

Impact of Investment in and Utilization of ICTs on Market Extension

Overview of Small and
Medium Enterprises in
Tanzania

By

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Acknowledgement

East Africa SMEs Survey was conducted from 1999-2001 as part of the Enterprise Research Program (ERP) and was conducted collaboratively by Center for Development Research (ZEF) of Bonn University and four Universities from East Africa namely: Kenyatta and Maseno (Kenya), Dar es Salaam (Tanzania) and Makerere (Uganda). It covered 450 SMEs, 150 from each of the three East African economies.

The dataset was availed for the study by Prof. A.S.T Matambalya of the University of Dar es Salaam and the Center for Development Research.

The Terms SMEs, ICTs and Market Expansion

- This study adopted the definition of SMEs as postulated by the SMEs Development Policy of Tanzania using the size criterion depending only on the employment. The policy has classified SMEs as comprising of 5-49 employees and 50-99 employees, respectively.

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- Information and Communication Technologies (ICTs) has been defined as office computing, accounting and information processing machinery and equipment which include computers, communication equipment, scientific and engineering instruments, photocopiers and related equipment and software and related services

(Brynjolfsson and Young 1996, p182)



- Market Expansion

The process of securing additional markets in alternative geographic areas by an enterprise for its end-products


Introduction

- SMEs (driving engines for econ. Devt.) play a dynamic role in promoting economic growth and development
- Offer increased employment and creation of income opportunities
- In Tz the SME sector is believed to contribute about 1/3 of the Gross Domestic Product
(The Economic Survey, 2002)

- There is growing potential of ICTs (as enabling/empowering tech.) to facilitate development of SMEs
- ICTs play an increasingly important role in determining the way business is conducted
- Their contribution to organizational effectiveness leads to higher productivity e.g. GrameenPhone phones program in rural Bangladesh – had a considerable +ve effect on the production surpluses (Chowdhury, 2001)

Statement of the Problem

- ICTs being a recent phenomena little is known about the impact of their use on contemporary organizations and enterprises in Tz.
- Tz like other developing countries have embraced ICTs in SMEs as the catalyst for development.

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- There is relatively little or lack of systematic study of links between investment and utilization of ICTs by SMEs and the contribution of ICTs particularly to regional expansion of end-products markets of enterprises.
 - This paucity of knowledge limits efforts to assist SMEs operators in their quest to find new markets and thereby negatively affecting the size of their markets. This therefore, presents a knowledge gap.

Objectives of the Paper

General Objective


To discuss the link between the investments in/utilization of ICTs by Tanzanian SMEs and market performance of such SMEs, by looking at their geographical extension.

Specific objectives

- To explain studied impact of investments in ICTs by Tanzanian SMEs on accessing information on product markets
- To illustrate the impact of utilization of ICTs by Tanzanian SMEs on accessing markets for end-products thereby increasing their market outreach
- To discuss the interlinks between ICTs and enterprise characteristics and between ICTs and other variables; and how they affect performance

Methodology

- The micro-level data of the East Africa SMEs Survey was used
- 118 sample SMEs from major commercial corridors in the country (Lake Zone, the Coastal Zone and Arusha region) were randomly selected and distributed equally in the food processing, textile and tourist sectors

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- The two key considerations in the determination of the sample regions were their economic significance and their ability to represent fairly the SMEs sector

Findings

- Regions and Enterprise's sector
- Types of ICTs used by SMEs to process, receive and disseminate information
- SMEs linked to public telephone
- Number of people in the enterprise using mobile phones
- SMEs using computer-based ICTs
- The way information on the WWW helped SMEs
- Amount SMEs invested in ICTs
- Contribution of ICTs on Enterprise's market expansion

Regions Vs Enterprise's Sector

- Majority of SMEs in the food processing (44.9%) and textile (53.3%) sectors were from DSM
- Majority of SMEs in the tourism sector (45.8%) were from Arusha

(See Table 1)

Table 1
Distribution of Enterprises by Region
and Enterprise's Sector

Region	Enterprise's Sector			Total
	Food processing	Textile	Tourism	
Mwanza	9	9		18
	18.4%	20.0%		15.3%
Arusha	6		11	17
	12.2%		45.8% ←	14.4%
Mara	7	9		
	14.3%	20.0%		
Dar es Salaam	22	24	9	16
	44.9% ←	53.3% ←	37.5%	13.6%
Urban West – Zanzibar	5	3	4	12
	10.2%	6.7%	16.7%	10.2%
	49	45	24	118
	100%	100%	100%	100%

Types of ICTs used by SMEs to process, receive and disseminate information

- most commonly used ones were mainly telephone, mobile phone, fax, and computer.

