

# Factors Influencing Usage of the New Technologies in Low-Income Households in Kenya

By

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# Presentation outline

1. Background to the paper
2. Research Framework
3. Research Methodology
4. Findings
5. Conclusion
6. Policy Recommendation

# 1. Background to the paper

- 1) Emphasis has been on access and not usage. -Vision 2030, ICT policy and strategy documents.
  - CCK June 2011 Statistics shows that
    - Tele-density rose to 64.2% from 56.9% in September 2010
    - Mobile phones accounts for 63.2%.
  - There have been huge investments in the sector.
    - Quote from Heeks (2009) – *“Billions of US dollars are invested each year by the public, NGO and private sectors in information and communication technologies for development (ICT4D) projects... Yet we have very little sense of the effect of that investment”*.
- 2) Factors influencing the use of the technologies in LIH in Kenya have not been fully explored.
  - There are factors that influence usage beyond access.
  - Individual differences, capabilities and choice influences If goods and services are used and how – (Sen,1999)

## 2. Research Framework

- ❖ Paper uses the Capability Approach (CA) as the theoretical framework
  - CA argues that human development should be viewed as a process of expanding people's capabilities
  - It is concerned with what people are able to do and be as a result of using the resources around them.
  - Access to goods and services is a prerequisite to use, however, individual characteristics play a role on:
    - Whether to make use of these goods and services,
    - How to use them
    - Value attached to the usage and outcomes.

## 2.1 Context of The Paper

### ❖ Demographic factors

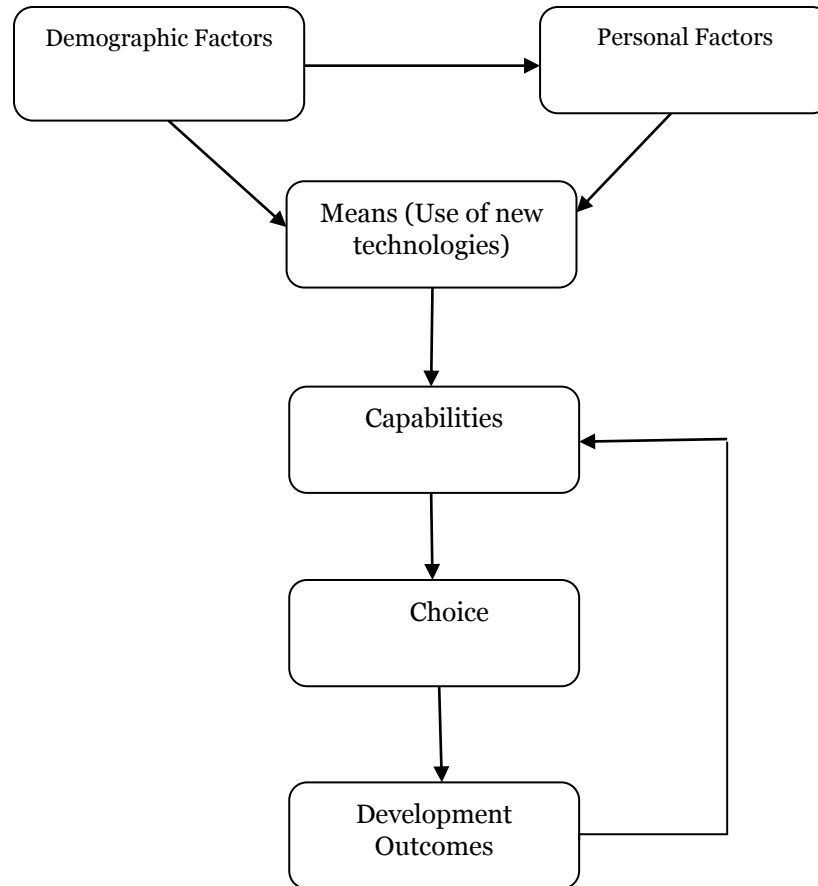
- Age
- Income
- Gender
- Marital status
- Education level
- Skills

### ❖ New technologies

- Internet
- Email
- Mobile phones

❖ LIH has income of below \$ 315.6 (KNBS, 2008)

## 2.3. Conceptual Framework



### 3. Research Methodology

- ❖ Use Primary and Secondary data sources
- ❖ RIA (2007) database= 1461 HH with 1291 LIH
  - Weighted to make it national representative
- ❖ Survey (2010) used a sub-set of RIA (2007) LIH clusters based in Nairobi
  - 60 HH randomly selected from 3 clusters. 40 HH LIH
- ❖ Secondary sources
  - Books, journals, economic surveys and online materials

# 3.1: Data Entry and Analysis

## ❖ Quantitative Data

- Data entered in Statistical Package for Social Sciences (SPSS)
  - Data cleaned and coded
- Data analysis.
  - Descriptive statistics
  - Correlation analysis
  - Regression analysis

