. However, in terms of the leadership skill, only a few of them have the opportunity of being leaders in various community groups. Nevertheless, all respondents revealed their willingness to spread the importance of ICT in one's life to the surrounding community because they recognized the importance of ICT in one's life.

Finally, for the behavioural factors of the empowerment construct, the telecentre users' actions focus on their participation and coping efforts in engaging themselves in ICT-related telecentre activities to improve their socio-economic well-being. Most of the users have been using the PID more than one year. The next chapter is the discussions on theoretical implications of the study.

CHAPTER SIX
DISCUSSIONS, CONTRIBUTIONS, CONCLUSIONS, AND FUTURE WORK

6.1 Introduction to the Chapter

This chapter discusses on the relationships between the findings and the theory that motivated this study: Psychological Empowerment (PE) Theory. A discussion of the theoretical and practical implications of the study and the limitations of the study follows. Finally, recommendations for future research are presented.

6.2 The Psychological Empowerment Factors (Intrapersonal, Interactional, and Behavioral) in Empowering PID Users

The present research findings suggest that the implementation of the three PID, Simpang Empat PID, Perlis, Kuala Nerang PID, Kedah, and Balik Pulau PID, Pulau Pinang, in the rural areas of Perlis, Kedah, and Pulau Pinang, respectively, is positive. These results are reflected by the improvement of the users' lives. The most apparent importance of the psychological empowerment factors is reflected in the intrapersonal construct whereby almost all the respondents indicated that the improvement of their ICT skills and knowledge has given them confidence and increased earnings through involvement in e-commerce and e-learning. The respondents said that they had save time for personal routines too through the use of various electronic applications. For example, they can now perform their regular activities such paying utilities bills, conducting banking transactions, and searching for information, through the internet. Having such alternative transaction medium,

the users can avoid the hassle of going back and forth to the various agencies and queuing for their turn to come up.

In addition, the findings show that the community members are aware and realized that ICT can support them to be a better person especially in decision-making, whereby they can now use the social network to keep in touch with existing and to find new friends; seek and share information; and get involved in various electronic applications activities. These reveal that the PID has managed to achieve its purpose of being a place to gather entrepreneurship, economic development, social development, and skills development. The telecentres are not only providing access, but also identifying new socio-economic opportunities that can be leveraged through ICT, and to foster the understanding of the benefits of ICTs while promoting their usage. The strengthening of human and social capabilities of marginalized groups is possible through the respondents' effort of making use the ICT services offered by the centre. This is in-line with Gigler (2004) and Omar et al. (2011) arguments that improved access to information and ICT skills can enhance poor peoples' capabilities to make strategic life choices and to achieve the lifestyle they value which will then enhance their socio-economy level. The effort in taking up new skills shown by the PID indicates that they have been empowered in the sense of increasing their freedom in making decisions regarding their own future.

6.2.1 Intrapersonal

The factors of intrapersonal empowerment in this study include perceived-control, self-efficacy, competence, and motivation. The study shows that all the factors are

applicable or show positive feedback especially in terms of their socio-economic well-being. Among the indications related to the intrapersonal factors shown or achieved by the users comprise of their achievement in becoming knowledgeable and skillful ICT users, competitive individuals, entrepreneurial ready and employable individuals, and motivated people.

6.2.1.1 ICT Skill and Knowledge

ICT public access venues can become the connecting point for the community members to continue their education even though they are no longer in school or university through various short term courses (Lesame, 2008; Jamaluddin et al., 2009; Sey & Fellows, 2009; London et al., 2010) particularly involving computer and digital literacy programmes (Bailey, 2009; Hansson et al., 2010). Thus, training for users to use computers and internet access is of paramount importance to ensure the users are able to surf and access various learning materials and information on their own (Beyers & Koorbanally, 2010; Norizan et al., 2010; Nor et al., 2010). This is exactly the outcome observed in the three case studies. The finding is in agreement with Lesame (2008); Mukerji (2008); Zulkefli et al., (2008); Bailey & Ngwenyama (2009); Gomez et al., (2009); Norizan et al., (2010); Hansson et al., (2010) that telecentre is a place that offers access to information, training, and education its users or members. Through such program, users are enabled to acquire new skills and to interact for the first time with technologies in their lives (Gigler, 2004; Naivinit, 2009; Hansson et al., 2010). Such attitude signifies that the person is being empowered through community-based organizations (Gigler, 2004; Prasad & Sreedevi 2007; Bailey, 2009; Gomez et al., 2009; Cheang, & Lee, 2010).

Various services and trainings provided by the PID are sufficient for the users to gain basic ICT skills that can help them to be a better person. This is evidenced through the findings that the PID users do make an effort to acquire ICT skill and knowledge readily and seek to be more efficient in getting information. For example, by being able to handle simple online electronic transactions via the internet, they can be more efficient in performing their regular routine activities. The users are also competence in seeking and disseminate information through the use of internet. This surely enables them to achieve their desired goals. Hence, the internet acts as an alternative medium for handling routine activities for some of them, hence resulting in faster and simpler transactions (Wheeler 2008; Norizan et al. 2010).

The respondents also seemed to be very determined to acquire new ICT skills and knowledge and to go all out in spending needed resources for such related purposes particularly in enhancing their knowledge. This is evidenced from their commitment level in using ICT towards improving their socio-economic well-being. Results of this study show that among the social benefits of using the telecentre are education and social interactions. The PID has provided a platform for school children in the selected areas the ability to find further information through the Internet for the subject matter they learnt in school. Moreover, the school leavers, university students and graduates come to the centre to seek for additional and advance ICT knowledge and skills so that they can explore more on the usage of computer applications and internet. For example, during the observation, most of the school leavers came to the PID to fill up the higher learning institution education online application form. In

fact, the use of personal computer nowadays seems to be a must especially to the university students to enable them to carry out their assignments or to collaborate with their colleagues on solving complex tasks.

At the same time, access to ICT at the centre can facilitate communication between community members, family, friends, and counterparts through the use of various applications such as e-mail, and Facebook. Most importantly, from the findings, it can be implied that with the newly acquired ICT skills and knowledge, the rural communities have demonstrate a sense of achievement and pride, thus strengthening their self-esteem especially for those who virtually interacting with their friends and counterparts all over the world. They have managed to get rid of their problem of being shy and wary in getting help or advice. These behaviours portray the strengthening of existing social ties and the formation of new ties (Bailey, 2009; Naivinit, 2009; Prado, 2010). This is not only applied to the virtual environment but also to the real world. For instance, the PID has become a social hub for the users especially the businesspeople and entrepreneurs to consult each other regarding various matters. In addition, bringing the community closer together to solve problems and build prosperity (Prado, 2010; Wolske, 2010). Most importantly is for them to create social networking. Social networking through the cyber world is becoming popular especially among young people. Pertaining to a telecentre, previous study has showed that telecentres are among the public access centres where youngsters regard as their meeting place to hang out, chat online, and gather information (Bailey, 2009; Gomez & Gould, 2010).

Rural community requires higher level of information seeking skills and focus to train them in this area is a must (Norizan et al., 2010). Through ICT training, women can be empowered to maximize the use and benefits of technology, eventually enable them to compete successfully in the global information economy, with their male counterparts, and play a leadership role in its development (Umrani & Ghadially, 2003; Lesame, 2008; Hansson et al., 2010). Similarly, the above findings signify that the users are willing to learn more about ICT. Therefore, telecentres should not only improve existing trainings and services but also need to regularly come up with new and innovative services in order to fulfill the requirement of local communities. Telecentre can be regarded as a place to provide life-long learning by providing easy access and flexibility to access learning content over the Internet. In a way, the development of the community ICT skills and knowledge can be strengthened.

The new and innovative services that can be provided by the telecentre may include the provision of applications which benefit the community in general such as internet banking and e-government services; opportunity to communicate online such as email and chatting; assistance in the Internet surfing; and basic ICT technical and maintenance skills. These services can be arranged according the various users categories. For example, the use of electronic applications such as e-government, e-banking, and e-business can be promoted to those aged between 30 to 50 years old as this group is in their most productive life cycle in terms of socio-economic activities. For the senior citizens, the benefits of using communication applications have to be promoted. These types of applications are most appropriate especially for those who

have family members living away from home. In addition, the use of the Internet and e-mail by older adults is useful in getting their participation (Bailey & Ngwenyama, 2011). Older adults do recognize the potential of technology to facilitate independence particularly in as a new way of processing and disseminating information (Mitzner et al., 2010). Most of them use technology tools to update and obtain information, for research, for fun, and to talk to relatives and friends (Frias et al., 2011). Therefore, the telecentre management must continuously emphasize the benefits of technology in its education and training programs.

6.2.1.2 Competitiveness

Being competitive is very important in achieving success in one's life, especially in the knowledge era. For instance, a person with only excellent academic qualification may not guarantee a good employment opportunity. Usually, potential employment candidates required by organizations are those who have extra package besides academic achievement. With ICT skills and knowledge, employees are able and ready to respond to various changes in business processes and industry structures (Beyers & Koorbanally, 2010). This fact is realized by some of the users who mentioned that by being skillful and knowledgeable in ICT, one would have an advantage over those who do not. This is exactly the trend that is happening in the developing countries such as Malaysia, whereby most of the employment requirements include ICT skills, not only for the professional positions but also for the clerical and supporting staff. Technology literacy has been regarded as a required skill of a potential employee of most organizations. The following is one of the comments given by the users regarding the importance of being competitive:

"*Memberi peluang-peluang pekerjaan melalui laman web. Membolehkan saya mencari pekerjaan melalui Internet. Dengan adanya sijil atau kemahiran komputer, dapat memudahkan persaingan untuk mendapat kerja (Provide employment opportunities through websites. Enable me to look for job via the Internet. With computer certification and skill, competing for job would be easier)*"

The above example justifies the importance of certification of some of the courses offered by the telecentre as pointed by Bailey (2009) & Naivinit (2009).