(See Table 2)

Table 2: Distribution by the use of ICTs by SMEs to process, receive and disseminate information and SME's Sector

Type of ICT used to process information	Food processing	Textile	Tourism
Computer			
No	32(65.3%)	33(73.3%)	4(16.7%)
Yes	17(34.7%)	12(26.7%)	20(83.3%) ↑
Typewriter			
No	34(69.4%)	35(77.8%)	19(79.2%)
Yes	15(30.6%)	10(22.2%)	5(20.8%)
Photocopier			
No	41(83.7%)	37(82.2%)	12(50.0%)
Yes	8(16.3%)	8(17.8%)	12(50.0%) ↑
No.of Enterprises=118	49	45	24

SMEs that are linked to Public Telephone

- High percentages were observed in all the three sectors for SMEs which were linked to public telephone
- Majority did not use mobile phones in all the three sectors
- Tourism sector had a higher percentage of SMEs with 1-3 people using mobile phones

(See Table 3 and 4 respectively)

Table 3: Distribution by Enterprises Link to Public Telephone and Enterprise's Sector

	Food	Textile	Tourism
Yes	31(64.6%) ↑	28(68.3%) ↑	22(91.7%) ↑
No we use commercial telephones	7(14.6%)	7(17.1%)	0
No we do not use telephone	10(20.8%)	4(12.2%)	2(8.3%)
Total No.of Enterprises=113	48	41	24

Table 4
Distribution by Number of People in the Enterprise using Mobile Phones and Enterprise's Sector

Number of people in the Enterprise who are using Mobile Phones	Food Processing	Textile	Tourism
0 →	28(58.3%)	33(73.3%)	5(20.8%)
1	10(20.8%)	6(13.3%)	3(12.5)
2	5(10.4%)	4(8.9%)	6(25.0%)
3	4(8.3%)	2(4.4%)	2(8.3%)
> 3	1(2.1%)	0	8(33.3%)
Between 1-3 →	19(39.6%)	12(26.7%)	11(45.3%)
Number of Enterprises=117	48	45	24

SMEs using computer-based ICTs (faxes and e-mail)

- A few number of SMEs in all the three sectors used computer-based ICTs
- Most of the SMEs which used computer-based ICTs were from the tourism sector

(See Table 5)

Table 5
Distribution by Enterprises using Computer-based ICTs (faxes and e-mail) and Sector

Type of Computer-based communication	Food Processing	Textile	Tourism
Fax			
No	49(100.0%)	44(97.8%)	15(62.5%)
Yes	0	1(2.2%)	9(37.5%)
E-mail			
No	38(77.6%)	40(88.9%)	7(29.2%)
Yes	11(22.4%)	5(11.1%)	17(70.8%)
Number of Enterprises=118	49	45	24

The way information on the World Wide Web (WWW) helped SMEs

- Majority of SMEs which utilized WWW were from the tourism sector with relatively low percentages.
- WWW helped SMEs:
 - increase the management efficiency
 - easier find new customers
 - access better and cheaper supply sources
 - be more competitive

The way information on the World Wide Web helped SMEs

	Food processing	Textile	Tourism
•Increase management efficiency	3/48 = (6.3%)	1/42 = (3.4%)	7/22 = (31.8%)
•Easier find new customer	4/48 = (8.3%)	1/42 = (2.4%)	7/42 = (31.8%)
•Access better and cheaper supply sources	2/49 = (4.2%)	-	2/21 = (9.5%)
•Be more competitive	3/48 = (6.3%)	1/42 = (2.4%)	7/22 = (31.8%)
•Enterprises which did not use WWW	44/48 = (91.7%)	35/42 = (83.3%)	11/22 = (50.0%)

Distribution by the way information on the World Wide Web helped SMEs and Enterprise's Sector

