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Capability of Information Access and Poverty Reduction in Sri Lanka: A Cross Sectional Empirical Analysis

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Abstract:
New economic development strategy for rural development, particularly to poverty alleviation in developing countries has been captivating information communication technology as tool for poverty reduction. Main objective of this study is that analyzing the role of information accesses in poverty reduction in Sri Lanka. Information accesses reduce the poverty via getting opportunities to poor and increasing Poor's empowerment directly and through the other dimensions of poverty indirectly. This study investigates the relationships and effect of traditional and modern information accesses in poverty reduction of household population among 106 divisional secretariats and 17 districts in Sri Lanka. This study with secondary data, collected from17 districts of Sri Lanka in 2001 by using both qualitative and quantitative methodology found that poverty difference among the divisional secretariats as well as districts are being due to the differences of capability of information accesses among them. The divisions and districts which have more information accesses have experienced with less level of poverty. Divisions and districts which have less information accesses are having more level of poverty. This study compares the importance of traditional information accesses such as literacy, news paper, television, and telephones with modern information accesses, digital TV, internet, and mobile telephones for empowerment to poor hence poverty alleviation. Both, traditional information accesses (-70%) and modern information accesses (-62%) have a negative correlation with level of poverty. Literacy which is fundamental mean to access information is more powerful determinant (-75%) of poverty in Sri Lanka. Since traditional information accesses have a negative and significant effect on poverty and modern accesses do not have statistical significant in regression analysis, this study rejects the over emphasizing of importance of information communication technology for poverty alleviation. It concludes that both types of information infrastructures must be enriched for Poor's improvement of capability of information accesses to reduce poverty simultaneously. Information communication technology alone can not alleviate poverty. Traditional information accesses, particularly literacy has been playing key role in poverty reduction in Sri Lanka.
Keywords: Empowerment, Capability, Opportunities, Information Infrastructures, Information Communication Technology (ICI) and poverty.

I. Introduction

Around, two- third poor in Asian region are living in rural sector. It is said, the term poor should cover all those who cannot cope with survival, security, and enabling needs. If one were to apply this comprehensive definition of poverty, the poor certainly account for more than 900 million in Asian region. Over 515 million people live in absolute poverty. 36.6% live on less than 1$/day. Less than 2$/day is 88.8%. Around 260 million people lack access to even rudimentary health facilities. 337 million people are without safe drinking water. Nearly 830 million people have no access to basic sanitation. Around 395 million adults are unable to read and write. Nearly 600 million people have no proper shelter[1]. In Sri Lanka more than 26 percent of population is living under national poverty lines. This statistic excludes the Northeast region of Sri Lanka which is undergoing in war for last two decades. If we include theses regions the poverty will be more. Highest level of poverty is 37 percent in Moneragala district and lowest is 6 percent in Colombo district in 2002[2]. In divisional secretariat level, Siyambalanduwa is highest poverty with 51.1 percent and Colombo divisional secretariat is lowest with 12.1 percent. Why there are so differences in poverty levels among the districts and divisional secretariats? Can this so big poverty disparity among the regions be explained by disparity of capability of information accesses among the regions? Does capability of information accesses among household population in regions affect the poverty level of household in regions? These are very interesting questions to be investigated in this study.

Information is wealth not only in economics but also for all activities of human life. Nobel price – winning economist Simon spoke for all us when he said that "a wealth of information create a poverty of attention" (Carl Shapiro et al., 1999). People who posses more information have more physical wealth and income. More traditional means of information accesses are friends, family and village heads. They are transmitting

[1] South Asia Conference on Technologies for Poverty Reduction, New Delhi,10 11 October, 2003.(Hidellage, Vishaka, ITDG - Sri Lanka)
[2] The national poverty level in measures by household ' headcount index from socioeconomic survey 2001 and 2002.

information from ancient In Nepal 71 percent of respondents believing those old accesses are effective methods of communication.(Miria A. P, 2001). Definition of capability of information accesses is difficult since it has broad means. Information accesses transmit information from one person to another person and one place to another place. Manabi M. el ct (2001) state that the ability of individuals or societies or nations to communicate with others in locally and internationally can be termed capability of information accesses for them. Capability of information accesses empower to people particularly to poor. Individuals gain a sense of self- identity by being paid attention and getting feedback from others. In medical sense, socially isolated people are more likely to die permanently. Effectiveness in communication was one of the important skills in achieving a successful and fulfilling life (Stewart L. el ct 1991)