The competitive attitude is also portrayed in some of the users who are really interested in advancing their knowledge in ICT so that they are always up-to-date with technology development. These users realized that being skillful and knowledgeable in ICT, they can compete successfully in the global information economy. For instance, they have more exposures to numerous opportunities such as in venturing into new business and career. This attitude is shown by a young Internet marketer, who realized that he needed to constantly improve his proficiency in order to be successful in his career, since the nature of his job depends on the use of technology (please refer to Section 4.6.1.1.1 in chapter 4).

Being competitive is necessary especially to those in the business field. The famous management guru, Porter, is well-known with his famous Five Competitive Model which emphasize on the importance of achieving competitive advantage for business

survival. This is conveyed by a businessman who claimed that his standard of living had changed once he managed to expand his business circle globally.

6.2.1.3 Entrepreneurship and Employment Opportunities

By participating in the telecenter programs and activities, the users are showing their efforts in acquiring ICT skill and knowledge. Closely linked to the skills and knowledge acquired at the telecentre, the users are able to use ICT as an alternative medium to venture into new business and career opportunities (Lesame, 2008; Hansson et al., 2010). This helps to improve the standard of living of the rural community. The local entrepreneurs are now able to promote their products and services to the global market through websites. In addition, the access to e-government services through TCs has facilitated their dealings with government agencies.

Besides skills and knowledge, the telecentre users are also supported through various entrepreneurship and employment programs. For instance, the establishment of the Social Entrepreneur Club (KUS) at the PID which provides opportunities for all members to get together, sharing related business information and experience. The PID staff also helps the local businesspeople in developing their websites for promotion and marketing purposes. This helps the community to gain more confidence promoting, marketing, and selling their local products. In fact, a few of the entrepreneur club members are able to sell their products outside their hometown after promoting them through the club websites. One example is the housewife in PID Simpang Empat who expressed her appreciation to the PID staff that gives full

support in carrying out her business: "*Saya datang setiap pagi ke PID ini untuk mendapat tunjuk ajar dari staf PID bagi mengemaskini dan menyenggara laman web saya kerana kebanyakan pelanggan saya berada di merata-rata tempat di Malaysia*". Another example is the self-employed woman whom recently being terminated from her executive position at an electronic factory decided to follow her husband footstep in conducting business through the Internet. Involving in this kind of business was not a problem to her since she had acquired the ICT skills previously during her study in a university. She was eager to start her own business through the Internet so that she could change her standard of living by giving additional support to her family income.

In terms of employment opportunities, the PID have been supporting its users by organizing workshop on preparing/writing resumes as well as compiling the lists of job search sites as reference for those who are seeking employment. Such initiatives are very beneficial especially for fresh school-leavers and graduates. This gives them a better chance in competing for job recruitment and placement. This is evidenced by the remark made by a young housewife aged 20 that stressed on her aim to utilize the ICT knowledge and skills in looking for jobs so that she could have support her family income. Nevertheless, they are comfortable registering with job agencies through the Internet.

By keeping updated with technology advancement, ultimately the community will be empowered. This is relevant to other studies that mention empowerment can be achieved through community-based organizations such as telecentres by offering

entrepreneurship, and employment opportunities to its users (ILO 2001; Umrani & Ghadially, 2003; Prasad & Sreedevi, 2007; Zulkefli et al., 2008; Bailey & Ngwenyama, 2009; Bailey, 2009; Gomez et al., 2009; Cheang, & Lee, 2010).

6.2.1.4 Motivation

In this study, those who are motivated stressed that they would definitely occupy their free time by coming to the centre to learn ICT and use the ICT facilities to develop related skills. This matches Prado et. al, 2011, Rega (2010) and Bailey & Ngwenyama (2009) findings whereby users are motivated to go to such centres to become ICT literate. Once they have possessed the skills, they will definitely visit the centre more frequently (Sein, & Furuholt, 2009; Cheang & Lee, 2010; Rega, 2010; Prado, 2010; Melody & Gomez, 2012). This will make them more active in seeking ways of making sure that the telecentre will continuously running and operating especially when they regard the centre as a meeting or gathering place for them to carry out various beneficial activities (Prado, 2010; Masiero, 2011). In a way, the telecentre can be sustained and the user is empowered.

The most obvious example relating to this is the determination shown by several housewives who are much disciplined in making sure that they would not miss their computer class sessions due to their aims of becoming ICT literate. A couple of housewives even mentioned that they would make an effort to stopover to the centre on their way to fetch their children from schools. This indicates that they will make use the time they have to learn about ICT. Another housewife in her twenties that said that she needs the skills since she are looking for jobs so that she can help to

lessen her husband burden. In fact she voiced out her concern that nowadays having ICT related skills and knowledge would be an advantage to secure a position in government and private agencies. Moreover, women who have ICT related skills and knowledge have better chances to earn to earn higher income working from home (Umrani & Ghadially, 2008; Sein, & Furuholt, 2009).

The experiences from this case seem to indicate that computers and the Internet can have extremely motivating effects on the users. An important aspect of this individual empowerment is the positive psychological effects of enhanced self-esteem and a sense of being better connected to the rest of the world.

6.2.2 Interactional

The second construct of the theory is interactional, which includes factors such as critical awareness, decision-making skill, problem-solving skill, and leadership skill, describe how people analyze and understand their external conditions.

6.2.2.1 Critical Awareness

In general, the findings show that the respondents are aware of the existence of the PID, services offered by the PID, and the benefits of the PID through various means of promotions. The most mentioned services include computer classes, Internet access, printing, and consultation, while the benefits of having ICT skills and knowledge enable them to compete for academic excellence and job placement, and conduct business online. High level of ICT awareness and technology integration among community members will influence their ability to adopt ICT in their

everyday life and consequently they will be more supportive and willing to participate in any ICT initiatives (Zulkefli et. al, 2008; Norizan 2010). Moreover, Naivinit (2009) states that as long as there are access to computers and Internet, the rural people will definitely use such technology since they are aware that it can enhance their socio-economic well-being. Abdulwahab & Zulkhairi (2012) point out positive correlations between awareness of ICT services and trainings in telecentre and usage. This matches the related findings of this study whereby almost all respondents are aware of presence of the telecentre in their local communities.

This is an indication that the PID users are aware of the importance of ICT in their everyday lives. However, another interesting factor besides acquiring ICT skills and knowledge is due to the friendliness of the operators (supervisor and assistant supervisor) and the minimal charge of usage. Referring to the friendliness of the telecentre operators, the users meant that these operators are always willing to lend their hands in giving advice and encouragement. For example, the operators of the three PID in this study never tired of supporting users that need their help by giving personal tutoring or consultation as required. This is evidenced during my observation at PID Simpang Empat, where En. Nik, the supervisor, was helping a housewife to develop her website. This corresponds to Bailey's (2009), and Wan Rozaini et. al (2010) recommendation that telecentre staff play a role in enhancing participation by the community. Through their broad-based literature review on the impact of public access to ICT, Sey and Fellows (2009) pointed out the role of operators in attracting users to such places is important in achieving sustainability.

6.2.2.2 Decision-making and Problem-solving Skills

With regard to decision-making skills, two phenomena can be observed: demonstrates the ability to make their own decision and the ability to make decision based on the information obtained from the internet. An example for the former phenomenon is shown by the willingness of the users to choose to be at the PID on their own, and to decide on which application to use, and training to attend. Having abundance of information obtained, the users show the ability to make their own assessment and evaluation to reach a resolution (Nath, 2001; Balit, 1998 as cited in Elijah & Ogulande, 2006; Haris & Rajora 2006). This demonstrates the latter phenomenon. Specifically, in this study, a senior citizen from Simpang Empat personally mentioned during the interview that he was able to claim his son's insurance that involved in an accident by looking up for related information from the Internet.

In fact there are those who are able to develop their own personal and business websites and blogs for the purpose of sharing information, knowledge, and experience, and promoting their products to wider market. This is an indication that they are clever enough to choose what is best for them. At the same time, this shows that the PID users are confidence in conveying messages to the public. The freedom to choose and control the content of the media indicates that the bloggers are empowered (Luik, 2010). This is also supported by other studies which revealed that blogging activities can psychological empowered the users (Figueiredo et al., 2009; Stavrositu & Sundar, 2012; Cattane, 2012).

Moreover, they admitted that with the support of ICT, they are becoming wiser in making decision and solving problems. For example, the use of electronic mail eases them in obtaining instant feedbacks on any queries. In fact, a teacher from PID Kuala Nerang considers the Internet as a reference centre in looking for information. This is also evidenced by Prado (2010) that through various activities and services offered by the telecentre such as news, information, education, and a meeting ground that binds the community together may help the users to solve problems, build social capital, and promote well-being.

6.2.2.3 Leadership Skill

The leadership skill among the PID users can be demonstrated by their willingness in encouraging the local community to participate in PID activities, becoming the instructors, and being part of the community committee members (Rashila 2005). However, the findings indicate that only a few of the respondents are currently or had previously held various positions in any committee in their community. This may be due to the fact that most of the respondents are young, inexperienced, and has just completed their secondary education. Moreover, the main purpose of them coming to the centre is to acquire ICT skills and knowledge.

To promote leadership, the telecentre might want to organize multimedia classes or camps for the youngsters to encourage them to use related tools to edit or produce media of their interests. The media-technology related program can promote autonomy, leadership, and self-esteem, and efficacy, which in turn can empower the youth (London et al., 2010).

6.2.3 Behavioural

Behavioural makes the third construct of empowerment, which exhibit the ability to cope and participate in ICT related activities.