The way Information on the WWW helped SMEs /No.of valid counts	Counts/Percentage within the Enterprise's Sector		
	Food processing	Textile	Tourism
Increase the management efficiency / 112			
• Very significantly	3(6.3%)	1(3.4%)	7(31.8%)
• Not applicable	44(91.7%)	41(97.6%)	12(54.5%)
Total Counts	48	42	22
Easier find new customers /112			
• Very significantly	4(8.3%)	1(2.4%)	7(31.8%)
• Not applicable	44(91.7%)	41(97.6%)	12(54.5%)
Total Counts	48	42	22
access better and cheaper supply sources /111			
• Very significantly	2(4.2%)	-	2(9.5%)
• Not applicable	44(91.7%)	41(97.6%)	12(57.1%)
Total Counts	49	45	21
Be more competitive /112			
• Very significantly	3(6.3%)	1(2.4%)	7(31.8%)
• Not applicable	44(91.7%)	41(97.6%)0	12(54.5%)
Total Counts	48	42	22
SMEs which do not use WWW /112			
• No	4(8.3%)	7(16.7%)	11(50.0%)
• Yes	44(91.7%)	35(83.3%)	11(50.0%)
Total Counts	48	42	22

Annual Total Investments in ICTs

- Less or no investments at all was done by most SMEs in all the three sectors

SMEs that seemed to have made substantial investment in ICTs were from the tourism sector

(See Table 6)

Table 6
Distribution of Enterprise's Annual Total Investments in ICTs(in Tshs.'000) and Enterprise's Sector

Total Investments (in Tshs.'000)	Food Processing	Textile	Tourism
0 →	40(81.6%)	41(91.1%)	9(37.5%)
91 – 1,400	2(4.1%)	3(6.7%)	3(12.5%)
1,600 – 4,200	2(4.1%)	1(2.2%)	9(37.5%)
4,500 – 11,150	5(10.2%)	0	3(12.5%)
Overall (91-11,150) →	9(18.4%)	4(8.9%)	15(62.5%) ↑
Number of Enterprises = 118	49	45	24

Contribution of ICTs on SMEs Regional Market Extension

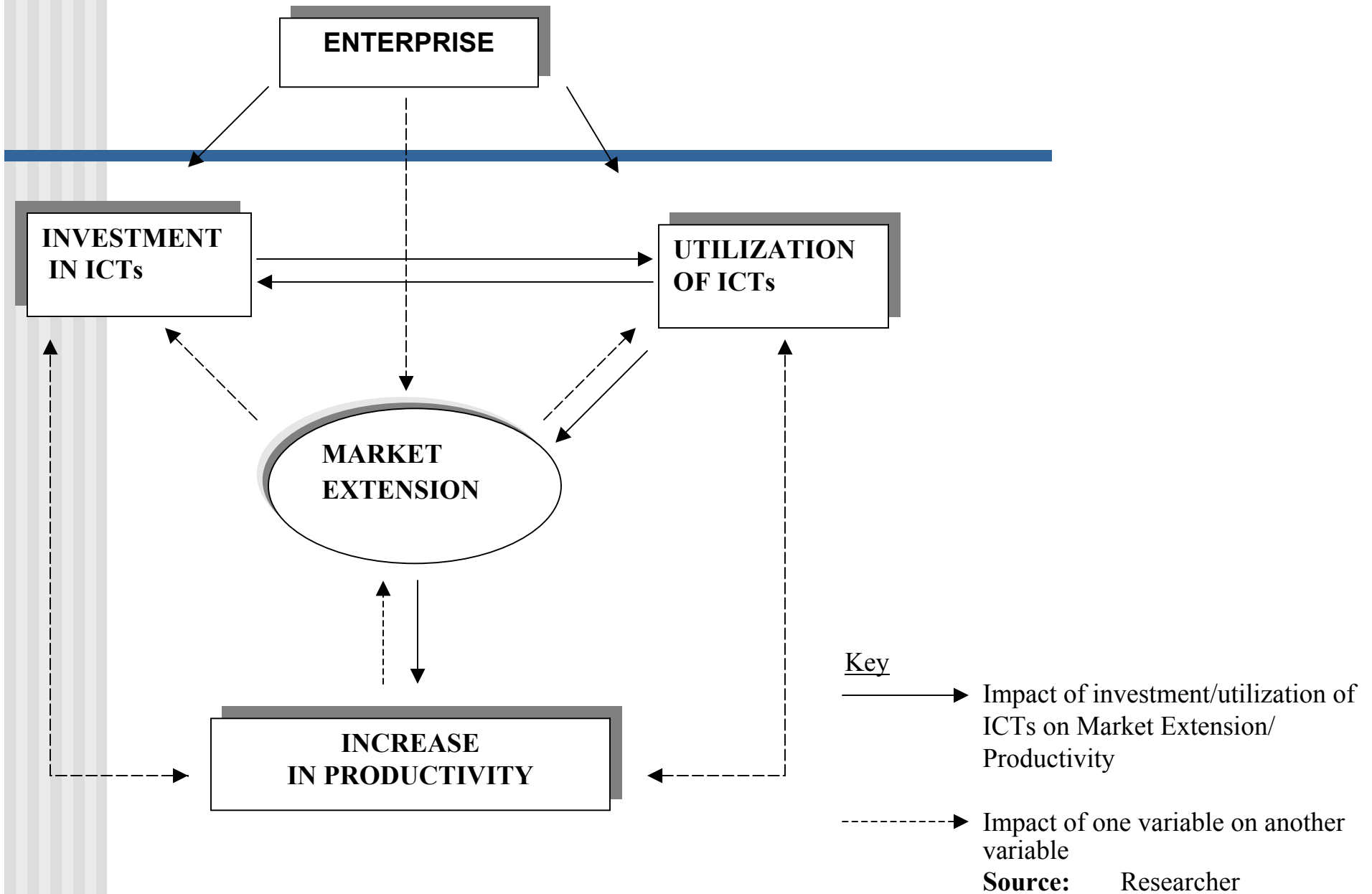
- Results showed that enterprises which utilized ICTs and especially relatively modern and cheap technology like mobile phones are the ones that got access to market information and thereby increased their chances to expand their markets regionally (most of the enterprises were from the tourism sector).