Communication is the process of transferring or conveying information. It is processes of sharing ideas, information and messages with others. Communication includes writing and talking as well as non verbal, visual and electronic communication such as radio television, internet, telephones and satellite (Suliman A. et al, 2002). [3] We are living in information technological (ICTs) age. ICTs is defined as "Technology that that facilitate communication and processing and transmission of information by electronic means"[4]. These are some time categorized into "old or traditional" technologies (Radio, television and telephones) and "new or modern" technologies (computer, internet, satellite communication, digital TV). Information and communication is related with literacy and education also. Schools, or educated parents and friends also are as sources of information communication(IC) assesses but they are not ICTs accesses. In order to take focus off technology some practitioners prefers 'IC for development' rather than 'ICT for development'. We are able to use ICT in all fields. There are so many efforts were under taken to integrate information and communication technology with economic development, particularly for poverty alleviation. ICTs have been shown to be capable of inducing social and economic development in the terms of health care, improved education, employment, agriculture, and trade and also of enriching local culture. Many international aids agencies, Local non- government development organization and donors as well as government of developing countries are becoming increasingly enthusiastic about prospects for improving the effectiveness of their development activities by making ICTs available to poor people. This study also welcomes their ideas and have enthusiastic about ICTs for poverty alleviation. But we have some challenges in this modern view of development strategy for poverty reduction. This study analyzes the needs of other sources of information accesses for sustainable victory of ICTs based development programs to poor. When many traditional and common information technology accesses such as radio, news paper, television and telephone were able to transmit information to poor at cheapest price, how the modern information accesses such as internet and global language ability at higher price can improve the capability of poor in the term of information communication technology to poverty alleviation[5].

Present economic and sociological literatures combine capability of information accesses with poverty. According to the World Bank's new strategy of poverty alleviation, the **empowerment, security and capability** of poor are considered as key area in poverty alleviation (World Bank, 2002). The poor experience shortfalls in economic welfare; gaps in access to good quality education and health care; deficiencies in the provision of physical infrastructure; and political barriers that stifle personal initiative and self-development. They are unable to participate in governance, which is necessary for a healthy democracy and peaceful development. The poverty encourages corruption, anti-social activities like drugs, smuggling, prostitution, and all sorts of deviant behavior. The major issues to be covered by community media may include the need to manage the environment in a sustainable manner; exploding rate of population and urbanization; food security; human needs with regard to health, education and literacy; peace and democracy; and poverty reduction. All these challenges require capability of information accesses, supported by participatory process of social change. Capability of information accesses is an essential element in this process because by establishing a dialogue with people it can empower people to take decisions for their own development, increased participation, provide information as a basis for change, and innovation, and help in sharing of knowledge and development of skills in addressing their problems. Until development of information infrastructures is recognized as an essential component of sustainable development strategies by policy and decision-makers there will be little hope for use of capability of information accesses as resource for development interventions.

[3] Communication is difficult to define. The world is abstract and, like most words possesses numerous meaning. (Stephen W., p.6, 1996)
[4] See Global Knowledge Partnership (2003)
[5] News paper and radio are cheapest information accesses to poor in rural. In Sri Lanka many farmers even they are literacy, they do not read news paper for purposes of their farming activities.

II. Literature Review

. Manabi M. et al. (2001) concludes that capability failure is one of the major causes for disparities in income and wealth in India. Anuradha J et al (2000) emphasizes the information environment which comes from quality information infrastructures for poverty reduction. Martin C et al (1993) shows that in the changed world economy, the source of higher productivities are increasing depend on stock of knowledge based on information infrastructures. William J.Drake (1995) concludes the role of information infrastructures which helped to rapid economic development of United States. Miria A. Pigato (2001) investigates among Sub –Sahara African and South Asian countries that the relationship between information communication technology and poverty. He uses internet, mobile phones and satellite network as measures of ICT accesses. Phil Marker et al (2002) suggest that creating information rich society is key element of poverty reduction and sustainable development. Subhash Bhatnagar (2000) shows many benefits of ICTs to both beneficiaries and development agencies of information technologies. Rural people are able to get more benefits from information technologies. Pakistan's first quarterly report of economic development (2007) highlights many advantages which achieved from ICTs by many developing countries. ICT reduces transaction cost in India's rural sector. Auto Bank E of South Africa has helped to poor in the ways of increasing saving.

Portfolio manager in India, Taninet in Malaysia, China central radio and Television University in china, Integrated learning centre I Lao PDR, Digital broadcasting initiative in Nepal and **Kothmale community radio in Sri Lanka** having benefits to poor through ICTs. China central radio and Television University has 1.5 million student and lectures are broadcasted though radio and television. Radio based awareness increasingly playing a crucial role in the fight HIV/AIDS and other diseases. International labor organization notes that some developing countries are able to create thousands of new jobs for women and men. Grameen Bank in Bangladesh has provided around 1100 telephones to the rural poor women through the micro credit loans. These women are making profits by selling airtime to others in villages. ICTs empower rural farmers and artisans in rural areas. In Ghana radio is cheapest form of mass media has helped farmers increase their revenues and improve their farming practices.

Telecenters in India are one of the most rapidly growing applications of ICTs in the developing world. Their rationale lies in shared-access models that allow provision of a wide range of services to more users at lower cost than privately-owned home of office computers which are often out of financial reach of poor people. Telecenters aim to stimulate and respond to the demand for information and communication services. There are many types of telecenters. A typical telecenter provides "access to telephones, faxes, photocopying machines, email and Internet services." The goal is to lead towards the creation of "micro-enterprises," as these will be the "wealth creators."