## ❖ Qualitative

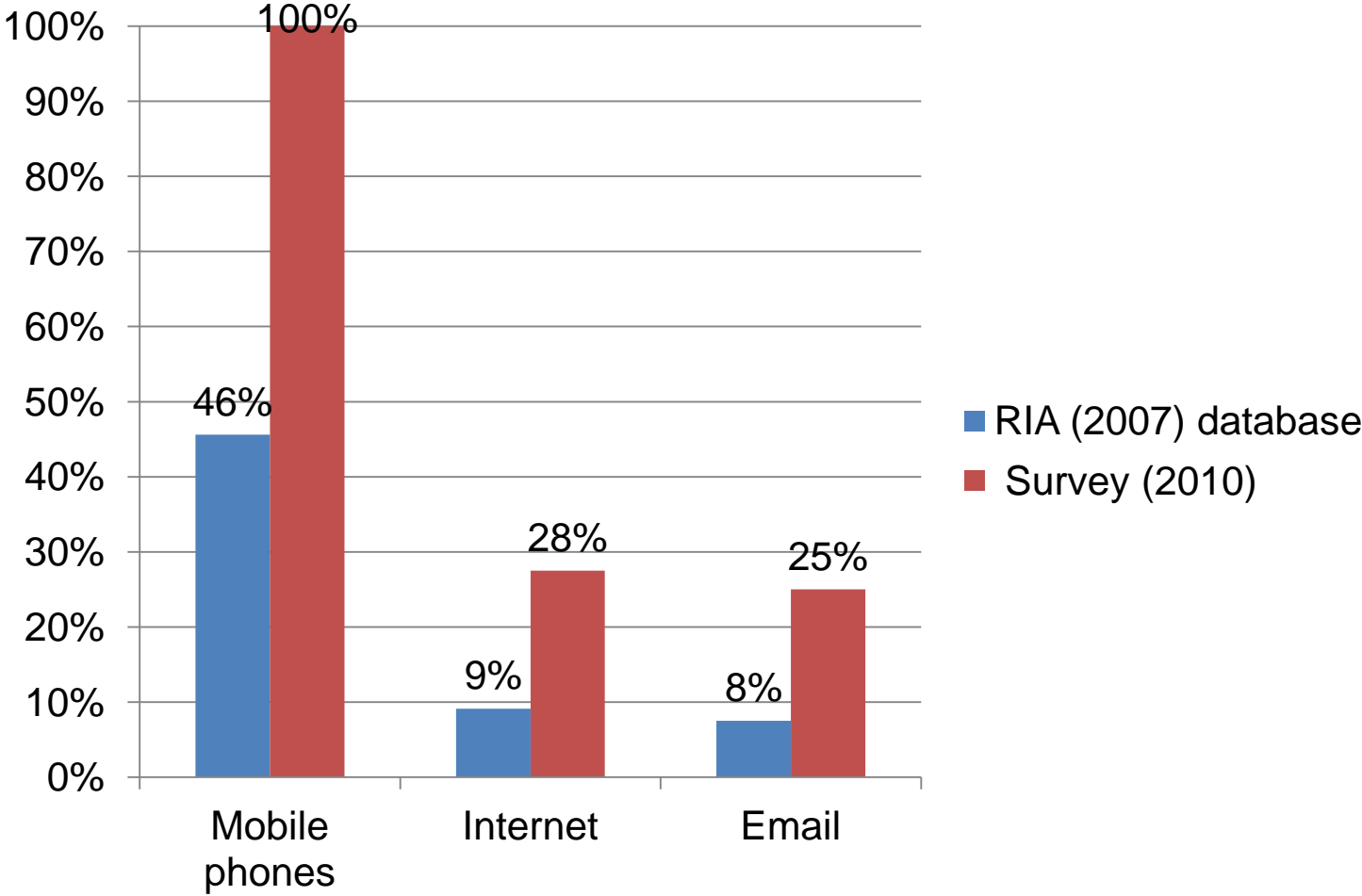
- Data was entered in Excel spreadsheet
- Data Analysis - Framework Based Approach
  - Recurring concepts and categories were organized.
  - Themes and sub-topics were defined

## 3.2: Data Coding

	Variable	Variable Type	Description
1	Age	Continuous variable	
2	Income	Continuous variable	based on household expenditure /income
3	Gender	Dummy variable	1-female and 0 -male
4	Marital status	Dummy variable	1-single and 0-married
5	Education level	Continuous variable	number of years in school
6	Skills	Dummy variable	1-skilled and 0- no skills -based on individuals' perception of their skills

