



**UNIVERSITI PUTRA MALAYSIA**

**FACTORS INFLUENCING SUSTAINABILITY OF INFORMATION AND  
COMMUNICATION TECHNOLOGY TELECENTRE PROJECTS IN RURAL  
PENINSULAR MALAYSIA**


**MOHAMMAD BADSAR**

**IPSS 2011 2**

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COMMUNICATION TECHNOLOGY TELECENTRE PROJECTS IN  
RURAL PENINSULAR MALAYSIA**

**By**

**MOHAMMAD BADSAR**



**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in  
Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

**May 2011**

## **DEDICATION**

*Dedicated to my beloved family, my wife and my daughters*

*for their support and patience*

*During my study in Malaysia*



Abstract of thesis presented to the Senate of the Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

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**Chairman: Associate Professor Bahaman Abu Samah, PhD**

**Institute: Institute for Social Science Studies**

This study was designed to determine the factors that influence sustainability of Information Communication Technology (ICT) projects in rural communities in Malaysia. ICT initiatives have started since 1996 in Malaysia, however ICT for development projects through telecentre initiatives are still evolving towards a more established form and still ensuring the project sustainability is the concern of the Malaysian government. In this regard, a conceptual model has been developed to identify factors that contribute to telecentres sustainability in rural communities. The factors comprised; 1) individual characteristics, 2) telecentres characteristics, 3) understanding of community, 4) information characteristics, 5) leadership competency, and 6) telecentre outcomes. In this conceptual model, a telecentre outcome is considered

as mediator which mediates the relationship between the independent variables (factors) and sustainability of telecentre (dependent variable).

In order to achieve the goals of study, a cross-sectional survey design was applied and a set of questionnaire was used as instrument for data collection. The data were collected from 360 respondents who were randomly selected from the Program Internet Desa (PID) and Medan Info Desa (MID) centers in four Malaysia selected state, namely Perak, Kedah, Terengganu and Johor which represented central, northern, east coast and south respectively. Descriptive analysis, factor analyses, Pearson product moment correlation, multiple regressions and Structural Equation Modeling (SEM) were employed for data analyses.

The findings of study revealed that 52.8% of respondents were female and 47.2% of them were male. Average age and monthly income of respondents' were 25 and RM801.7, respectively. Most of the respondents (72.5%) educational level was under diploma, and 34.7% of them were students. Results of the Structural Equation Modeling indicated that the data fit the model:  $\chi^2(231) = 541.044$ ,  $p = .000$ ; GFI = .885, CFI = .937, TLI = .925, RMSEA = .061, Standardized RMR = .044. The results of hypotheses testing of the structural model showed that there were linear positive relationships between understanding of community, information characteristics, leadership competency, and telecentre outcomes and sustainability of telecentres. The results of overall structural model showed that there is not significant direct relationship between individual characteristics and sustainability of telecentre. The results also unveiled that

telecentre outcomes mediated the relationships between individual characteristics, telecentre characteristic, information characteristics, leadership competency and sustainability of telecentres.

This study provided a unique contribution to research by developing a framework for future research by combining empirically grounded findings together with theoretical explanations from the literature. This study also highlighted some implications and recommendations for policy and practice towards the betterment of sustainability of telecentre projects. Further, the need for future research on sustainability in ICTs projects by considering other factors in the rural communities' context highlighted.

Abstrak tesis yang dikemukakan kepada SenatUniversiti Putra Malaysia sebagai memenuhi sebahagian keperluan untuk ijazah Doktor Falsafah

**PENGARUH FAKTOR KESINAMBUNGAN PROJEK TEKNOLOGI  
KOMUNIKASI MAKLUMAT (TELECENTRE) DI KALANGAN  
MASYARAKAT LUAR BANDAR DI SEMENANJUNG MALAYSIA**

Oleh

**MOHAMMAD BADSAR**

Mei 2011

**Pengerusi: Profesor Madya Bahaman Abu Samah,PhD**

**Institut: Institut Pengajian Sains Sosial**

Penyelidikan ini dijalankan untuk mengenalpasti faktor-faktor yang mempengaruhi kesinambungan projek Teknologi Maklumat dan Komunikasi (TMK) di kalangan masyarakat luar bandar di Malaysia. Walaupun kegiatan ICT bermula dari tahun 1996 di Malaysia tetapi projek TMK untuk projek-projek pembangunan melalui telecentre di Malaysia dipertingkatkan lagi. Pihak kerajaan menghadapi beberapa cabaran dalam mengenal pasti bagaimana untuk mendatangkan sumbangan untuk tujuan pembangunanserta bagaimana untuk memantau dan menilai sumbangan itu melalui pembangunan telecentre di kawasan luar bandar.. Dalam hal ini, model konseptual dibangunkan untuk mengenalpasti faktor-faktor yang menyumbang terhadap keberlanjutan telecentre di kalangan masyarakat luar bandar. Dalam kajian ini hubungan

daripada enam faktor diperiksa untuk memberikan peranan dari setiap faktor yang menjelaskan kesinambungan telecentre. Faktor-faktor ini adalah; 1) ciri-ciri individu, 2) ciri-ciri telecentre, 3) pemahaman masyarakat, 4) ciri-ciri maklumat, 5) kompetensi kepemimpinan, dan 6) hasil telecentre sebagai pembolehubah bebas dan kesinambungan telecentre sebagai pembolehubah dependen. Dalam keputusan model konseptual telecentre dianggap sebagai orang tengah yang memediasi hubungan antara pembolehubah bebas dan kesinambungan Telecentre.