PlaNet Finance in China is a non-governmental organization involved in promoting the application of ICTs to microfinance programs. In Dahua County, farmers are learning basic computer skills. The primary goal is to provide farmers access to basic market information. An example of basic market information is as follows: "In the village of Wuhan in Hebei Province, farmer Li Suotian received continuously updated information on tomatoes. He found out that Israeli breeds of tomatoes sold well in Hebei. He then grew more than 1 mu (0.07 hectares) of tomatoes and obtained an annual income of 3,500 yuan ($US 421) from them. That income was eight times his normal income from grain growing.[1]" The training will prepare to reduce the economic disparity as government, and social services move online. China's ministries of science and technology, in partnership with the United Nations Development Program (UNDP) are initiating similar projects to counties of Chongqing Municipality, Hebei, Anhui, Henan, and Shaanxi provinces. In Cambodia, and India, entrepreneurs are utilizing the Internet to market handicrafts. Through the Internet, these entrepreneurs are able to establish lines of credit with banking institutions abroad and domestic micro financing sources, thus affording them the opportunity to market their goods on the global market.

There have been number of government initiatives, particularly, in south Asia, which have used information technology to enhance rural development programs and improved the delivery of public services. Some of these projects have been quite successful. Some had problems and closed due to the reduction of enthusiasm, inadequate financial resources, lack of government supports and lack of administration related with social responsibility (Subhash B,2000).

Lakshman W.D(1997) concludes that inadequate capital formation, social exclusion via low domestic savings, the slow growth of a national industrial class for foreign investors to draw partner from, certain policy inconsistencies, inadequate business confidence, poor infrastructures facilities, fragmented nature of country's industrial nature, ethnic conflict, gender inequalities and agriculture based social system constrained social and physical capital accumulation and restricting the process of creating jobs and other income earning opportunities and poverty in Sri Lanka. E Lanka project has been started in. Sri Lanka which is on the cusp of a transformative

change, one that will bring about a new wave of social and economic development built on a peaceful, equitable foundation. Sharing a strong belief in ICT as an enabler of development and as a key determinant of the competitive advantage of nations, the government, private sector and other stakeholders within Sri Lanka have developed a vision for an 'e-Sri Lanka' - a vision that will bring the benefits of ICT to every village, to every citizen, to every business and will revolutionize the way government operates. But poverty in Sri Lanka is still largely a rural phenomenon. Nearly half the poor depend on agriculture for livelihood. Another 30 percent depend on other rural nonagricultural activities. Regional variations in poverty are widening. Female-headed households are associated with greater poverty only in the urban sector. Poorer households tend to have higher dependency ratios, fewer years of schooling, lower rates of participation in the labor force, and significantly higher rates of unemployment. Direct transfer benefits from the Food Stamp Program are progressive and have a greater impact on poverty than uniform allocations from the same budget. Economic growth could reduce poverty considerably. Through E.Lanka strategy which encompasses building the implementation capacity; building the information infrastructure and an enabling environment; developing ICT human resources; modernizing government and delivering citizen services; and leveraging ICT for economic and social development through public-private partnerships, the Sri Lankan administration hopes to realize its main goals of peace, growth and equity. E-Sri Lanka will be highly conducive to the growth process by stimulating the IT industry, and by raising the competitiveness of existing industries. It is expected that rural poverty will reduce sharply by E. Lanka.[6] This study does not evaluate the impact of E Lanka project since it is in initial stage. We can see the relationship between capability of information accesses and level of poverty among the regions in Sri Lanka.

III. Model and Data

This study investigates the impact of capability of information accesses on poverty level of households in 106 divisional secretariats (DS) of Sri Lanka from 17 districts by using an econometric model. Following model is used to investigate the impact of information accesses on poverty and whether differences of capability of information accesses among DS have a significant effect on poverty level of DS in Sri Lanka or not. This study tests our research hypothesis in two stages.

1. Testing of hypothesis among 106 DS with traditional information accesses.
2. Testing of hypothesis among 17 with traditional and modern information accesses.

A traditional information access (TIA)covers three measures.

1. Literacy Rate (LR),
2. Farmer's educational level (FE)
3. Institutionalization or formal economic activities (INS).
4. Uses of electronic traditional (TV, Radio) information accesses (ETIA)

Modern information accesses(MIA) include two measures.

1. Capability of information communication technology (CICT)
2. Capability of English language ability. (CELA)

Poverty = $b_1\mathbf{N} + b_2\mathbf{A} + u$

N is vector for fundamental cause of poverty, A is vector for objective variables of information accesses, and u is error term. N represents one sole variable for a fundamental cause of poverty is physical assets of household, measured by percentage of household without any land[7] (NL). **A** represents two types of information accesses. First one is traditional variables for capability of information accesses: Literacy Rate (LR), Farmer's educational level (FE), Institutionalization (INS) and Uses of electronic traditional (TV, Radio) information accesses (ETIA).