# Findings

# 4. 1: Usage of The New Technologies

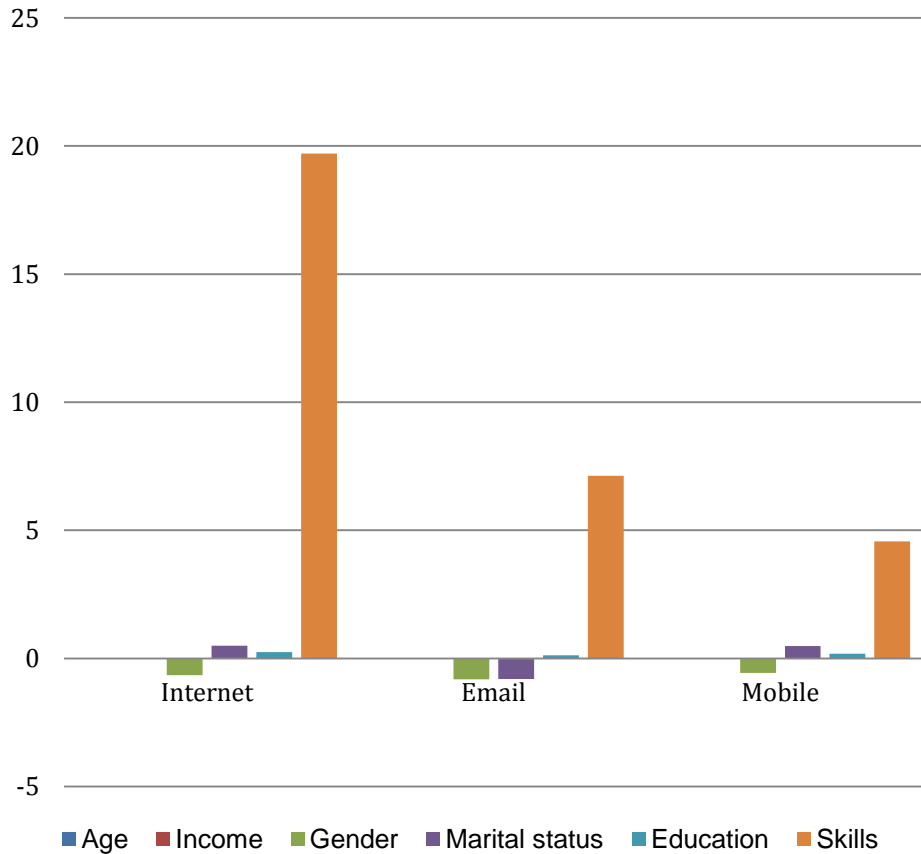


## 4.2: Significance Levels of the Factors

Income level		Internet usage model: H&L p-value =0.14; Nagel R <sup>2</sup> = 0.57 below income of Kshs. 23,671 and p-value =0.36; Nagel R <sup>2</sup> =0.56 above Kshs. 23,672 inclusive.			Email usage model: H&p -value =0.93; Nagel R <sup>2</sup> = 0.58 below income of Kshs. 23,671 and p- value =0.67; Nagel R <sup>2</sup> =0.53 below Kshs. 23,672 inclusive.			Mobile usage model: H&p-value =0.09; Nagel R <sup>2</sup> = 0.81 below income of Kshs. 23,671 and p- value =1; Nagel R <sup>2</sup> = 0.86 above Kshs. 23,672 inclusive.		
		B	Sig.	Exp(B)	B	Sig.	Exp(B)	B	Sig.	Exp(B)
Kshs. 23,671 and below	Age of HHH	0.01	0.70	1.006	0.001	0.96	1.001	0.01	0.12	1.015
	Income of HH	0.00	0.72	1.001	0.000	0.86	1.001	0.00	0.003*	1.007
	Gender of HHH	-0.57	0.79	0.931	-0.66	0.56	0.849	-0.82	0.38	0.802
	Marital status - HHH	0.48	0.10	1.613	0.49	0.12	1.634	-0.81	0.001*	0.420
	Education of HHH	0.18	0.00*	1.201	0.24	0.00*	1.274	0.12	0.001*	1.122
	Skills -HHH	4.57	0.00*	9.674	19.71	0.05*	8.620	7.13	0.000*	3.242.
Kshs. 23,672 and Above	Age of HHH	-0.001	0.97	0.999	0.006	0.83	1.006	0.10	0.13	1.104
	Income of HH	0.00	0.29	1.005	0.00	0.29	1.006	0.00	0.56	1.003
	Gender of HH	-0.81	0.10	0.447	-0.80	0.09	0.451	0.71	0.56	2.028
	Marital status of HH	0.58	0.35	1.791	0.44	0.47	1.548	-0.08	0.96	0.928
	Education of HH	0.14	0.04*	1.152	0.14	0.04*	1.151	0.38	0.15	1.457
	Skills of HH	4.83	0.00*	12.53	4.65	0.00*	10.458	22.37	0.99	5.171