6.2.4 Coping and participation

Coping and participation is reflected in the duration of the respondents being the PID users, the frequency of usage in a week, and their intention of going to the PID (Rashila 2005). The best example is the young businessman who admitted that he had come starting from its operation till to this date. He had been regularly come to the PID during his school days until after he graduated from the university. He felt that he owed a lot to the centre and that now is the time for him to give his support and commitment to the community. In fact he is currently the chairperson of the Kelab Usahawan Sosial (KUS) for the Kuala Nerang PID. Kelab Usahawan Sosial (KUS) or *Social Entrepreneurs Club (SEC)* is another government initiative established in 2008 under the PID to create a self-supporting ecosystem for the development of the local communities. Most of the activities conducted by KUS are related to entrepreneurships and social entrepreneurships such as retailing, media and advertisement, sports and leisure, hospitality, telecommunication, financial, health, and property.

From all the intrapersonal factors discussed above, it proves that the users realized and admitted that ICT can help them to improve their quality of life particularly in

developing related skills and knowledge. All these items are in accordance with the findings of Hansson et al., (2010), Sey and Fellows (2009) and Prasad and Sreedevi (2007). Similar findings pointed out those rural participants of the government initiative telecentres able gain more in terms of knowledge, skills and motivation in computer usage (Zulkefli et. al, 2008; Abdul Razaq et. al, 2009). Eventually, the users can perform various activities that help them to develop themselves (Shneiderman, 1990; Torkzadeh & Lee, 2003; Siddiquee & Kagan 2006).

The discussion on the interactional factors, with the exception of the leadership skill, reveals that respondents are empowered by pointing out the importance of ICT, and having information access in developing their social and economic development. These are part of the categories of Internet-simulated empowerment mentioned by Wheeler (2008).

6.3 The Psychological Empowerment Model of Telecentre Users

The study found that all the items indicate all factors of the Zimmerman's constructs show positive feedback except for leadership skill of the interactional construct. This is expected as most of the youth are young, inexperienced, and has just completed their secondary education. The proposed model in chapter four lists several items (of each factor of the PE construct) that indicate the psychological empowerment of telecentre users. These items can also be used as indicators to evaluate or assess the psychological empowerment of telecentre users.

The proposed model of psychological empowerment for the users of telecentre/community-based ICT projects was adopted from Zimmerman's conceptualization of empowered outcomes, including his three psychological empowerment constructs/components. The Zimmerman's framework was chosen based on his recommendation that research on PE requires attention to the development of a theoretical framework particularly to the constructs. He also suggested conducting research to examine the relationship among the intrapersonal, interactional, and behavioural components of PE for different populations and settings.

Zimmerman also stressed that specific empowered outcomes would vary depending on the population in question. The psychological empowerment framework/model, including intrapersonal, interactional, and behavioural components provided not only a guide for the search of indicators, but also allowed the development of specific indicators that reflected the experiences of the telecentre or community-based ICT projects. The indication of being empowered or not is based on the three PE constructs. Zimmerman (2000) stated that a person who scores high on all three components are considered the most highly empowered, while those who have high score in intrapersonal and low score in interactional and behavioral are considered less empowered or limited PE.

In this study obviously the respondents are empowered since they demonstrate positive reactions towards all the items except for leadership skill of the interactional construct. Therefore, this leadership factor is removed from the proposed model. In

this study, the leadership factor does not seem to jeopardize the empowerment of the individual. For example, the respondents did not really care about being leader or representative in their communities. They are more concerned on the importance of having ICT skills and knowledge to help them to be successful socially and economically.

For the intrapersonal construct of empowerment, the items for the perceived control factors include four abilities that the users mentioned they have successfully acquired; ICT skills and knowledge, efficiency achievement, new knowledge, and keeping up-to-date with technology development. For the second factor, self-efficacy, two items are identified, problem solving and routine matters facilitation, and ICT skills and knowledge improvement. In terms of competence, the items are ICT literate, and ICT technical skill. Here, the users admitted that after using the PID services and facilities, they can now considered themselves as ICT literate and have the basic knowledge concerning the ICT skill. Lastly, the items for the motivation factors are filling spare time, learning to use computer and Internet, using ICT facilities, participating in various computer certification programs, free or minimum service charge, comfortable place, and friendly operators.

Interactionally, the PID users are empowered since the findings signify that they are critically aware that they need to play their roles in promoting the PID to the community. Besides that, they are aware of the various services and computer classes provided by the PID. Most importantly they are aware of the benefits of ICT in their lives by deciding to use the services and participated in the trainings at the

PID. Similarly, pertaining to their decision-making skills, the indications are noted by the use of ICT in supporting their decision-making and problem solving. In fact, they mentioned about computer applications that they usually used and some of them even have their own websites or blogs. Their problem-solving skills are identified by stating their strategy or action in confronting any barriers or obstacles that they experienced while using the PID.

Finally, for the behavioural empowerment construct, the users are evaluated based on the duration of being PID user, the frequent usage of the PID in a week, and the intention of coming to the PID.

6.4 Theoretical and Practical Contributions

The findings generated from this study have valuable contribution to both research and practical point of views. It provides an insight into the exploration of individual empowerment among the users of telecentre in Malaysia. The following sections discuss both of the contributions.

6.4.1 Theoretical Contributions

A major contribution of this study is the definition and exploration of empowerment. Indicators of psychological empowerment that were developed for this study are based on the working definition of empowerment as well as the experiences of the telecentre users in this study. Following Zimmerman's suggestion that specific empowered outcomes might vary depending on the population, these indicators were developed to reflect the specific experiences of telecentre users.

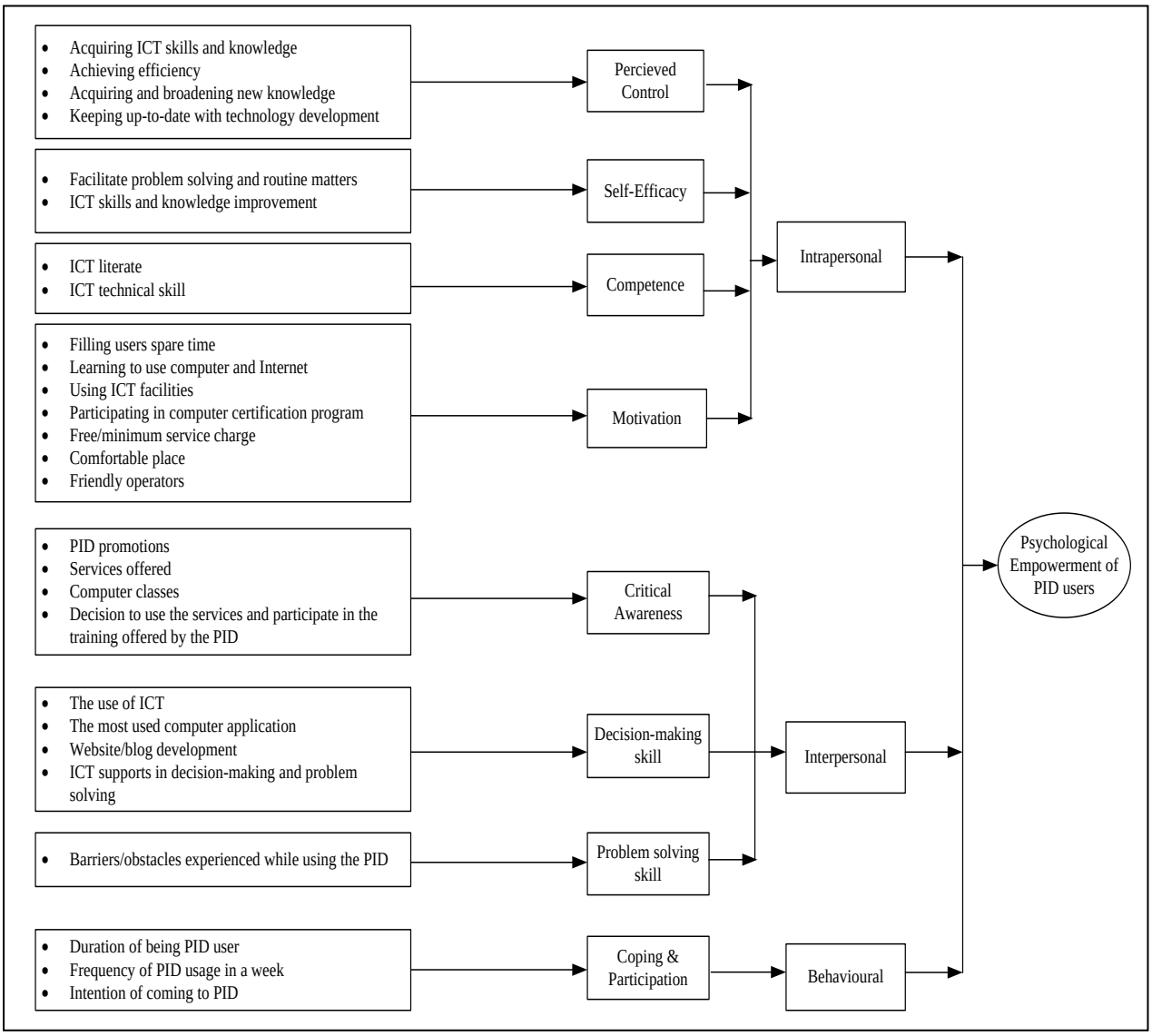

Figure 6.1: The Psychological Empowerment of Telecentre User Model

The original contribution of this study is the applying of the Zimmerman Empowerment Theory in Information Systems field and proposes a psychological empowerment model (Figure 6.1) that can be used to evaluate or assess user's empowerment in other type of telecentres. The empowerment theory is chosen based on Zimmerman and Warchausky (1998) suggestion that this theory can be a useful framework for attaching rehabilitation research that focuses on control and involvement. This study looks into the PID as a centre for knowledge and skill

transfer similar to a rehabilitation centre. Furthermore, Zimmerman (2000) recommended that research on PE requires attention to the development of a theoretical framework particularly to the constructs.