[6] However, I'm much more impressed by the possibilities for this initiative to have an impact on poverty. The poverty reduction strategy has connectivity as a major theme. We have a major growth pole within the western part of the country where growth has been concentrated for the last 20 years. There are a number of reasons why that growth doesn't trickle down. It will not trickle down unless the connections to the rest of the country, and especially the connections between the capital, the tourism area, the industrial area in the west, and the rural areas are improved so that the economic activity between them can be much more linked. It can happen through infrastructure improvement, but we believe greatly that connectivity can also be improved by literally connecting people through information. By Petter Harrold, World Bank, Country director for Sri Lanka, available at http://topics.developmentgateway.org/ict/sdm/previewDocument.do~activeDocumentId=868135

[7] We take ownership of land as a measure to indicate the wealth of household since 90 percent of selected DS engaged in agricultural activities mainly.

Second one is modern information accesses such as capability of information communication technology and ability of English language[8]. We select a sample of 106 divisional secretariats divisions out of 251 from 17 administrative districts in Sri Lanka[9]. This sample covers around 40 percent of divisions from all regions except Northeast of Sri Lanka. Basically, household's poverty level in divisional secretariats (DS) can be shown by following function in the context of traditional and modern information accesses.

$PNP_t = g (NL_t, CIA_t)$

$NL_t > 0, \quad CIA_t < 0$

PNP_t – Percentage of household population under the national poverty level in DS and districts

Capability of Information Accesses $(CIA)_t = f(TIA_t \; MIA_t)$

$= f (LR_t, FE_t, INS_t, ETIA_t, CICT_t, CELA_t)$

$f_1>0, f_2>0, f_3>0, f_4>0, f_5>0$ and $f_6>0$.

$PNP_t = g (NL_t, LR_t, FE_t, INS_t, ETIA_t \; CICT_t, CELA_t)$

$g_1>0, g_2<0, g_3<0, g_4<0, g_5<0, g_6<0$ and $g_7<0$.

Where t indicates the time. We use the year 2001 which is a sociopolitical and economic survey year.

Table 1: Variable and measurement

Measures	Label	Reasons
Percentage of household population under the national poverty	PNP	Our main objective dependent variable.
Percentage of landless household population	NL	Fundamental cause of poverty in agricultural areas. It indicates status of physical assets of household population.
Percentage of household population with literacy	LR	Basic tool to access information. It indicates the basic capability of information accesses among the households population.
Percentage of farmers passed ordinary level education(O/L) or above	FE	Basic educational qualification for information accesses. . It indicates the educational capability for information among the farmers.
Percentage of paid family workers	INS	Captured to indicate the institutionalized or formal economic activities which are indicators for capability of society to accesses information via institutions.
Percentage of household population using electricity for lighting	ETIA	Captured to measure the electrical capability of household population to use electronic information accesses such as radio, TV, and other electronic media.
Percentage of teachers who have computer awareness.	CICT	Captured to measure the capability of population in districts are able access information via information communication technology for empowerment of people.
Percentage of people who can read and write English	CELA	Captured to measure the capability of people in districts to communicate with others internationally and nationally to increase their empowerment in open economy.
Index for capability of traditional information accesses	ICTIA	Computed by author based on LR,FE, INS and ETIA to compare with modern measures of information accesses. It shows overall capability of traditional information accesses
Index for capability of modern information accesses	ICMIA	Computed by author based on CICT and CELA to compare with traditional measures of information accesses It shows overall capability of modern information accesses
Percentage of rejected votes in general election 2001	RVOTE	A proxy variable to measure the capability of information accesses of household population among districts
Time	t	Indicates the year 2001 of data

[8] Modern accesses for information accesses are included and tested in districts level analysis not in the DS level analysis due to the availability of data.

[9] We do not include the divisions of northeast provinces of Sri Lanka which is a war region due to the unavailability of data. We exclude one division of Colombo districts from these data source since it does not activities of agricultural sector.(Capital of Sri Lanka)

We collect data from a census of population and housing which have done by statistics and census department of Sri Lanka in 2001. Data related computer awareness is taken from a reports prepared by Dr Amera Sarathasinge, department census and statistics, Sri Lanka. Following equations are used to investigate the effect of capability of information accesses on level poverty among the divisional secretariats as well as among districts. .

Sample is 106 divisional secretariats (DS) of Sri Lanka.

$PNP_t = B_0 + B_1NL_t + e_t$ (1)
$PNP_t = B_0 + B_1NL_t + B_2LR_t + e_t$ (2)
$PNP_t = B_0 + B_1NL_t + B_2FE_t + e_t$ (3)
$PNP_t = B_0 + B_1NL_t + B_2INS_t + e_t$ (4)
$PNP_t = B_0 + B_1NL_t + B_2ETIA_t + e_t$ (5)
$PNP_t = B_0 + B_1NL_t + B_2ICTIA_t + e_t$ (6)

Sample is 17 districts of Sri Lanka.