# 4.2.1: Influence of Demographic Factors on Usage

Regression coefficients (B) -  
BoP



Hosmer & Lemeshow - p-value  
( $>0.05$ )

Internet -0.14

Email - 0.93

Mobile Phone -0.09

Nagelkerke  $R^2$

Internet -0.57

Email - 0.58

Mobile Phone -0.81

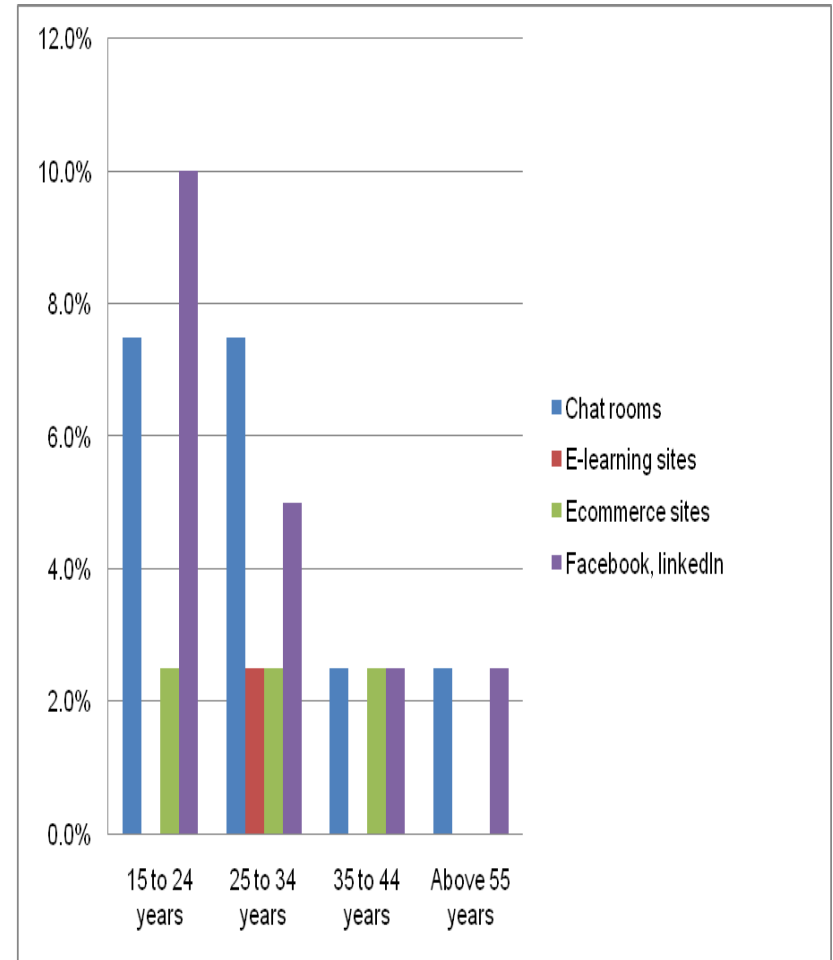
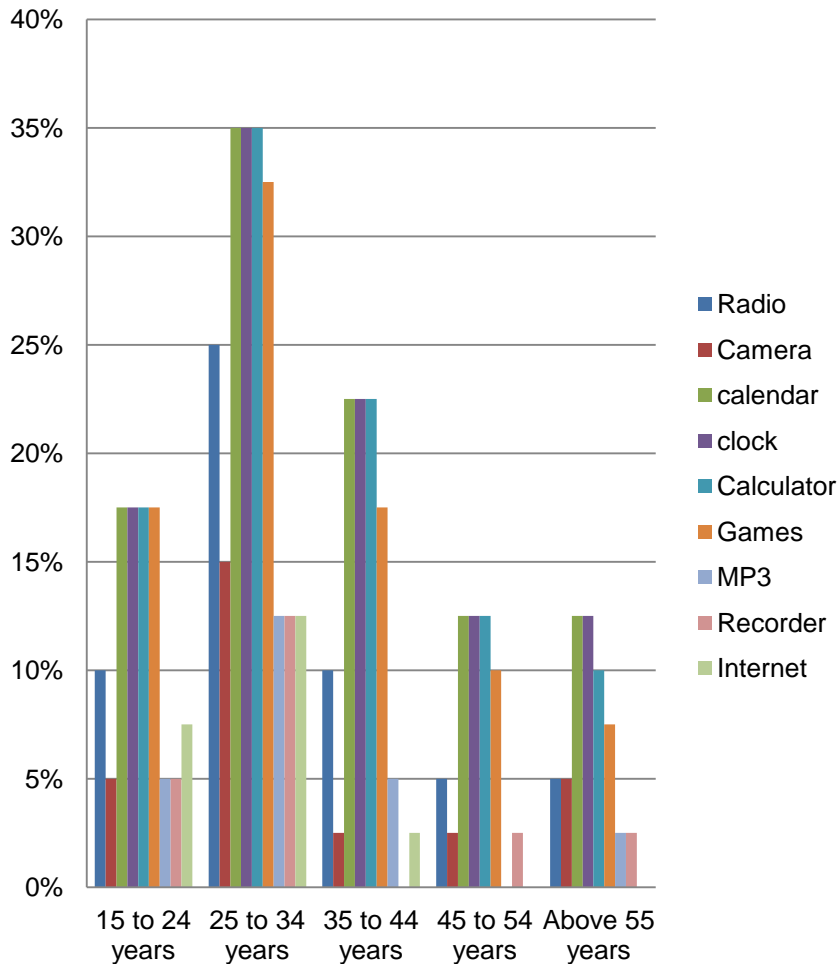
Sig p-values ( $<0.05$ )