In addition, Zimmerman also suggested conducting research to examine the relationship among the intrapersonal, interactional, and behavioural components of PE for different populations and settings. The use of the psychological empowerment theory helps in proposing the empowerment model of telecentre users. This study presents the scenario with regards to the PID users' empowerment. This proves that the theory is useful in describing user empowerment in a telecentre. This contributes to several arguments that the field of Information and Communication Technologies for Development in general lacks sound theoretical frameworks, including the study on telecentres (Roman, 2003; Parkinson, 2005; Walsham & Sahay, 2006; Bailey & Ngwenyama, 2009; Rega, 2010).

6.4.2 Practical Contributions

This study provides a rich description of how telecentres' implementation can help in empowering rural community, which can be used as evidence of PID program outcomes. The evidence is important because of the lacking of such rigorous evaluative document (Beardon, 2006; Roman & Colle, 2005; Sey & Fellows, 2011). By providing the evidence, it can help inform more effective public policy and program planning particularly in terms of ICT for development policy and practice.

Furthermore, the evidence can be used to support the idea of the relevancy of the PID establishment. The support and participation shown by the users indicate that the PID plays an important role for their development. This eventually will improve the quality of life of the rural communities by giving them better chance or opportunity to communicate with any government and non-government agencies. In order to become knowledge and high income society, the community particularly from the rural areas needs to be equipped with knowledge and skill to jump starts the economic activities. Consequently, helps the country to achieve Vision 2020. Therefore, the study of empowerment is an indicative of how successful the telecentre is impacted. The following are the practical contributions discussed according to government policies, government sponsorships, awareness programs, and Information System in Developing Countries (ISDC) research.

6.4.2.1 Government Policies

This study contributes to the discourse on ICTs for development particularly on the emerging roles of telecentres. Result from the study and survey conducted can become input for policy making and strategic directions emphasizing on the sustainability of telecentre programs. In addition, by identifying the respondents' purposes of using telecentre, the ICT skills and knowledge acquired, and the impact of community involvement in telecentres, it is intended that this study will result in strategies which could be used to guide future development of community ICT-based projects.

Findings from this study can inform policymakers about opportunities and challenges to support and strengthen public access venues and help reach underserved populations with meaningful access to ICT. Results of this study emphasize the need for creative solutions to harness the potential offered by cybercafés in urban areas, and to look for ways (policies, partnerships, incentives) to make them more accessible and useful to adults and seniors, to women, to lower income users, to those with no formal education, in sum, to those marginalized and excluded from goods and services in society. Therefore, the findings indicate that PID implementation support Malaysian government aspiration to propel Malaysia in the delivery of advanced information, communications and multimedia services towards improving the quality of life of Malaysian and at boosting Malaysia's global competitiveness.

6.4.2.2 Government Sponsorships

The positive feedback shows the important role of PID to achieve the country's Vision 2020. In order to become knowledge and high income society, the community particularly from the rural areas needs to be equipped with knowledge and skill to jump starts the economic activities. There is still hope for the majority of the country to tap into the available facilities and initiatives given the right contents and programs. The fact that there are people visiting and using the facilities of PID demonstrate the need for the government to support its existence.

Therefore, the government has to undertake the obligation to provide the ICT initiatives for these underserved groups as the evidence shows that the community do

benefit by their need to improve the socio-economic status. It is expensive for the government to bear the cost of rural ICT development, but this can be done through various collaborations and partnerships. Engaging the community, making them pay for part of the facilities, getting NGOs and leaders of community, as well as continuing with public-private partnerships will ensure that the cost are shared (Colle & Roman 2003; Norizan 2009; Gould & Gomez 2010; Wan Rozaini et al. 2010). Such collaboration of partnerships can increase massive participation of the excluded people into the information world (Rao, 2008).

6.4.2.3 Awareness Programs by "Champions" from Each of the Areas

This study began with the assertion that empowerment can be achieved through community-based ICT projects. Even though people can possess IT skills from the various ICT-based project initiatives, only those who can apply the skills appropriately will have the advantage of having greater satisfaction such as having higher earnings and more job opportunities (Moore, 2003; Beardon, 2004; Harris, 2007). Therefore, the psychological empowerment indicators may allow implementers to determine in what particular ways their services support users' empowerment. The concept of empowerment may also help community-based ICT projects implementers assess users' needs or strengths.

Any rollout efforts by the government, must be participatory (that is, include the communities in decision making) and strategic by raising awareness of the need by communities to acquire ICT literacy skills. Furthermore, these should be backed up by strong political leadership so that ICT-based projects or telecentre initiatives can

remain viable and sustainable in the long term since they are important avenues of providing technological needs of communities (Kariuki, 2009). In this study, the findings indicate that the respondents agree that more awareness programs should be conducted to have more participation from the communities. In fact, most of them mentioned that they do not mind to spread the benefit of acquiring the ICT skills and knowledge to the relatives, neighbours, and friends. They also admitted that the PID managers as one of their motivations of coming to the centre. By establishing the Social Entrepreneur Club, the PID managed to have more participation from the communities especially to those who are currently involved in small business activities. Therefore, awareness campaign on the benefit of ICT should be continuously done in increasing more participation from the communities.

6.4.2.4 Information System Research in Developing Countries

This study contributes to the application of Information Systems in Developing Countries (ISDC) research agenda mainly through its focus to social context and strategic concerns associated with socio-economic development. This is evidenced by the statement made by Walsham & Sahay (2006) that research in the area is still relatively new and they wish that there would be more research conducted locally from the developing countries. Two years later, Avgerou (2008) emphasizes that ISDC research has expanded the Information Systems (IS) research agenda and developed new understanding of IS innovation phenomena. She is also hoping that the IS research community will recognize the significance of the enlargement of its domain.

This study is relevant in the IS domain since Bailur (2008) claimed that telecentres are information systems (IS), and understanding whether or not an information system is successful involves evaluation. Therefore, this study is appropriate as Roman & Colle (2005) mentioned that in-depth evaluation of telecentres is really needed since many of the telecentres established around the developing world as pilot projects are reaching a certain stage of maturity. This is again reinforced by Cheang and Lee (2010) since there is still shortage of sufficient framework and methodology in telecentre research.

6.5 Limitations of the Study

Qualitative methodology is appropriate for this study because the study is exploratory and descriptive in nature. Moreover, the use of qualitative method to understand a phenomenon of interest demanded attention to internal validity, construct validity, and reliability (dependability and auditability). Efforts were made to design a study that responded to all of those needs. However, as with all studies, the limitations of the results described should be kept in mind.

The use of multiple sources and cross-case comparison (Miles & Huberman, 1994) are to strengthen the internal validity of the results of a qualitative data analysis in this study. The internal validity of this qualitative study design has the potential to be very strong given the availability of rich-data, availability of several data sources (survey, interview, and observation) related to the cases, comparison across respondents, the potential for replication of findings across cases, and the availability of feedback from interviewees. These methods not only helped to validate the data,

but it provided the respondents another opportunity to reflect on their experiences (Zimmerman, 1990).

In terms of the construct validity, the qualitative measures used are grounded in constructs from the literature on community informatics, ICT, and Zimmerman's (1995) operationalization of psychological empowerment. The general operationalization of psychological empowerment including intrapersonal, interactional, and behavioural components has been tested in community organizing contexts and was elaborated upon here to reflect the experiences of the users in a telecentre setting. Reliability of qualitative data is referred as dependability and auditability (Miles & Huberman, 1994). Data may be seen as dependable if multiple data sources confirm certain patterns. Dependability of this study was established through cross-case comparison.

The limitation concerning the interview method of data collection includes the tendency of providing similar answers to the questions asked since it was conducted in group. This is observed during the interview session whereby answers from earlier speakers tend to influence the answers from the next speakers especially for the secondary school students and fresh university graduates. These adolescents tend to be silent or diffidence that requires the researcher to intrude the session in getting their response. In answering the survey questions, most of the respondents do not elaborate their answers. This may either due to the fact that they do not understand the questions or they do not know the answers or they do not care. However, the

weakness is minimized by asking the respondents to elaborate their reasons during the interview sessions.

This study only involved three PID in the Northern region of peninsula Malaysia. Hence, it is not quite right to generalize the findings to all the Malaysian PID. Each PID is thus, treated as a unique case. However, similar characteristics persist among certain PIDs, thus making it possible to categorize them accordingly. For instance, most of users of the three PIDs are mainly youngsters who visit the centre to acquire ICT knowledge and skills.

6.6 Suggestions for Future Research

The aim of this study was to understand the psychological empowerment of the PID users. From the identified gaps and challenges suggest how the PID can be improved in order to support the empowerment of the rural communities. The evaluation findings suggest positive indication towards the three constructs of psychological empowerment; interpersonal, interactional, and behavioural except for the leadership skill of the interactional construct. This is expected as most of the PID users are young, inexperienced, and has just completed their secondary education. Thus Zimmerman psychological empowerment does occur since according to Zimmerman (2000), a person who scores high on all three components are considered the most highly empowered., while those who have high score in intrapersonal and low score in interactional and behavioral are considered less empowered or limited PE. The main gap is related to the interactional construct of PE whereby the PID users are still lacking with the leadership skills. Therefore further actions need to be planned

or proposed to strengthen the skills and external support for PID activities should be identified so that the users can be empowered.

Using the conceptual model was helpful since it clearly linked the constructs and form guiding questions to approach the collection of data. In addition the model help to determine the indicators for each of the factor of the PE constructs. This model can be further improved by testing it to the other form of telecentre. The proposed model can also be used to help guide the process of introducing new telecentres by assessing the potential usage of the facilities based on their local context or promoting the use of existing telecentres for community development. Given that the objective of telecentres is to provide public access to computers and the Internet with the aim of enhancing individual and community development it is important that policy makers and telecentre managers understand the factors that influence usage and success.