$PNP_t = B_0 + B_1NL_t + e_t$ (1)
$PNP_t = B_0 + B_1NL_t + B_2LR_t + e_t$ (2)
$PNP_t = B_0 + B_1NL_t + B_2FE_t + e_t$ (3)
$PNP_t = B_0 + B_1NL_t + B_2INS_t + e_t$ (4)
$PNP_t = B_0 + B_1NL_t + B_2ETIA_t + e_t$ (5)
$PNP_t = B_0 + B_1NL_t + B_2ICTIA_t + e_t$ (6)
$PNP_t = B_0 + B_1NL_t + B_2CICT_t + e_t$ (7)
$PNP_t = B_0 + B_1NL_t + B_2ICELA_t + e_t$ (8)
$PNP_t = B_0 + B_1NL_t + B_2ICMIA_t + e_t$ (9)
$PNP_t = B_0 + B_1NL_t + B_2RVOTE_t + e_t$ (10)

IV. Empirical Evidences from DSs and Districts.

From our data of 106 divisional secretariats, we estimate the correlations among the variables and coefficients of variables in regression analysis. Table (3) and Table (4) show the correlations among poverty and fundamental cause of poverty as well as the poverty and both traditional and modern information accesses among DSs and districts. Household population without land among DS positively correlated with national poverty level of households. Literacy rate, farmer's educational level, institutionalization and uses of electronic accesses are positively correlated with poverty. The correlation between index for capability of traditional information accesses and poverty is higher than correlation between land and poverty. Even all those information accesses depends on income of households, information capability of households is playing an important role in determination of poverty. Traditional information accesses have more value of correlation coefficient than modern accesses. They are more than 60 percent. Any projects which planed to alleviate poverty must be formulated to improve the empowerment of information capability to poor population. The correlation between poverty and capability of people's information accesses, measured by percentage of rejected votes during 2001 national election is also negative and more than 56 percent.

Table 2.1: Correlation Matrix among variables (106 DS)

Variables	NL	LR	FE	INS	ETIA	ICTIA
PNP	0.1848	-0.6324	-0.5105	-0.3906	-0.4852	-0.5691
NL	1	-0.1311	-0.3011	-0.1762	-0.2262	-0.2794
LR		1	0.5826	0.4516	0.4311	0.6958
FE			1	0.5765	0.7577	0.9484
INS				1	0.5499	0.7839
ETIA					1	0.7540
ICTIA						1

Table 2.2: Correlation Matrix among the variables (17 Districts)

Variables	NL	LR	FE	INS	ETIA	ICTIA	CICT	CELA	ICMIA	RVOTE
PNP	0.39367	-0.7553	-0.6823	-0.4665	-0.551	-0.6947	-0.3703	-0.5496	-0.6242	0.5515
NL	1	-0.4085	-0.4680	-0.3655	-0.333	-0.4662	-0.222	-0.3076	-0.3543	0.2297
LR		1	0.6654	0.6824	0.4606	0.7674	0.3610	0.5793	0.6486	-0.8367
FE			1	0.7515	0.8542	0.9766	0.2138	0.6528	0.6696	-0.5235
INS				1	0.6328	0.8613	-0.0955	0.4984	0.4290	-0.6804
ETIA					1	0.8176	-0.0033	0.6465	0.5948	-0.3282
ICTIA						1	0.1826	0.6567	0.6633	-0.6459
CICT							1	0.0846	0.3956	-0.1979
CELA								1	0.9485	-0.3272
ICMIA									1	-0.3644
RVOTE										1

According to the regression results of Sri Lanka in table 3.1 and 3.2, the traditional information accesses have a strong significant impact on poverty whereas modern accesses have less significant effect. Indexes for both types of information accesses have different significant effect on poverty with similar signs. In a comprehensive view of correlation and regression analyses in Sri Lanka among both DSs and districts levels shows that the capability of people's traditional and modern information accesses are playing key role in poverty reduction than physical wealth of people measured by land ownership. Any policies formulated to alleviate poverty can be took placed to improve the empowerment of poor through the upgrading of capability of information accesses to backward area by developing various means of information accesses. Literacy rate, education to farmers, institutionalization and electrical infrastructure are key means. In the case of modern information accesses, even computer awareness and English language ability have negative effect on poverty; they do not have significant effect on poverty in Sri Lanka. This result may become significant when we use the different measures to measure modern information accesses such as telephones and internet users. Unfortunately, we could not get data on those modern information accesses in DS and districts level of Sri Lanka. However we can come to conclusion on that modern information accesses without traditional accesses can not alleviate poverty in rural. Both types of accesses are important for poverty reduction or alleviation. Phil Marker el ct (2002) pointed out that no single technology is a magic bullet to all needs of poor and traditional (old) and modern (new) information accesses will be appropriates in difference circumstances. The results of this study also show that technology is not a goal in itself, but a means of achieving development goals. Education and skills are key enablers of the effective uses of ICTs. Sociopolitical and economic environment also affect the uses and maintenances of information accesses.