Internet-Education and Skills

Email -Education and Skills

Mobile Phone-Income, Marital  
Status, Education, Skills

# 4.3. Internet and Mobile Phone Features Used in Relation to Age



# Age and Usage

- ❖ Individuals' priorities and occupation at different ages dictated the usage pattern.
- ❖ Those in the ages of 25 - 34 yrs were using most features of the Internet and mobile phones.
  - Students were in this age group
  - 33.35% of those in formal employment were between 25 and 34 years.
    - Formal employment exposed them to free Internet opportunities.

## 4.4: Usage in Relation to Gender

### RIA (2007) Data

#### ❖ Gender

- 38.9% male (1158)
  - 48.7%- Mobile
  - 13.3%- Internet
  - 11.1% - Email
- 61.1% female (1817)
  - 44.1% - Mobile
  - 7.9% - Internet
  - 6% - Email

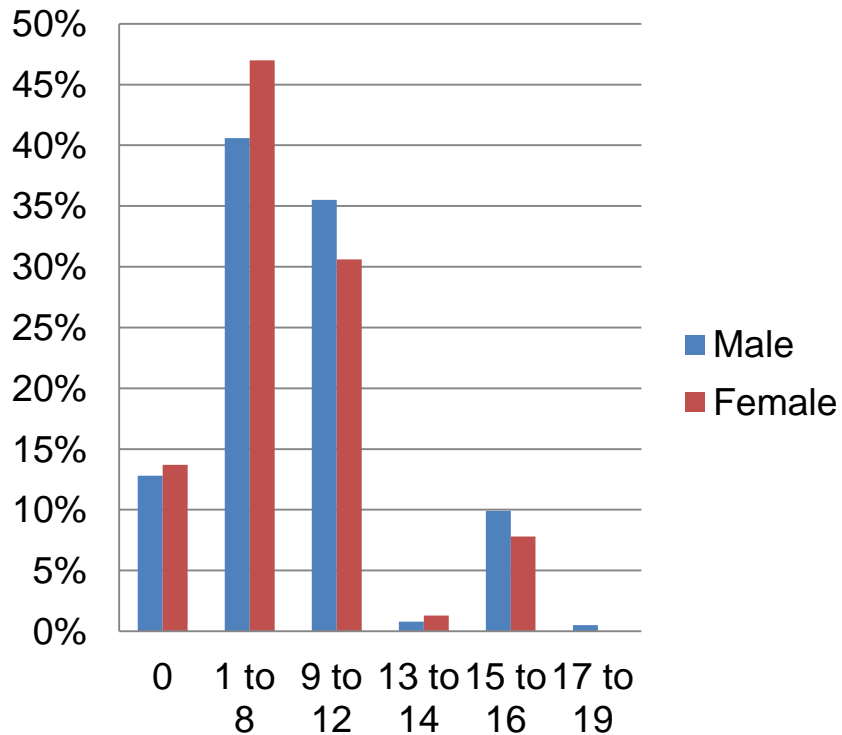
### Survey (2010) Data

#### ❖ Gender

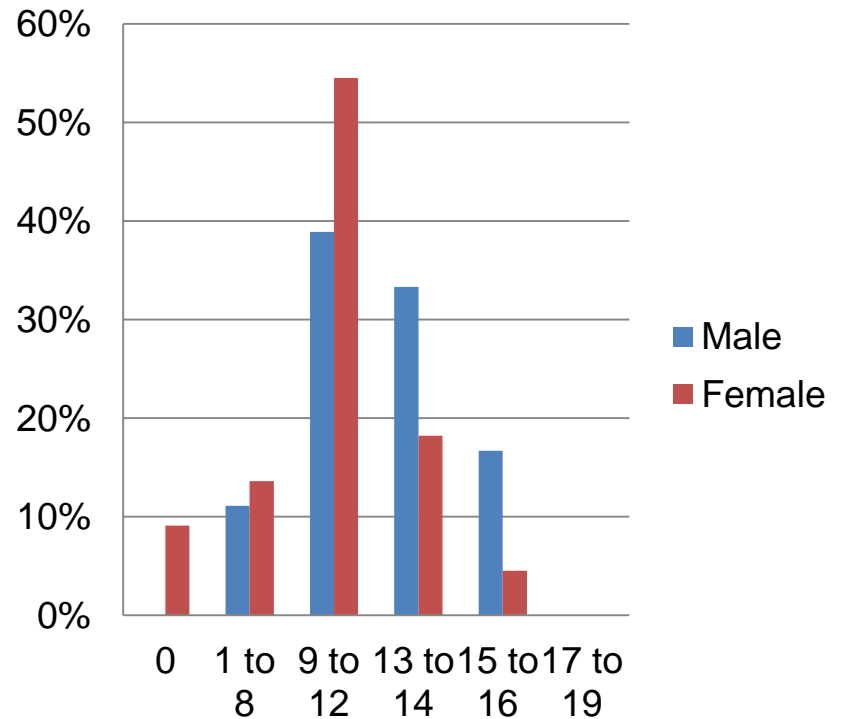
- 45% male (18)
  - 100% - Mobile
  - 33.3% -Internet
  - 33.3% -Email
- 55% female (22)
  - 100% - Mobile
  - 27.5% - Internet
  - 18.2% - Email