6.7 Summary of the Chapter

Assessment of telecentre mainly focused on the success of the projects particularly on the technical, financial, management, and sustainability issues. Few studies have examined the social impacts of these centres on the communities in which they are established (Kumar & Best, 2006). However, these studies tend to be focusing more on socio-economic aspects in general. In her review of methodological approaches, O'Neil (2002) concludes that individual empowerment is one of the key areas in measuring impacts of ICT projects. The proposed model for psychological empowerment of telecentre users provides an avenue for researchers in

understanding individual users of telecentre projects. This is essential so that appropriate recommendation on the next course of actions be proposed to the stakeholders of the projects. Rigorous evaluative evidence of the performance of rural telecentres can provide information for more effective public policy and program planning (Beardon, 2006; Roman & Colle, 2005). This model is regarded as a contribution in applying the empowerment concept in ICT environment as suggested by Zimmerman (2000). The model can be a basis for researcher to examine the relationship among the intrapersonal, interactional, and behavioural components of PE for different populations and settings.

As a conclusion, the study finds that the community based telecentre (PID) play an important role in empowering the individuals in the rural community in Malaysia, and thus led in ensuring the sustainability of the telecentres. Thus it can be concluded that the use of PID and the facilities provided as reported in this study are all supportive and positive towards individual empowerment. The marginalized communities who are mostly at the rural areas and low income groups will be able to play a more active role in improving their lives as long as they were offered with the necessary ICT facilities and infrastructure, being trained and exposed to the benefits of internet and ICT and assisted in upgrading their knowledge and socio-economics. These factors are good supports or opportunities in empowering telecentre users.

The study found that all the items indicate all factors of the Zimmerman's constructs show positive feedback except for leadership skill of the interactional construct. This

is expected as most of the respondents are young, inexperienced, and has just completed their secondary education. The positive indications show that the respondents have benefited from PID. The respondents especially the youths from the underserved groups are future leaders and being able to tap into digital technology empowers them to bring them into the mainstream of the country. The positive feedback that we have got show the important role of PID to achieve the country's Vision 2020. In order to become knowledge and high income society, the community particularly from the rural areas needs to be equipped with knowledge and skill to jump starts the economic activities. There is still hope for the majority of the country to tap into the available facilities and initiatives given the right contents and programs. The fact that there are people visiting and using the facilities of PID demonstrate the need for the government to support its existence. In other word, such telecentre program or initiative is still viable and valuable tool for rural communities. Otherwise, only the fortunate people who have the money or the opportunity to have access will succeed in this country. It would be a sad situation where the rich get richer, and the poor get poorer.

Some argued that the government has to undertake the obligation to provide the ICT initiatives for these underserved groups as the evidence shows that the community do benefit by their need to improve the socio-economic status. It is expensive for the government to bear the cost of rural ICT development, but this can be done through various collaborations and partnerships. Engaging the community, making them pay for part of the facilities, getting NGOs and leaders of community, as well as continuing with public-private partnerships will ensure that the cost are shared

(Gould & Gomez 2010; Wan Rozaini et al. 2010; Norizan 2009; Colle & Roman 2003). Such collaboration of partnerships can increase massive participation of the excluded people into the information world (Rao, 2008).

This study provides valuable insights on the role and usage of telecentres in empowering rural communities. Through a thematic content analysis of empirical observations, relevant findings to the community of researchers and practitioners in the area of ICTs for development have been identified and discussed. This study contributes to theory and practice by a) providing a rich description of how telecentres' implementation can help in empowering rural community, which can be used as evidence of PID program outcomes, b) proposing a psychological empowerment model that can be used to evaluate or assess users empowerment in other type of telecentres, c) applying the Zimmerman Empowerment Theory in Information Systems environment to evaluate users of Information Systems in the community that never been applied before, and d) adding to the Information Systems body of knowledge particularly in developing countries (ISDC) research agenda.

REFERENCES

Abdulwahab, L. & Zulkhairi, M.D. (2012). "Assessing the Catalyst and the Barriers to Rural Community Based Telecentre Usage", Journal of Emerging Trends in Computing and Information Sciences, 3(6), 926-832.

Adams, A., Blandford, A., & Lunt, P. (2005). Social Empowerment and Exclusion: A Case Study on Digital Libraries. ACM Transactions on Computer-Human Interaction (TOCHI), 12(2), 174-200.

Aguila Obra, A. R., Camara, S. B., & Melendez, A. P. (2002). An Analysis of Teleworking Centers in Spain. Facilities Journal, 20(11/12), 394-399.

Anda, B., & Hansen, K. (2006). A Case Study on the Application of UML in Legacy Development. Paper presented at the ISESE'06, Rio de Janeiro, Brazil.

Amichai-Hamburger, Y., McKenna, K.Y.A., & Tal, S. (2008). "E-Empowerment: Empowerment by the Internet". Computers in Human Behaviour, 24, 1776-1789. www.elsevier.com/locate/comphumbeh. www.sciencedirect.com

Ashraf, M.M., Hanisch, J. & Swatman, P. (2008). Towards a Conceptual Framework for Understanding ICT for Development (ICT4D) Projects in Developing Countries, International Association for the Development of Information Society (IADIS) International Conference ICT, Society and Human Beings, 139-146.

Avgerou, C. (2008). Information Systems in Developing Countries: A Critical Research Review. Journal of Information Technology, 23, 133–146. JIT Palgrave Macmillan Ltd.

Bailur, S. (2008). Deconstructing Community Participation in Telecentre Projects, Development Informatics, Working Paper Series, Paper No. 3.

Bailur, S. (2009). Representation and Reflexivity in ICT for Development (Telecentre) Research. Paper presented at the Proceedings of the 3rd International Conference on Internationalization, Design and Global Development: Held as Part of HCI International 2009, San Diego, CA.

Bailey, A. (2009). Issues Affecting the Social Sustainability of Telecentres in Developing Contexts: A Field Study of Sixteen Telecentres in Jamaica. The

Electronic Journal on Information Systems in Developing Countries (EJISDC), 36 (4), 1-18.

Bailey, A. & Ngwenyama, O. (2009). "Social Ties, Literacy, Location and the Perception of Economic Opportunity: Factors Influencing Telecentre Success in a Development Context", Proceedings of the 42nd Hawaii International Conference on System Sciences.

Bailey, A. & Ngwenyama, O. (2011). "The Challenge of E-Participation in The Digital City: Exploring Generational Influences Among Community Telecentre Users", Telematics and Informatics, 28, 204–214.

Beardon, H. (2004). ICT for Development: Empowerment or Exploitation: London: ActionAid.

Beardon, H. (2006). ICTs, Empowerment, and Development: Articulating Grassroots Analysis Through Participatory Approaches. In H. Rahman (Ed.), Empowering Marginal Communities with Information Networking (pp. 44-61): Idea Group Inc.

Becker, J., Kovach, A. C., & Gronseth, D. L. (2004). Individual Empowerment: How Community Health Workers Operationalize Self-determination, Self-sufficiency, and Decision-making Abilities of Low-income Mothers. Journal of Community Psychology.

Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The Case research Strategy in Studies of Information Systems. MIS Quarterly/September 1987.

Benbasat, I. & Zmud, R.W. (2003). The Identity Crisis within the IS Discipline: Defining and Communicating the Discipline's Core Properties. MIS Quarterly, 27(2), 183-194.

Beyers, R.N. & Koorbanally, N.A. (2010). Computer Literacy: Insufficient for Digital Age Literacy Learners. eSkills Summit 2010, Cape Town, 26-28 July 2010.

Bishop, A. P., & Bruce, B. (2005). Community Informatics: Integrating Action, Research & Learning. Bulletin of the American Society for Information Science and Technology (Aug/Sept 2005), 6.

Bridging the Digital Divide. (2008). Retrieved April 6, 2008, from http://www.aspirasidigital.net.my/MainTemplate02.asp?contentid=3

Cannoy, S. D. (2008). Consumer Empowerment in Healthcare Information Exchange: An Investigation Using the Grounded Theory Approach. Unpublished PhD Thesis.

Cattane, V. (2012). Egyptian Women Bloggers: Perceptions of Empowerment in The Online Public Sphere. Master Thesis. Retrieved July 29, 2011, from http://dar.aucegypt.edu/bitstream/handle/10526/3110/Thesis_Cattane_FINAL_corrections.pdf?sequence=3

Cepeda, G., & Martin, D. (2005). A Review of Case Studies Publishing in Management Decision 2003-2004: Guides and Criteria for Achieving Quality in Qualitative Research. Management Decision, 43(6), 851-876.

Chamberlin, J. (1997). A Working Definition of Empowerment. Psychiatric Rehabilitation Journal, 20(4).

Cheang, S. & Lee, J. (2010). Evaluation Telecenter Performance in Social Sustainability Context: A Cambodia Case Study International IT Policy Program, ieeexplore.ieee.org.

Chow, C., Ellis, J., Mark, J., & Wise, B. (1998). Impact of CTCNet Affiliates: Findings from a National Survey of Users of Community Technology Centers. Retrieved 31 July, 2007, from http://www2.ctcnet.org/resources/reports/impact98.htm.

Clement, A. (1994). Computing at Work: Empowering Action by 'Low-level Users'. Communications of the ACM, 37(1), 53-63.

Collins, D. (1995). Rooting for Empowerment? Empowerment in Organization, 3(2), 25-35.

Compeau, D.R. & Higgins, C.A. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test", MIS Quarterly, 19(2), 189.

Conger, J. A. & Kanungo, R. N. (1988). The Empowerment Process: Integrating Theory and Practice, The Academy of Management Review, 13(3), 471-482.

Creswell, J. W. (1994). Research Design: Qualitative & Quantitative Approaches: Sage Publications, Inc.

Davis, S. S. (2008). "Empowering Women Weavers? The Internet in Rural Morocco", Information Technologies and International Development, 4(2),

17-23. The MIT Press. Retrieved May 19, 2010 from http://www.mitpressjournals.org/doi/pdfplus/10.1162/itid.2008.00005.

De Villiers, M. R. (2005). Three Approaches as Pillars for Interpretive Information Systems Research: Development Research, Action Research and Grounded Theory. Paper presented at the SAICSIT 2005.