News paper and radio are cheapest information accesses to poor in rural. In Sri Lanka many farmers even they are literacy, they do not read news paper for purposes of their farming activities. In some commodity centers, the news papers and magazines are not maintained in a proper way. Social responsibility is very low due to the lack of literacy and other socioeconomic factors. How can those societies able to maintain the high cost information accesses for their socioeconomic activities. Poverty reduction through the information communication technology will become ineffective unless society enriched traditional information accesses, particularly literacy and education.

Table 3.1
Impact of capability of information accesses on poverty among DSs of Sri Lanka
(Dependent Variable: Percentage of people under national poverty)

In ,Variables	(1)	(2)	(3)	(4)	(5)	(6)
NL	0.197**	0.11	0.036	0.128	0.084	0.0299
	(1.91)	(1.35)	(0.39)	(1.31)	(0.898)	(0.339)
LR		**-0.91***				
		(8.1)				
FE			**-0.361***			
			(5.63)			
INS				**-0.256***		
				(4.02)		
ETIA					**-0.159***	
					(5.3)	
ICTIA						**-0.375***
						(6.65)
R^2	0.112	0.412	0.261	0.167	0.241	0.326
Observations	106	106	106	106	106	106

Regressions are estimated by ordinary least squares methods. Significant levels are indicated by *, **, and *** which donate 1, 5, and 10 percent respectively. t- Statistics are in parentheses. Intercept is included not mention in table.

Table 3.2
Impact of capability of information accesses on poverty among districts. (Dependent Variable: Percentage of people under national poverty)

In ,Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
NL	0.857**	0.222	0.207	0.561	0.084	0.194	0.713	0.54	0.429	0.614
	(1.65)	(0.537)	(0.43)	(1.05)	(0.898)	(0.412)	(1.36)	(1.10)	(0.91)	(1.3)
LR		**-1.21***								
		(3.75)								
FE			**-0.406***							
			(2.9)							
INS				**-0.338**						
				(1.52)						
ETIA					**-0.159***					
					(5.3)					
ICTIA						**-0.411***				
						(3.02)				
CICT							**-0.373**			
							(1.24)			
CELA								**-0.43****		
								(2.1)		
ICMIA									**-0.31****	
									(2.55)	
RVOTE										**2.17****
										(2.25)
R^2	0.154	0.579	0.472	0.275	0.241	0.488	0.239	0.357	0.423	0.379
Observations	17	17	17	17	17	17	17	17	17	17

Regressions are estimated by ordinary least squares methods. Significant levels are indicated by *, **, and *** which donate 1, 5, and 10 percent respectively. t- Statistics are in parentheses. Intercept is included not mention in table.

V. Conclusion

The present approach after 2000 to poverty alleviation by improving empowerment and security through the upgrading capability of information accesses of people has been tested in this study in the context of Sri Lanka's experiences. Our measures of information accesses have a negative effect on poverty. The traditional measures such as literacy, education of farmers, radio and TV and institutions have a negative and significant effect on poverty among divisional secretariats and districts of Sri Lanka. The modern information accesses such as information communication technology and English language efficiency also have negative effect on poverty but they do not have significant effect on poverty. Even a developing country has been adapted with information technology and development of international language for empowerment of people which is present trends of world economy, such a country can not alleviate poverty unless traditional sources of capability of information. The viewpoint, as some recent qualitative studies over emphasized that development of information and communication technology to rural sector will reduce or alleviate poverty is a viewpoint without considering ground conditions of rural people. Empowerment of poor people can be increased by both traditional and modern sources of information accesses. But the important concern is that first, the traditional sources such as literacy, electronic information accesses etc must be developed. Then the modern accesses can be adapted. The development of modern information accesses in rural sector for poverty alleviation or reduction without improvement of traditional accesses will be as a tree without root. According to the literature review in qualitative analysis, some telecenters in Ghana, Senegal and Sierra Leone have assisted to farmers through the educated staffs in rural areas in the ways of marketing of output, input delivery, channeling doctors, children's higher education and conducting government department. But they could have increased the empowerment of staffs and their relatives of them instead of beneficiaries who have been living under poverty line. Both information accesses reduce the poverty in Sri Lanka. Traditional accesses are more significant whereas modern accesses have less significant. Even we have modern information accesses, Sri Lanka's cross sectional study shows that one developing countries can not alleviate poverty without traditional information accesses, specially education.