# 4.5: Education in Relation to Gender

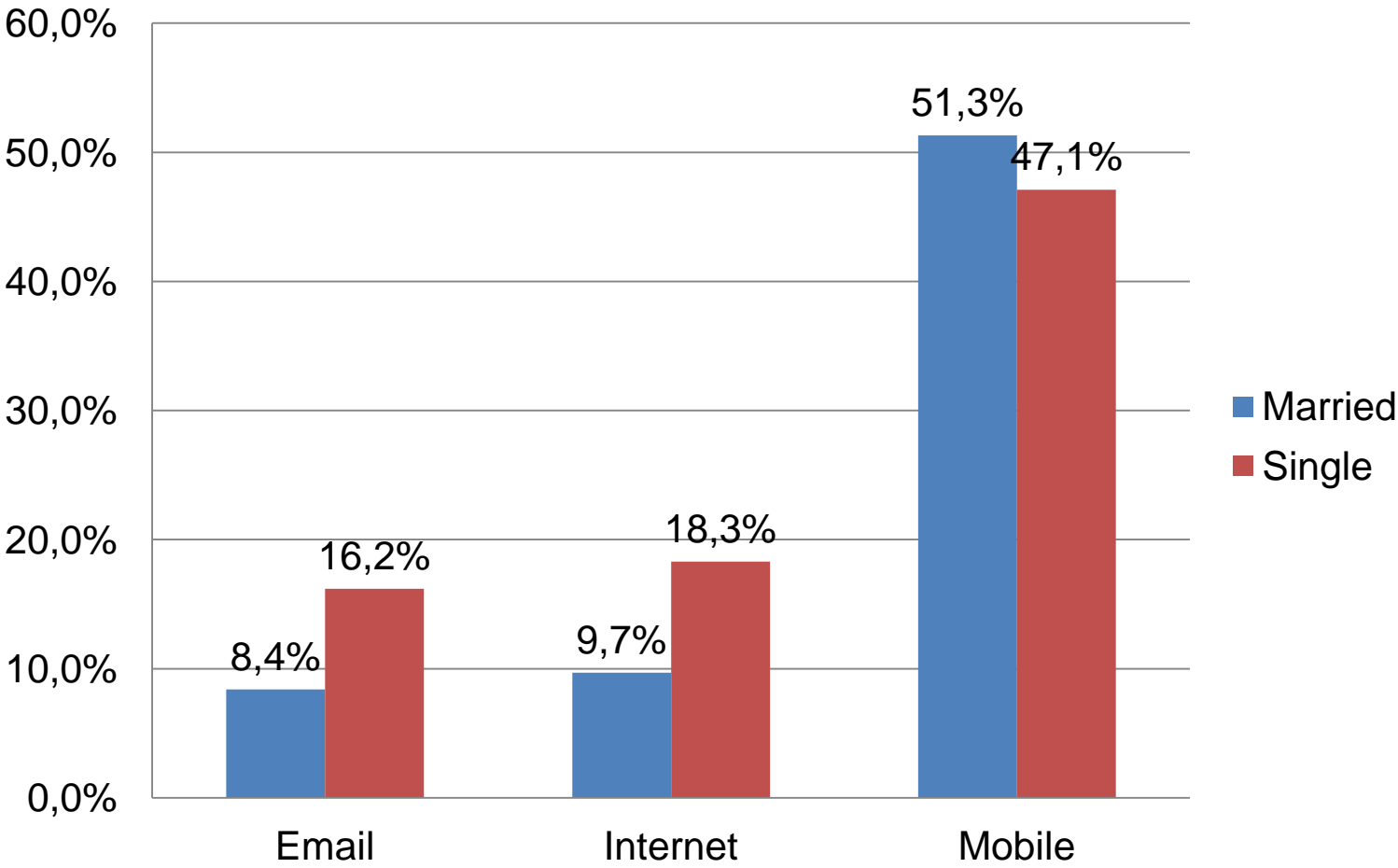
## RIA 2007 data