Delgadillo, K., Gómez, R., & Stoll, K. (2002). Community Telecentres for Development: Lessons From Community Telecentres in the Latin America and the Caribbean: International Development Research Center (IDRC), Canada.

Dube, L., & Pare, G. (2003). Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations. MIS Quarterly/September 1987, 27(4), 597-635.

Economic Planning Unit (EPU) (2007). Rangka Kerja Strategik Kebangsaan bagi Merapatkan Jurang Digital (NSF-BDD), presented at Bengkel Pusat Perkhidmatan dan Ilmu Komuniti Peringkat Negeri Pulau Pinang, 13 Jun 2007.

Economic Planning Unit (EPU) (2012). Study on Way Forward for Bridging Digital Divide Programmes - Interim Report. July 2012.

Elijah, O. A., & Ogulande, I. (2006). Analysis of the Uses of Information and Communcation Technology for Gender Empowerment and Sustainable Poverty Alleviation in Nigeria. International Journal of Education Development using Information and Communication Technology (IJEDICT), 2(3), 45-69.

Ellen, D. (2003). Telecentres and the Provision of Community Based Access to Electronic Information in Every Day Life in the UK. Information Research, 8(2).

Ezhar, T., Narimah, I., & Aji, K. (2007, February 8). Pola Pencarian Maklumat dalam Kalangan Belia di Pusat Internet Desa (PID) Sarawak. Paper presented at the E-Community Research Centre Colloquium 2007, Universiti Kebangsaan Malaysia, Bangi, Selangor.

Figueiredo, M. A., Camara, M. A., & Salvin, R. (2006). Impact of the Insertion of Modern ICT in Brazilian Rural Communities. IEEE.

Figueiredo, M. A., Camara, M. A., Pardo, P., & Albuquerque, A. M. (2009). "Empowering Rural Citizen Journalism via Web 2.0 Technologies", C&T'09, June 25–27, 2009, University Park, Pennsylvania, USA. ACM, www.portal.acm.org.

Frias, M.A.E, Peres, H.H.C., Paranhos, W.Y., Leite, M.M.J., Prado, C., Kurcgant, P., Tronchin, D.M.R., Melleiro, M.M. (2011). The use of computer tools by the elderly of a Center of Reference and Citizenship for the Elderly, Rev Esc Enferm USP, 2011; 45(Esp):1606-12, retrieved October 1, 2012 from http://www.scielo.br/pdf/reeusp/v45nspe/en_v45nspea11.pdf.

Gable, G. G. (1994). Integrating Case Study and Survey Research Methods: An Example in Information Systems. European Journal of Information Systems, 3(2), 112-126.

Gholipour, A., Rahimian, A., Mirzamani, A., Zehtabi, M. (2010). IMPACT Model of Women's Empowerment, Journal of International Business Research. 3(1), 57-65.

Gigler, B. (2004, September 5-7). Including the Excluded- Can ICTs Empower Poor Communities? Towards an Alternative Evaluation Framework Based on the Capability Approach. Retrieved November 9, 2007, from http://cfs.unipv.it/ca2004/papers/gigler.pdf

Gomez, R., Ambikar, R. & Coward, C. (2009). "Libraries, Telecentres and Cybercafe´s: An International Study of Public Access Information Venues", Performance Measurement and Metrics. 10(1), 33-48.

Gomez, R. & Camacho, K. (2009). "Who Uses ICT at Public Access Centers? Age, Education, Gender and Income Differences in Users of Public Access to ICT in 25 Developing Countries", Proceedings of Second Annual SIG GlobDev Workshop, Phoenix, USA December 14.

Gomez, R. & Gould, E. (2010). "The "cool factor" of Public Access to ICT Users' Perceptions of Trust in Libraries, Telecentres and Cybercafe´s in Developing Countries", Information Technology & People, 23 (3), 247-264.

Grunfeld, H. (2007, December 15-17). Framework for Evaluating Contributions of ICT to Capabilities, Empowerment and Sustainability in Disadvantaged Communities. Paper presented at the CPRsouth2 Conference, Chennai, India.

Hansson, H., Mozelius, P., Gaiani, S., & Meegammana, N. (2010). ”Women Empowerment in Rural Areas through the Usage of Telecentres - A Sri Lankan Case Study”, 2010 International Conference on Advances in ICT for Emerging Regions (lCTer), IEEE, pp. 5-10.

Harris, R. W. (2005). Effective Design and Delivery of Rural Community ICT Services. Paper presented at the Economic & Social Commission for Asia & the Pacific, Kuala Lumpur, Malaysia.

Harris, R. W. & Rajora, R. (2006). Information and Communications Technology for Governance and Poverty Reduction: A Study of Rural Development Projects in India UNDP-APDIP ICT4D Series.

Harris, R. W. (2007, July 10-12). Telecentre Evaluation in the Malaysian Context. Paper presented at the 5th International Conference on IT in Asia, Hilton Hotel, Kuching, Sarawak, Malaysia.

Harris, R. W., Yogesvaran, K., & Lee, L. W. Y. (2007). Telecentres for National e-Inclusion in Malaysia. Retrieved September 9, 2007, from http://i4donline.net/ATF/2007/fullpapers/Roger_ATF07ABS113.pdf

Hayden, C., & Ball-Rokeach, S. J. (2007). Maintaining the Digital Hub: Locating the Community Technology Center in a Communication Infrastructure. New Media and Society, 9(2), 235-257.

Hazita, A., Siti Hanim, S., Jamilah, M., Tg Nor Rizan, T. M. M., Noraza, A. Z., Kalthum, I., et al. (2007, February 8). Peranan Pusat e-komuniti terhadap Pembangunan Kemahiran: eLiterasi di Kalangan Warga Belia Luar Bandar. Paper presented at the E-Community Research Center Colloquium 2007, Universiti Kebangsaan Malaysia, Bangi, Selangor.

Henry, G. T. (1990). Practical Sampling (Vol. 21): Sage Publication.

Hochwalder, J., & Brucefors, B. (2004). A Psychometric Assessment of a Swedish Translation of Spreitzer's Empowerment Scale. Scandinavian Journal of Psychology, 46, 521-529.

Holdsworth, L., & Cartwright, S. (2003). Empowerment, Stress and Satisfaction: An Exploratory Study of a Call Centre. Leadership & Organization Development Journal, 24(3), 131-140.

Hong, N. E. (2010). Investigating Information Systems Infusion from the User Empowerment Perspective. A Thesis Submitted for the Degree of Doctor of Philosophy, Department of Information Systems, National University of Singapore.

Honold, L. (1997). A Review of the Literature on Employee Empowerment", Empowerment in Organizations, 5(4), 202 – 212.

Hur, M. H. (2006). Empowerment in terms of Theoretical Perspectives: Exploring a Typology of the Process and Components Across Disciplines. Journal of Community Psychology, 34(5).

ICT Developments in Malaysia - KTAK's view. (2007, Retrieved June 4, 2007). i4d Online - Information for Development, v.

Jinqui, Z., Xiaoming, H., & Banerjee, I. (2006). The Diffusion of the Internet and Rural Development. Convergence: The International Journal of Research into New media Technologies, 12(2), 293-305.

Kaplan, B., & Duchon, D. (1988). Combining Qualitative and Quantitative Methods in Information Systems Research: A Case Study. MIS Quarterly/September 1987, 12(4), 571-585.

Kariuki, P. (2009). "An Analysis of the Impact of Digital Community Hubs in Facilitating ICT Diffusion in Peri-Urban Areas: A Case of Inanda Ntuzuma Kwamashu (INK) Digital Hub, Durban, South Africa", ICEGOV2009, November 10-13, 2009, Bogota, Colombia, pg 150-154.

Kasturirangan, A. (2008). The Balance of Psychological Empowerment and Disempowerment for Survivors of Domestic Violence. Unpublished PhD, university of Illinois, Chicago.

Khan, F. & Ghadially, R. (2010). "Empowerment Through ICT Education, Access and Use: A Gender Analysis of Muslim Youth in India", Journal of International Development, 22(5), 659–673.

Kieffer, C. H. (1984). Citizen Empowerment: A Developmental Perspective. In J. Rappaport & R. Hess (Eds.), Studies in Empowerment: StepsToward Understanding and Action: The Haworth Press, Inc.

Klien, H. K., & Myers, M. D. (1999). A Set of Principle for Conducting and Evaluating Interpretive Field Studies in Information Systems. MIS Quarterly/September 1987, 23(1), 67-94.

Kumar, R. & Best, M. (2006). "Social Impact and Diffusion of Telecenter Use: A Study from the Sustainable Access in Rural India Project", Journal of Community Informatics, 2(3).

Kwapong, O. A. T. F. (2007). Problems of Policy Formulation and Implementation: The Case of ICT use in Rural Women's Empowerment in Ghana. International Journal of Education and Development using ICT, 3(2).

Leclercq, A. (2007). The Perceptual Evaluation of Information Systems Using the Construct of User Satisfaction: Case Study of a Large French Group. The DATA BASE for Advances in Information Systems, 38(2), 27-60.

Lee, J. C. (2005). Empowerment, Access and Rights: Introducing Information and Communication Technology to Women in Costa Rica, Mexico and Nicaragua. Unpublished PhD Dissertation, The University of Texas at Austin.

Lennie, J., Hearn, G., Simpon, L., & Kimber, M. (2005). Building Community Capacities in Evaluating Rural IT Projects: Success Strategies from the LEARNERS Project. International Journal of Education & Development using ICT [Online], 1(1).

Lentz, B., Straubhaar, J., LaPastina, A., Main, S., & Taylor, J. (2000). Structuring Access: The Role of Public Access Centers in the "Digital Divide". Retrieved March 4, 2007, from www.utexas.edu/research/tipi/reports/joe_ICA.pdf

Lesame, N. C. (2008). The Impact of Information and Communication Technologies (ICTs) on Development: A Case Study of The Influence of Telecentres on The Education of Users, PhD Thesis, University of South Africa.