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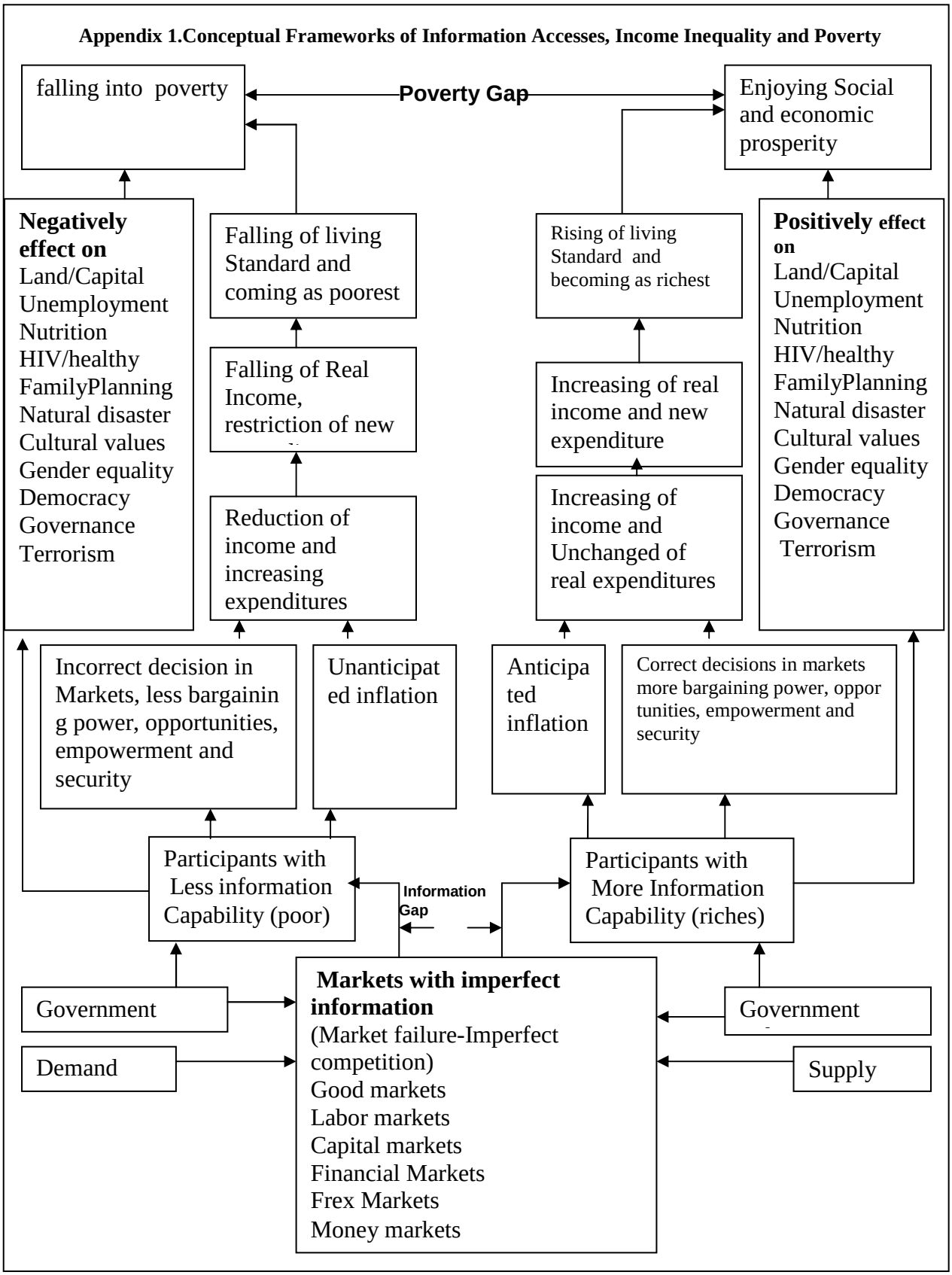
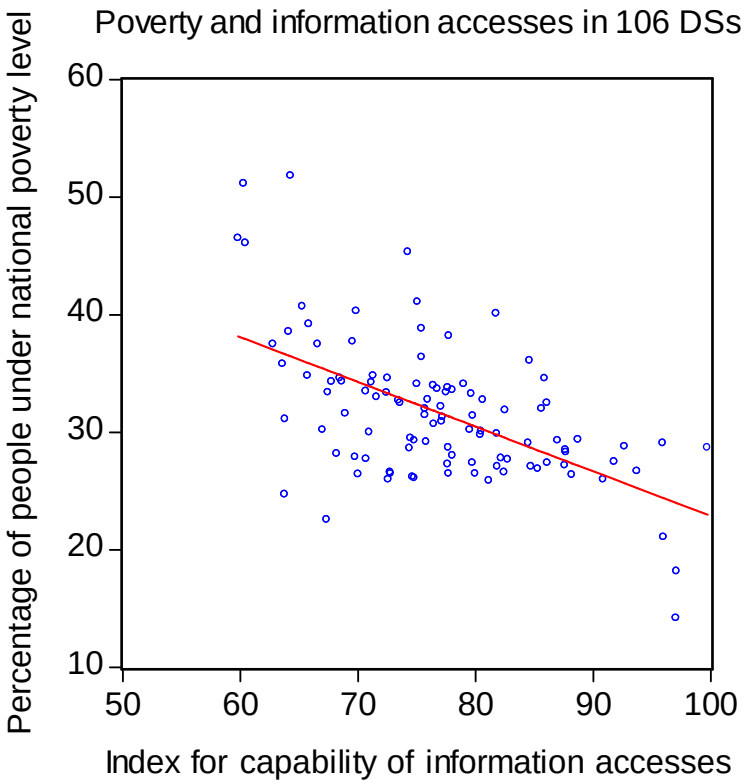
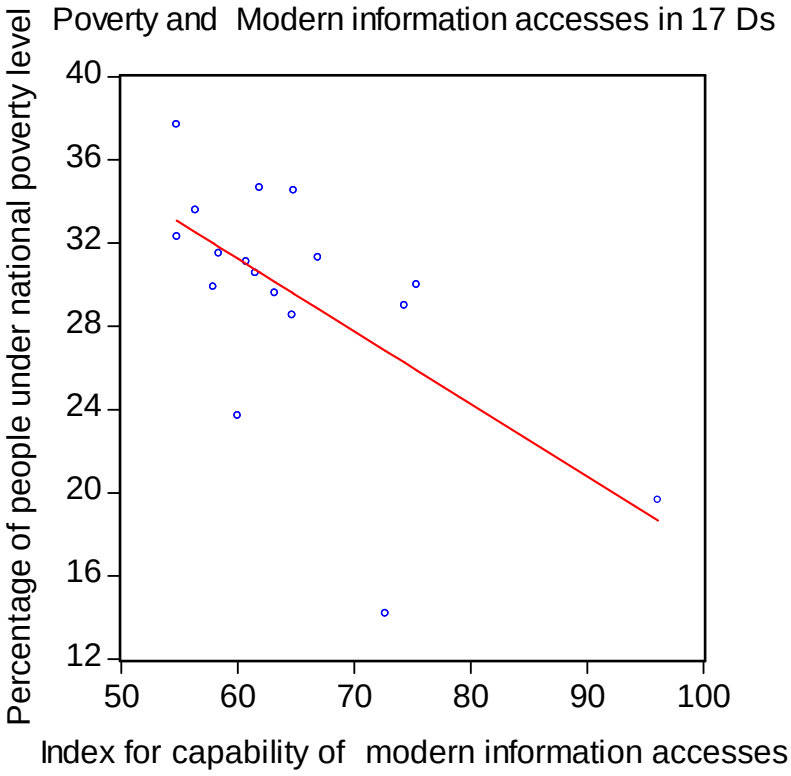
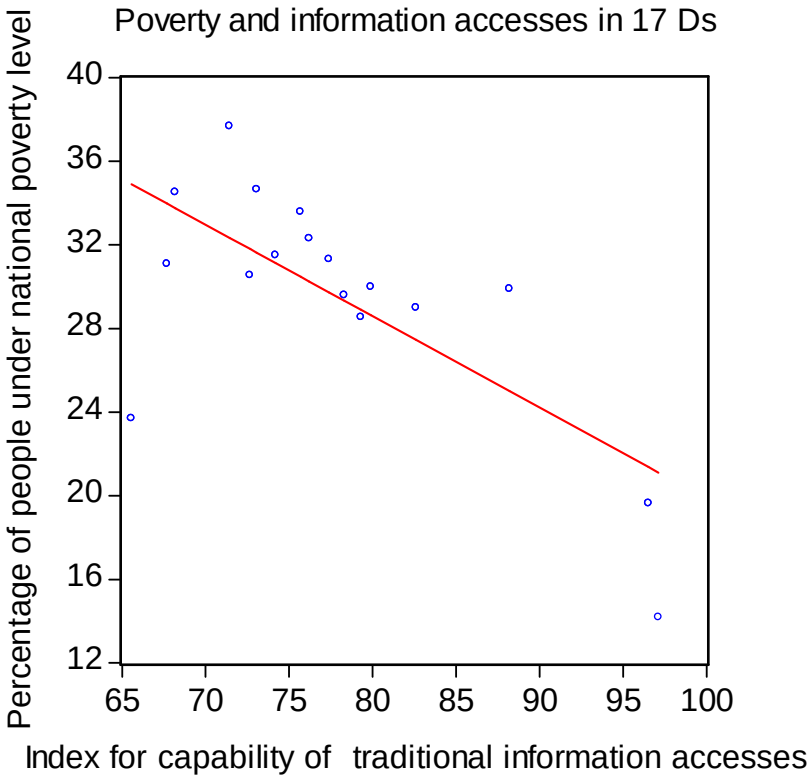
Appendix 1.Conceptual Frameworks of Information Accesses, Income Inequality and Poverty



Appendix 2: Scatter Plots.







Appendix 3: Selected districts.

Colombo	Hambantota
Gampaha	Anuradhapura
Kulutara	Polonnaruwa
Kandy	Badulla
Matale	Moneragala
Nuwaraeliya	Ratnapura
Galle	Kegalle
Matara	Kurunegala
Puttam	