## Survey 2010



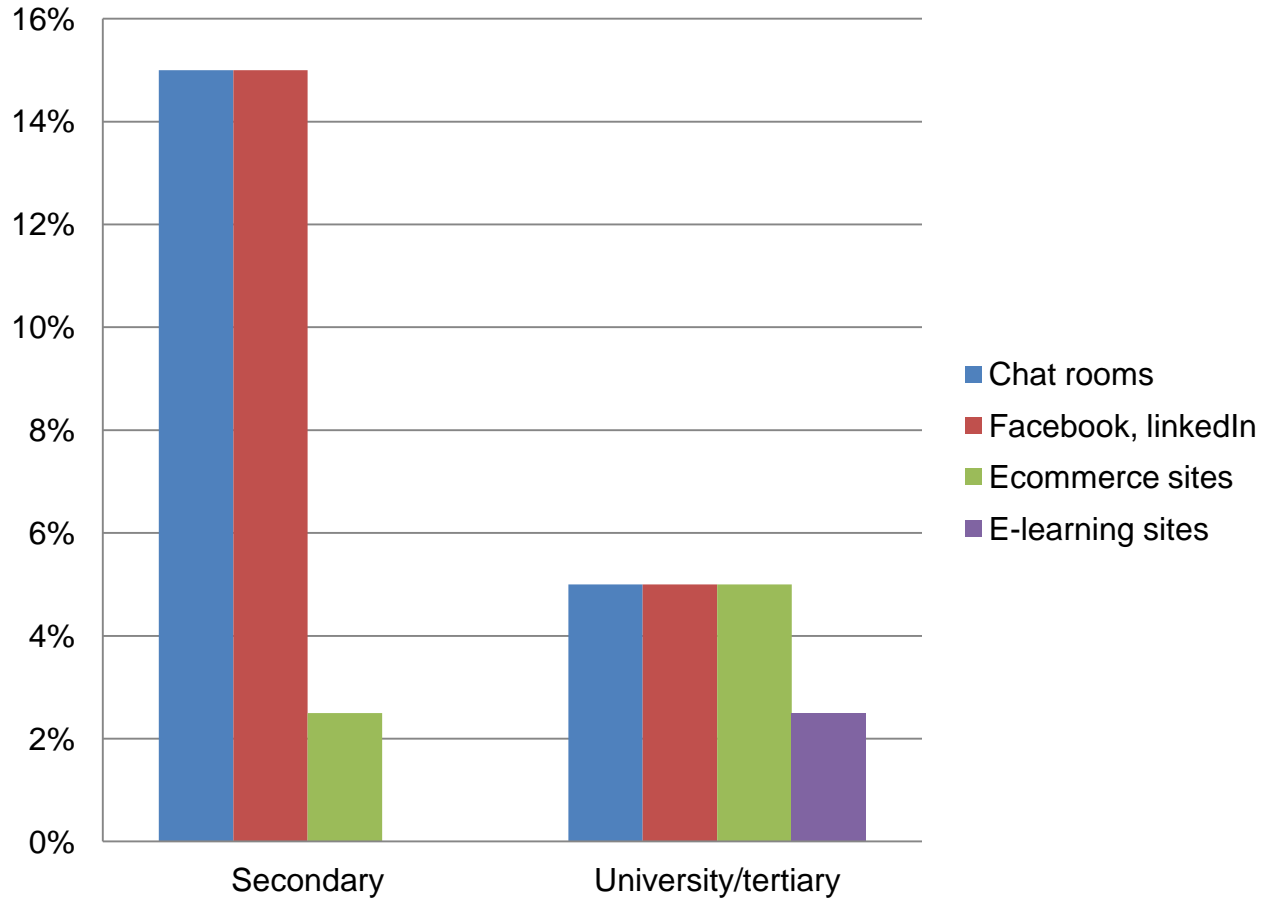
# 4.6: Marital Status in Relation to Usage