Lincoln, N. D., Travers, C., Ackers, P., & Wilkinson, A. (2002). The Meaning of Empowerment: The Interdisciplinary Etymology of a new Management Concept. International Journal of Management Reviews, 4(3), 271-290.

Litho, P. K. (2005, April 22). ICTs, Empowerment and Women in Rural Uganda: A SCOT Perspective. Paper presented at the SSMAC: to think is to experience, Centre for Narrative Research, UEL.

London, R. A., Pastor, M., Servon, L. J., Rosner, R., & Wallace, A. (2006). The Role of Community Technology Centers in Youth Skill-Building and Empowerment. Retrieved August 8, 2007, from https://www.rand.org/labor/adp_pdfs/2006_london.pdf

London, R. A., Pastor, M., Servon, L. J., Rosner, R. & Wallace, A. (2010). The Role of Community Technology Centers in Promoting Youth Development, Youth & Society, Vol. 42, No. 2, pp. 199–228.

Luik, J. E. (2010). Blogging as Empowerment: Self-presentation of bloggers in Surabaya, Indonesia. Retrieved July 29, 2011, from http://repository.petra.ac.id/15379/1/Blogging_as_Empowerment.pdf.

Marshall, M. N. (1996). Sampling for Qualitative Research. Family Practice, 13, 522-525.

Masemola, S. S., & De Villiers, M. R. (2006). Towards a Framework for Usability Testing of Interactive e-Learning Applications in Cognitive Domains: Illustrated by a Case Study. Paper presented at the SAICSIT 2006.

Masi, C. M., Suarez-Balcazar, Y., Cassey, M. Z., Kinney, L., & Piotrowski, H. (2003). Internet Access and Empowerment: A Community-based Health Initiative. Journal of General Internal Medicine, 18, 525-530.

Masiero, S. (2011). Financial vs Social Sustainability of Telecentres: Mutual Exclusion or Mutual Reinforcement?, The Electronic Journal on Information Systems in Developing Countries (EJISDC), 45, 3, 1-23.

Mehra, B., Merkel, C., & Bishop, A. P. (2004). The Internet for Empowerment of Minority and Marginalized Users. New Media & Society, 6, 781-802.

Melody, C. & Gomez, R. (2012). “Free” Service or “Good” Service: What Attracts Users to Public Access Computing Venues? In Gomez, R. (Ed), Libraries, Telecentres, Cybercafes and Public Access to ICT: International Comparisons (pp. 43-50), IGI Global. [ISBN 978-1-60960-772-2 (ebook)]

Menon, S. (2001). Employee Empowerment: An Integrative Psychological Approach. Applied Psychology, 50(1), 153-180.

Miles, M. B., & Huberman, A. M. (1994). Qualitative Data Analysis: An Expanded Sourcebook (Second ed.): Sage Publication.

Mitzner, T. L., Boron, J. B., Fausset, C. B., Adams, A. E., Charness, N., Czaja, S. J., Dijkstra, K., Fisk, A. D., Rogers, W.A., & Sharit, J. (2010). Older Adults Talk Technology: Technology Usage and Attitudes, Computer Human Behaviour, 26(6), 1710–1721.

Mohd Nizam, O. (2005, June 16). Dasar Perlaksanaan Inisiatif 'Internet Desa': Cabaran dan Implikasi dalam Mengurangkan Jaringan Digital di Malaysia. Paper presented at the Bengkel Membudayakan Masyarakat Jaringan: Cabaran dan Batasan, Universiti Kebangsaan Malaysia, Bangi, Selangor.

Moore, N. (2003, October). Digital Empowerment: Realising the Potential of Digital Information. Paper presented at the 12th Congress of Southeast Asian Libraries (CONSAL XII), International Convention Centre, Bandar Sri Begawan.

Morrell, C., & Sterling, R. (2006). ICT Strategies for Gender Empowerment: Actionable Approaches and Recommendations. IEEE.

Muir, K. (2004). Connecting Communities with CTLCs: From the Digital Divide to Social Inclusion. Retrieved March 4, 2007, from http://download.microsoft.com/documents/australia/corpaffairs/TSF_CC_CTLCs_2004_web.pdf

Mukerji, M. (2008). Telecentres in Rural India: Emergence and a Typology, The Electronic Journal on Information Systems in Developing Countries (EJISDC), 35 (5), 1-13

Myers, M. D. (1997). Qualitative Research in Information Systems. MIS Quarterly/September 1987, 21(2).

Nath, V. (2001). Empowerment and Governance through Information and Communication Technologies: Women's Perspective. International Information & Library Resources, 33, 317-339.

National ICT Task Force (2010), "ICT Human Capital Development Framework", Final Version, December 2010.

Naivinit, S. (2009). "Gender, access to community telecenter and livelihood asset changes", Journal of Information, Communication and Ethics in Society, 7(2), 128 – 135.

Nor A. Alias, H. Jamaludin, S. Hashim, I. S. Ismail, N. Suhaili (2010). "Theories of Change and Evaluation of Malaysian Rural Internet Centers", retrieved June 15, 2011 from http://www.upf.edu/amymahan/_pdf/MY_NorAziahAlias-etal_ICTD_2010_final_formatted.pdf

Nor Iadah, Y., Shafiz Affendi, M. Y., Zahurin, M. A., Huda, I., Khairudin, K., Zulkhairi M. D., Nor Farzana, A. G., Rafidah, A. R., Syahida, H. & Abdul Razak, R. (2010). "The Influence of Community Characteristics towards Telecentres Success", Computer and Information Science, Vol 3, No 2, pp. 116-120.

Noor Ismawati, J., & Ainin, S. (2005). Domestic Computer Usage and Activities in West Coast Malaysia: Age and Income Differences. Information Development, 21(2), 128-137.

Norizan, A. R., & Faridah, I. (2006). The Utilization of ICT to Empower Women: Challenges and Opportunities via E-Learning. Paper presented at the Seminar e-Pembelajaran: Peningktan Kualiti Pendidikan Tinggi (S-eP 2006).

Norizan Abdul Razak (2009). Empowering the Rural Communities via the Telecentres, European Journal of Social Sciences, 9(3).

Norizan A. R., Zaini, A., Mahamod, I., & Norhayati, S. (2010). "The Impact of Wireless Technology among Malaysian Society", The Proceeding of the 9th WSEAS International Conference on Electronics, Hardware, Wireless And Optical Communications (EHAC '10), 54-59.

Norizan, A.R., Zaharah, H., Rosseni, D., & Kamaruzaman, J. (2010). "Bridging the Digital Divide: An Analysis of the Training Program at Malaysian Telecenters", Recent Researches in Mechanics, Transportation and Culture, 15-23.

Omar, S. Z., Abu Hassan, M., Mohamed Shaffril, H. A., Bolong, J. & D'Silva, J. L.(2011). Information and Communication Technology for Fisheries Industry Development in Malaysia, African Journal of Agricultural Research, 6(17), 4166-4176.

O'Neil, D. (2002). Assessing Community Informatics: A Review of Methodological Approaches for Evaluating Community Networks and Community

Technology centres. Internet Research: Electronic Networking Applications and Policy, Vol. 12(1), 76-102.

Orlikowski, W., & J.J., B. (1990). Studying Information Technology in Organizations: Research Approaches and Assumptions. Unpublished manuscript.

Page, N., & Czuba, C. E. (1999). Empowerment: What Is It? Journal of Extension, 37(5).

Pattanaik, D. (2005). Engendering Knowledge Networks - Empowering Women Through ICT. Women and ICT.

Patton, M. Q. (2002). Qualitative research and evaluation methods (Third ed.). Thousand Oakes, CA: Sage Publications, Inc.

Peccei, R., & Rosenthal, P. (2001). Delivering Customer-Oriented Behaviour through Empowerment: An Empirical Test of HRM Assumptions. Journal of Management Studies, 38(6), 831-888.

Perkins, D. D., & Zimmerman, M. A. (1995). Empowerment Theory, Research and Application. American Journal of Community Psychology, 23(5), 569-579.

Peterson, A. N., & Hughey, J. (2004). Social Cohesion and Intrapersonal Empowerment: Gender as Moderator. Health Education Research: Theory & Practice, 19(5), 533-542.

Peterson, A. N., & Reid, R. J. (2003). Paths to Psychological Empowerment in an Urban Community: Sense of Community and Citizen Participation in Substance Abuse Prevention Activities. Journal of Community Psychology, 31(1), 25-38.

Polkinghorne, D. E. (2005). Language and Meaning: Data Collection in Qualitative Research. Journal of Counseling Psychology, 52(2), 137-145.

Prado, P. (2010). Lighting up the Dark: Telecenter Adoption in a Caribbean Agricultural Community. Journal of Community Informatics. 6(3).

Prado, P., Câmara, M. A. & Figueiredo, M. A. (2011). Evaluating ICT Adoption in Rural Brazil: A Quantitative Analysis of Telecenters as Agents of Social Change. The Journal of Community Informatics. 7(1-2).

Prasad, P.N. & Sreedevi, V. (2007). “Economic Empowerment of Women through Information Technology: A Case Study from an Indian State.” Journal of International Women’s Studies , Vol. 8, No. 4.

Proenza, F. J. (2001). Telecenter Sustainability - Myths and Opportunities. In Dixon & Wattenbach (Eds.), Bridging the Rural Knowledge Gap: Information Systems for Improved Livelihoods: Food and Agriculture Organizations of the United Nations.

Qvortrup, L. (2001). A Means to Social, Cultural and Economic Development of Rural Communities and Low-Income Urban Settlements: Impact of Community Teleservices Centres (CTSCs) on Rural Development. Retrieved November 7, 2007, from http://www.itu.int/ITU-D/univ_access/casestudies/qvortrup.html

Rahman, H. (2006). Sustainable Development Networking Programme (SNDP) in Bangladesh: IGI Publishing.

