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The Rural ICT Investment Design Framework: Case Study on Rural Nepal Communities

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Rural Development, ICT, and Innovation: Their Linkages

- Consensus on the contribution of ICT
 - Positive contribution of ICT for economic development for the advanced countries but mixed evidence for the cases of developing countries
- ICT for rural development
 - Acknowledged by development agencies
 - Potential contribution in terms of;
 - ✓ Information sharing
 - ✓ Provision of educational opportunity
 - ✓ Efficient public services

Rural Development, ICT, and Innovation: Their Linkages

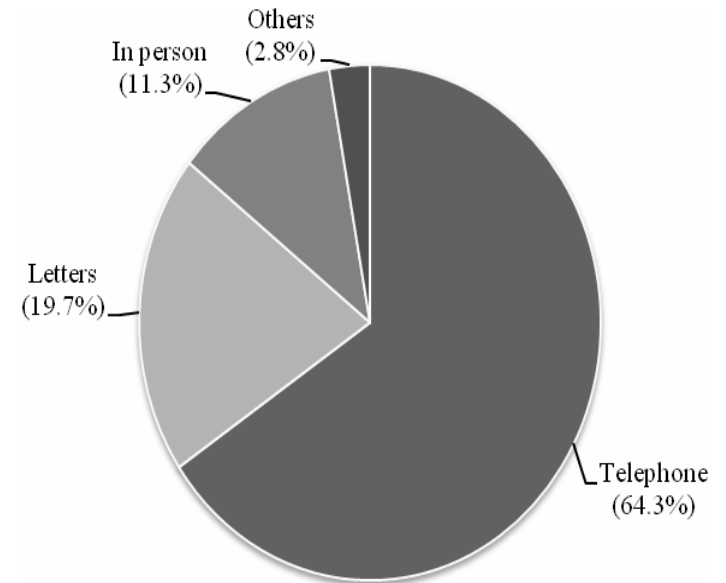
- Caveats in the prevailing discussion
 - Sustainability
 - Characteristics of rural community
- Innovation for rural development
 - Key factors for innovative rural community
 - ✓ Information sharing regarding input and output market
 - ✓ Exposure to state-of-the-art technologies
 - ✓ Strong institutional arrangement with efficient policy delivery
 - ✓ Strategic investment for future growth.
- ICT for Innovation

Case: Community Assessment

Composition of household expenditure (%)

Categories of expenditure (%)	Lower income group (n=188)	Middle income group (n=189)	Upper income group (n=189)
Food	69.46	61.39	48.92
Education	14.03	24.05	28.5
Health	8.94	6.4	9.45
Rent	1.73	3.11	5.24
Maintenance	1.67	1.98	4.82
Water	0.55	0.36	0.28
Electricity	3.61	2.71	2.8
Fixed and mobile communication	6.78	6	6.39

Mode of Communication (%)



Case: Community Assessment

Level of Physical Infrastructure

Items	Percentage of owners (%)
Electricity	79.6
Color TV	41.7
BW TV	29.3
Radio	78.1
Motor Cycles/Moped	10.5
Telephone	21.6

Level of Education (%)

Non- educated	Educated (total: 67.8%)							
	Up to 4th	5th	6th-8th	9th-10th	11th-12th	Gra- duate	Post Gra- duate	Tech- nical
32.2	12.0	7.3	14.7	19.1	9.1	4.3	1.0	0.3

Case: WTP

Results for the First Stage Regression of the Choice Model

Variables		Estimates	Standard errors	P> z
Personal characteristic Variable	Age	0.0709	0.142	0.618
	Age*age	-0.680E-3	0.00146	0.641
	Income	1.190E-5	7.940E-6	0.135
	Edu	0.299	0.190	0.116
Personal environment variable	Electricity	0.835	0.589	0.156
	Motor	-0.115	1.239	0.926
	Phone	1.398	0.902	0.121
Experience of ICT system	Telecenter***	-3.470	1.325	0.009
	Computer access	0.204	0.806	0.8
Experience of non-ICT system	No. of visit	0.366	0.358	0.306
	Travel cost	-0.00254	0.00420	0.545
	_cons	36.259		

Case: WTP

Results for the Second Stage Regression of WTP Analysis

Variables		Estimates	Standard Errors	P> z
Personal characteristic variable	Age	-0.00509	0.0108	0.639
	Age*age	0.830E-4	0.000111	0.456
	Income	0.523E-9	0.211E-8	0.805
	Edu*	0.0305	0.0184	0.099
Personal environment variable	Electricity	0.0202	0.107	0.850
	Motor	-0.0404	0.0942	0.669
	Phone**	0.177	0.0695	0.012
Experience of ICT system	Telecenter	-0.0632	0.104	0.543
	Computer access	-0.0633	0.0653	0.333
Experience of non-ICT system	No. of visit	0.0282	0.0261	0.279
	Travel cost	0.000111	0.000161	0.491

Implications

- Findings from case study
 - Human resources are well prepared and investment for education is high
 - Needs for active information sharing is high
 - The mode of communication is not well developed
 - Public service provision is inefficient and WTP for efficient transaction is high

Implications

- Design principles
 - Hardware design: Appropriate location
 - Contents design: Business related services
 - Sustainability: Innovation opportunities
 - Capacity building: Entrepreneurship