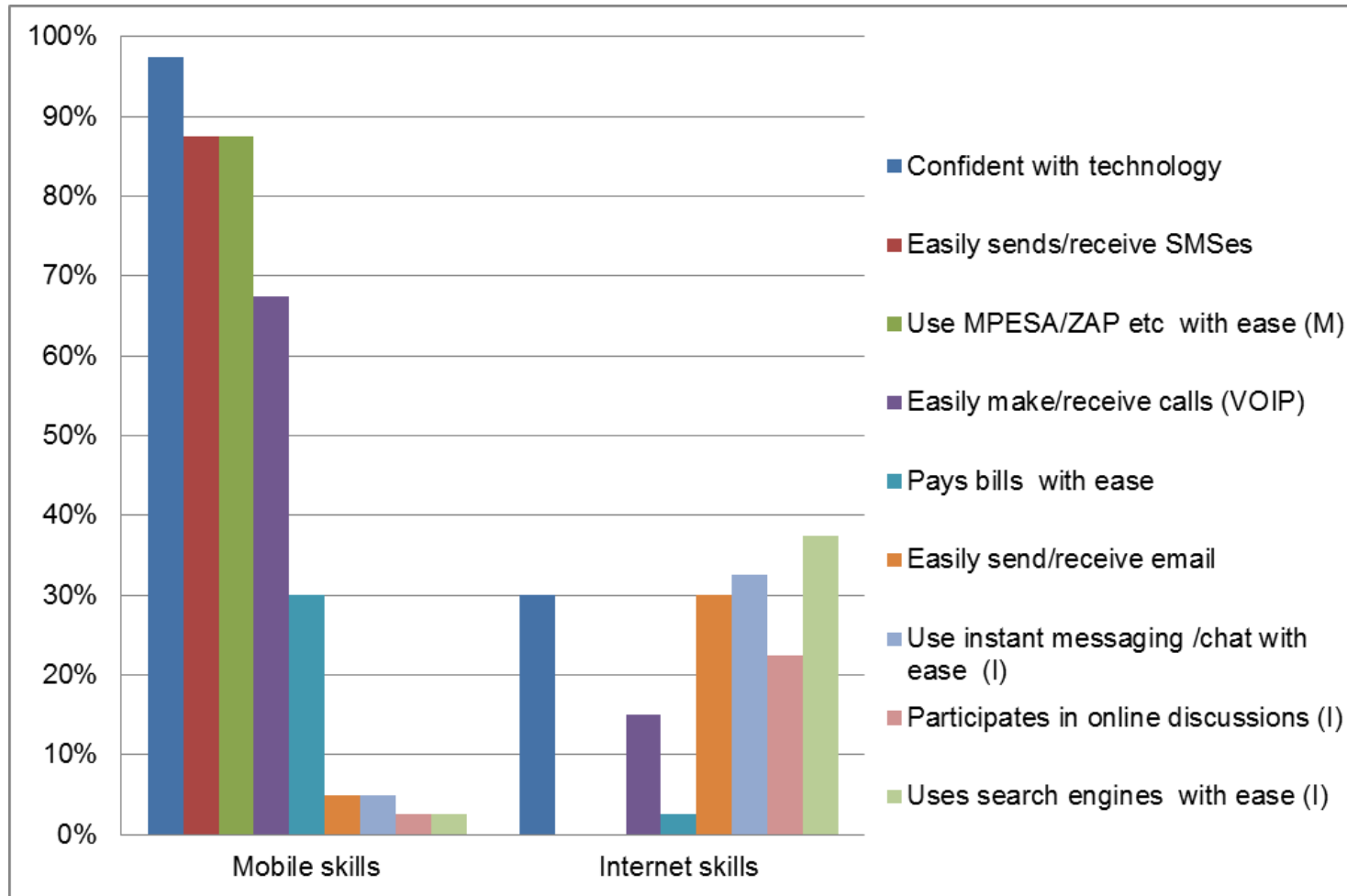
## Linkage: Gender, Education and Marital Status

- ❖ Males had acquired more years of education than the females
- ❖ 58.1 per cent of the respondents were married and comprised of 35.5 per cent married males and 64.5 per cent of married females.

## 4.7 Education in Relation to Internet Features



## 4.8. Skills in Relation to Usage



# Linkage: Education and Skills

- ❖ Education increased the chances of having the relevant skill of using the new technologies.
  - 70% of the respondents who did not use the Internet gave lack of knowledge of how to use the Internet as the major reason for not using it.
- ❖ The odds of those who had skills using the technologies were higher than those without with factors of 4.5 (Internet), 19 (email) and 6.91 (mobile phone).

## 5. Conclusion

- ❖ Age, income, gender, marital status, skills and education level influence the usage of the new technologies.
  - Education, Skills and gender had the most significant influence on the of the usage of the new technologies
  - Educated people had higher chances of having skills to use the technologies
  - Increase in income led to increased usage of the mobile phones but not Internet or email
  - Different age groups use different features of the technology

## 6. Policy Implications

- ❖ Training and skills development should be core policy direction.
  - 12 years > mainly used productive features of the new technologies and in particular the Internet.
- ❖ Gender inequity in education need to be addressed in LIH.
- ❖ There are challenges to usage of the new technologies beyond access

Thank you