(See Table 7)

Table 7
Distribution by Contribution of ICTs on Enterprise's Regional Market Expansion and Enterprise's Sector


Contribution of ICTs on Regional Market Expansion	Counts/Percentage within the Enterprise's Sector		
	Food processing	Textile	Tourism
Fax			
Very significantly	4(9.3%)	3(7.0%)	12(52.2%)
No.of SMEs=109	43	43	23
Mobile phones			
Very significantly	9(18.4%)	9(20.0%)	10(41.7%)
No.of SMEs=118	49	45	24
Telephone			
Very significantly	20(41.7%)	12(26.7%)	13(54.2%)
No. of SMEs=117	48	45	24


Figure 1: Interlinks between Investment in ICTs and/or Utilization of ICTs by SMEs and the Market Extension



Lessons

- It does not matter whether returns start to be obvious in the long or short-run but the ultimate reward of investing in ICTs is advantageous to the enterprise.
- Investment in ICTs by SMEs leads to increased access to business information


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- Utilization of ICTs by SMEs leads to access of end-product markets and thereby increased market outreach and extension
 - Poor or lack of maintenance of ICT facilities has a long-run effect of improper functioning of the equipment


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- Relations between ICTs and enterprise characteristics and between ICTs and other variables that exist do affect market performance


(See figure 1)


Recommendations

- SMEs be advised accordingly on making relevant and appropriate investments in ICTs
- SMEs should be encouraged to use ICTs such as e-mail and internet taking advantage of e-commerce in marketing of their end-products and to reduce market uncertainty

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- There is a need to educate and encourage SMEs operators on the benefits of utilizing ICT facilities. These benefits include:
 - low transaction costs
 - support formulation of business networks
 - reduction of market uncertainties
 - Raise awareness among SMEs operators on the importance of maintenance on ICTs facilities in order for them to function properly for a long time.

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- Financial support schemes should be established to facilitate SMEs use of ICTs by financing their concerns such as:
 - investment/ utilization
 - consultation fees
 - maintenance and repair services charges
 - training fees

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- SMEs are advised and encouraged to form groups to facilitate the channeling of ICT-related resources and efforts to them
 - Concerted and cooperative efforts by various stakeholders is necessary if the issue of SMEs market extension, marketing of SMEs products and related issues are to be addressed

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- More information centers like the Tanzania Business Portal need to be established where SMEs can have access to accurate, relevant, appropriate and timely information.

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THANK YOU!