Rao, S. S. (2008). Social Development in Indian Rural Communities: Adoption of Telecentres. International Journal of Information Management, 28, 474-482.

Raudatil Jannah Abdul Wahab Zen (2010). The Impact and Resulted Actions of the National Strategic Framework for Bridging the Digital Divide (NSF-BDD), Report by Economic Planning Unit (EPU) presented at the Malaysia National Workshop on Rural ICT Development 10 May 2010.

Rega, I. (2010). “What Do Local People Think about Telecentres? A Key Issue for Sustainability”. PhD. Dissertation in Communication Sciences. Faculty of Communication Sciences, University of Lugano.

Roman, R., & Colle, R. (2005). Notes on Research for Telecenter Development. In A. Badshah, S. Khan & M. Garrido (Eds.), Connected for Development: Information Kiosks and Sustainability (pp. 89-96). New York: The United Nations Information and Communication Technologies Task Force.

Romm, C. T., & Taylor, W. (2001). The Role of Local Government in Community Informatics Success Prospects: The Autonomy/Harmony Model. Paper presented at the 34th Annual Hawaii International Conference on System Science, Hawaii.

Rothenberg-Aalami, J. & Pal, J. (2005). "Rural Telecenter Impact Assessments and the Political Economy of ICT for Development (ICT4D)", Berkeley Roundtable on the International Economy (BRIE), University of California, Berkeley, UC Berkeley, http://128.48.120.222/uc/item/18q2282h.

Sarminah, S. (2007). Social Structure Characteristics and Psychological Empowerment: Exploring the Effect of Openness Personality. Journal of American Academy of Business, Cambridge, 12(1), 70-76.

Sehgal, R. (2007). User Empowerment: An Enabler of Enterprise Systems success. A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy Faculty of Information Technology, Queensland University of Technology Brisbane, Australia, November 2007.

Sein, M. K. & Furuholt, B. (2009). Intermediaries in ICT4D: The other "I". Proceedings of Second Annual SIG GlobDev Workshop, Phoenix, USA December 14.

Sekaran, U. (2003). Research Methods for Business: A Skill Building Approach: John Wiley & Sons Inc.

Servon, L. J., & Nelson, M. K. (2001). Computer Technology Centers: Narrowing the Digital Divide in Low-Income, Urban Communities. Journal of Urban Affairs, 23(3-4), 279-290.

Sey, A. & Fellows, M. (2009). Literature Review on the Impact of Public Access to Information and Communication Technologies, CIS Working Paper No. 6, Global Impact Study of Public Access to Information & Communication Technology, University of Washington's Center for Information & Society (CIS), www.cis.washington.edu.

Sey, A. & Fellows, M. (2011). Loose Strands: Searching for Evidence of Public Access ICT Impact on Development, iConference 2011, February 8-11, Seattle, WA, USA, Copyright © 2011 ACM 978-1-4503-0121-3/11/02.

Shneiderman, B. (1990, September). Human Values and the Future of Technology: A Declaration of Empowerment. Paper presented at the ACM SIGCAS Conference: Computers and the Quality of Life.

Sia, S. K., May, T., Soh, C., & Boh, W. F. (2002). Enterprise Resource Planning (ERP) Systems as a Technology Power: Empowerment or Panoptic Control? The DATA BASE for Advances in Information Systems, 33(1).

Siddiquee, A., & Kagan, C. (2006). The Internet, Empowerment and Identity: An Exploration of Participation by Refugee Women in a Community Internet Project (CIP) in the United Kingdom (UK). Journal of Community & Applied Social Psychology, 16, 189-206.

Slater, D., & Tacchi, J. (2004). Research: ICT Innovation for Poverty Reduction. New Delhi: United Nations Educational, Scientific and Cultural Organization, Asia Pacific Regional Bureau for Communication and Information, UNESCO.

Smith, N. C. (1999). The Case Study: A Useful Research Method for Information Management. Journal of Information Technology, 5, 123-133.

Spreitzer, G. M. (1995). Psychological Empowerment in the Workplace: Dimensions, Measurement, and Validation. The Academy of Management Journal, 38(5), 1442-1465.

Stake, R. E. (1995). The Art of Case Study Research: Sage Publications.

Stavrositu, C. & Sundar, S. S. (2012). Does Blogging Empower Women? Exploring the Role of Agency and Community. Journal of Computer-Mediated Communication, 17(4), 369–386.

Strauss, A. L., & Corbin, J. M. (1998). Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory (Second ed.): Sage Publications.

Telecentres not Fully Utilized. (2007, February 7). The Star.

Thomas, K. W., & Velthouse, B. A. (1990). Cognitive Elements of Empowerment: An Interpretive Model of Intrinsic Task Motivation. Academy of Management Review, 15(4), 666-681.

Torkzadeh, G., & Lee, J. (2003). Measures of End-User Computing Skills. Information & Management, 40, 607-615.

Townsend, D. N., Espitia, G. D., Jorge, S. N., & Lee, C. B. (2001). Telecenters and Telecommunications Development: Options and Strategies: David N. Townsend & Associates (DNTA).

Trauth, E. M. (2001). Qualitative Issues in IS: Issues and Trends: Idea Group Publishing.

Umrani, F. & Ghadially, R. (2003). Empowering Women through ICT Education: Facilitating Computer Adoption, Gender Technology and Development, 7(3).

Umrani, F. & Ghadially, R. (2008). "Gender and Decision-Making in Technology Adoption among Youth: A Study of Computer Learners in India Societies", Psychology & Developing Psychology and Developing Societies, 20(2), 209–227

UNESCAP. (2006). Guidebook on Developing Community e-Centres in Rural Areas: Based on the Malaysian Experience: United Nations Economic and Social Commission for Asia and the Pacific.

Walsham, G. (1995). The Emergence of Interpretivism in IS Research: Institute for Operations Research and the Management Sciences.

Walsham, G. & Sahay, S. (2006). Research on Information Systems in Developing Countries: Current Landscape and Future Prospects, Information Technology for Development, 12(1), 7–24.

Walsham, G., Robey, D. & Sahay, S. (2007). "Foreword: Special Issue on IS in Developing Countries", MIS Quarterly, 31(2), 317-326.

Wan Rozaini Sheik Osman, Yuhanis Yusof, Zahurin Mat Aji & Rohani Husin (2010). Empowerment through ICT: Smart Partnership of Community, Public, Private and Academia (CPPA). Proceeding of the National Conference on Rural ICT Development (RICTD 2010): Empowering Rural Communities through Broadband Initiatives, EDC UUM Sintok, Kedah, Malaysia, 23-25 November.

Wheeler, Deborah L. (2008). "Empowerment Zones? Women, Internet Cafes, and Life Transformations in Egypt", Information Technologies and International Development, 4(2), 89-104. The MIT Press. Retrieved May 19, 2010 from http://www.mitpressjournals.org/doi/pdfplus/10.1162/itid.2008.00005.

Wilson, T. (1996). The Empowerment Manual. Hampshire, England: Grower Publishing Limited.

Wolske, M., Williams, N. S., Duple, R. Y., Johnson, E. O., & Noble, S. U. (2010). Effective ICT Use for Social Inclusion. Retrieved January 13, 2011, from

https://www.ideals.illinois.edu/bitstream/handle/2142/14952/wolske.pdf?sequence=2

Yang, X. (2005). Community Telecentre as an Efficient Approach for Rural Development: Experiences from a UNDP Project in Wu'an, Hebei Province, China. Unpublished Master, Dalhousie University, Halifax, Nova Scotia.

Yat, C. F. (2004). Information Technology and Empowerment in Information Society: Use of Computers amongst Senior Persons.

Yin, R. K. (1994). Case Study Research: Design and Methods (Second ed. Vol. 5): Sage Publications.

Yin, R. K., Edition, Vol. 34. (2003). Applications of Case Study Research: Design and Methods. In (Second ed., Vol. 34): Sage Publications. International Educational and Professional Publisher.

Yogesvaran, K. (2007). National Strategic Framework for Bridging the Digital Divide and the Need for Upgrading and Expanding ICT Infrastructure. MyBroadband 2007 Conference and Exhibition, MATRADE Exhibition and Convention Centre, Kuala Lumpur, 10-12 September.

Zahurin, M. A., Huda, I., Nor Iadah, Y., Rafidah, A. R., & Wan Rozaini, S. O. (2007). Rural Internet Centre (RIC) as a Mean for Bridging the Digital Gap in Rural Communities: Assessment of Current Situations. In M. Khosrow-Pour (Ed.), Managing Worldwide Operations and Communications with Information Technology (pp. 1167-1171): Idea Group Publishing.

Zimmerman, M. A., & Rappaport, J. (1988). Citizen Participation, Perceived Control, and Psychological Empowerment. American Journal of Community Psychology, 16(5), 725-750.

Zimmerman, M. A. (1990). "Taking Aim on Empowerment Research: On the Distinction Between Individual and Psychological Conceptions. American Journal of Community Psychology, 18(1).

Zimmerman, M.A. & Zahniser, J.A (1991). Refinement of Sphere-Specific Measures of Perceived Control: Development of a Sociopolitical Control Scale. Journal of Community Psychology, 9, 189-204.

Zimmerman, M. A. (1995). Psychological Empowerment: Issues and Illustrations. American Journal of Community Psychology, 23(5), 581-599.

Zimmerman, M. A., & Warschausky, S. (1998). Empowerment Theory for Rehabilitation Research: Conceptual and Methodological Issues. Rehabilitation Psychology, 43(1), 3-16.

Zimmerman, M. A. (2000). Empowerment Theory: Psychological, Organizational and Community Levels of Analysis. In J. Rappaport & E. Seidman (Eds.), Handbook of Community Psychology (pp. 43-63). New York: Kluwer Academic/Plenum Publishers.