Dalam rangka mencapai tujuan kajian, kaedah kajian cross sectional dilaksanakan dan borang soal selidik telah dibentuk bagi pengumpulan data kajian. Data dikumpulkan dari 360 responden yang dipilih secara rawak dari pusat PID dan MID di empat negari, iaitu Perak, Kedah, Terengganu dan Johor yang merupakan wakil dari pusat di kawasan utara, timur dan selatan semenanjung Malaysia. Analisis deskriptif, analisis faktor, korelasi product moment Pearson, regresi berganda dan Struktural (SEM) dengan perisian AMOS telah diaplikasikan dalam menganalisis data kajian ini.

Penemuan kajian menunjukkan bahawa 52.8% dari responden adalah perempuan dan 47.2% dari mereka adalah laki-laki. Data menunjukkan bahawa rata-rata usia responden adalah 25 tahun. Rata-rata jumlah keseluruhan pendapatan bulanan mereka Ringgit Malaysia 801,7. Keputusan kajian menunjukkan bahawa tahap pendidikan 72,5% responden berada di bawah diploma, dan 34,7% responden pelajar.

Keputusan Model persamaan struktur menunjukkan bahawa data fit model:  $\chi^2 (231) = 541.044$ ,  $p = .000$ ; GFI = .885, AGFI = .850, CFI = .937, NFI = .896, TLI = .925, RMSEA = .061, Standardized RMR = .044. Keputusan hipotesis model struktur



menunjukkan bahawa terdapat hubungan signifikan di antara tahap kefahaman masyarakat, ciri-ciri maklumat, kecekapan kepimpinan, dan hasil telecentre sebagai prediktor dengan kesinambungan telecentre. Keputusan model struktur secara keseluruhan menunjukkan bahawa tidak terdapat hubungkait signifikan di antara ciri-ciri individu dan kesinambungan telecentre. Keputusan kajian juga menunjukkan bahawa hasil telecentre mempertingkatkan hubungan di antara ciri-ciri individu, ciri-ciri telecentre, ciri-ciri maklumat, kecekapan kepimpinan dan kesinambungan telecentre.

Keputusan kajian ini juga memberikan beberapa implikasi teori dan praktikal dan cadangan pada keberlanjutan telecentre. Penemuan kajian ini memberikan rangka kerja praktikal untuk keberlanjutan telecentre yang terjadi kekurangan di daerah ini. Penyelidikan ini membuat sumbangan yang unik untuk penyelidikan dengan mengembangkan rangka kerja untuk kajian masa depan dengan menggabungkan penemuan empirik membumi, bersama-sama dengan penjelasan teoritis dari literatur. Dalam kajian ini juga beberapa implikasi dan cadangan untuk dasar dan amalan yang disarankan untuk meningkatkan tahap keberlanjutan dalam projek Telecentre. Penyelidikan ini juga menyoroti keperluan untuk kajian di masa depan keberlanjutan dalam projek-projek TIK dengan mempertimbangkan faktor-faktor lain dalam konteks masyarakat luar bandar.

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In the last but not least, I owe my beloved family, my father, my mother, my wife, my daughters, my sister, my brothers, my father in law, my mother in law, and my brothers in law and all relatives and families for their support during my study in Malaysia. Without their love and support, this study would not have been possible. Thank you for all your love.

I certify that an Examination Committee has met on date of **viva voce** to conduct the final examination of **Mohammad Badsar** on his Doctor Philosophy thesis entitled “Factors Influencing Sustainability of Information and Communication Technology Telecentre Projects in Rural Peninsular Malaysia” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that candidate be awarded the relevant degree. Members Committee are as follows:



---

**AINI IDERIS, PhD**

Professor and Deputy Dean

School of Graduate Studies

Universiti Putra Malaysia

Date:

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

**Bahaman Abu Samah, PhD**

Associate Professor  
Institute for Social Science Studies  
Universiti Putra Malaysia  
(Chairman)

**Musa Abu Hassan, PhD**

Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Member)

**Nizam Bin Osman, PhD**

Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Member)

---

**HASANAH MOHD GHAZALI, PhD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia  
Date:

## DECLARATION

I declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously and is not currently submitted for any other degree at University Putr Malaysia or at any other institution.

The logo of Universiti Putra Malaysia (UPM) is a shield-shaped emblem. It features a red and white design with a central book and a sunburst. The letters 'UPM' are prominently displayed in a red box at the top left of the shield.

**MOHAMMAD BADSAR**

Date: 20 May 2011

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