

# Exploring ICT Innovation Factors among Rural Youth in Namibia

Bernardus Franco Maseke

University of Namibia, Faculty of Economics and Management Science

**Abstract:** *Although innovation in Urban Namibia has been forth coming at a relatively slow phase, a few brilliant ICT innovations have serviced from especially the youth in urban Namibia. However despite the huge innovative potential of young people in rural Namibia, less young people are being innovative in everyday situations requiring innovative solutions. For Namibia to achieve its millennium objectives in becoming a knowledge based industrialized country the youth should become the drivers of innovation. It is against this backdrop that this study employed a quantitative methodology approach to determine the drivers and killers of innovation amongst Namibian youth. Data was collected from a convenience sample of 384 respondents using a self-administered structured questionnaire. Findings exhibit that the ICT Innovation is positively and significantly influenced by Usage of computer, Internet technology and computer technology. This means that ICT innovation amongst young people is driven by usage of computer, internet technology and computer education.*

**Keywords:** Innovation; ICT; Rural Youth; ICT Infrastructure; ICT Education

## 1. Introduction

This study focused on identifying the critical factors influencing ICT innovation amongst rural youth in Namibia. Although innovation in Urban Namibia has been forth coming at a relatively slow phase, a few brilliant ICT innovations have serviced from especially the youth in urban

Namibia (Kapanda 2008). However despite the huge innovative potential of young people in rural Namibia, less young people are being innovative in everyday situations requiring innovative solutions (Rogers, 2002). For Namibia to achieve its millennium objectives in becoming a knowledge based industrialized country the youth should become the drivers of innovation (Geingob 2015). It is against this backdrop that this study employed a quantitative methodology approach to determine the drivers and killers of innovation amongst Namibian youth. The findings of this study will be used to advise both public and private sector organizations on how they can help eliminate the killers of ICT innovation and support more young people to become innovative thinkers and doers. This study will also help Namibian rural youth to become part of the global knowledge based society.

## 2. Methodology

To address the hypotheses of this study, a survey research design was used. The focus group was students and learners for local schools and the University of Namibia. Students are a reasonable unit of analysis since it is mainly the young and educated who are technologically savvy and who are likely to have a high level of awareness of a new innovation such as the internet and its applications. (Brown et al, 2003; Laforet and Li, 2005).

Firstly the dimensionality of the deterrents of ICT innovation factors was tested using

Exploratory Principal Component Factor Analysis with Varimax Rotation on the sample (n= 384).

This is simply done to identify those factors that are meaningful based on eigen values greater than 1 and factor loadings of .30 and more as recommended by (Bryman and Crammer 1998)

There after the internal consistency or reliability of the items representing the meaningful factors affecting ICT innovation was tested using Cronbach's alpha. Once reliability was established the data was collected.

Data was collected from a convenience sample of 384 respondents using a self-administered structured questionnaire. Convenience sampling has been commonly used in previous related research despite its known limitations (Amin, 2008; Brown et al, 2003; Laforet and Li, 2005).

To measure the various factors influencing ITC innovation a scale of a total of 24 items adapted from Khan, F. and Ghadially, R. (2010) was used. In particular, three items were used to measure each of the following factors: computer education, usage of computer and Internet technology.

Respondents were asked to indicate the degree of their agreement with the statements on a 5 point Likert scale ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Hypothesis

H1 The lack of access to computer education leads to low ITC Innovation

H2 The less the usage of computers the lower the ITC innovation

H3 The less the access to Internet technology the lower ICT innovation

### 3. Findings and Discussions

The dimensionality of the factors affecting ICT innovation was tested using Exploratory

Principal Component Factor Analysis with Varimax Rotation on the entire sample (n = 384). So as to find those factors that are evocative, specific items were considered for exclusion using several criteria. Mainly, Eigen values greater than one and factor loadings of .30 and more on a factor were used as they are considered as good discriminatory measures (Bryman and Crammer, 1998). The exploratory factor analysis results, of the factors affecting ICT Innovation are presented in Table I.

Out of the twenty four items used to measure determinants of ICT innovation, thirteen items were retained. Thus, eleven items were deleted as they loaded equally in more than two factors. The final factor analysis based on fifteen items generated five factors with Eigen values greater than one. The three factors explained 59.99% of total variances and were labeled as computer education, usage of computer and Internet technology

Next, the reliability of the items representing the three factors affecting ICT innovation was tested using Cronbach Alpha. The Reliability tests show the following Cronbach Alpha values: =.86, computer education, =.69, usage of computer =.73, Internet technology. Cronbach Alphas equal or higher to the cut-off alpha value of .50 were used as an indicator of reliability in a study by Brown et al, (2003). From the above Cronbach Alpha values it can be seen that the indicated factors can be viewed as reliable because they contain values that are greater than .50 which meets the requirements for basic survey research.

**Table 1:** Dimensionality of Factors Influencing ICT Innovation

Factor 1:, usage of computer			
	Factor Loadings	Mean (SD)	Variance
Using a computer makes it easier for me to do school / university work or any administrative tasks.	0.86	3.74 (1.17)	28.99
Using a computer enhances my effectiveness in doing school university or administrative tasks.	0.83	3.72 (1.03)	
I find using a computer to be useful in doing school/ university or administrative tasks.	0.82	3.64 (1.08)	
Using a computer improves my performance in completing school /university or administrative tasks	0.76	3.07 (1.21)	
Using a computer allows me to manage my finances and other admin tasks more effectively.	0.66	3.35 (1.17)	
Doing things on a computer is much faster than doing it the manual way.	0.6	4.10 (.88)	

Factor 2: Internet technology			
	Factor Loadings	Mean (SD)	Variance
Access to the Internet is difficult to obtain.	0.81	2.42 (1.04)	11.61
Accessing the internet requires a lot of mental effort	0.81	2.42 (1.04)	
I would use the internet if I could access it on a trial basis first to see what it can offer.	0.63	2.38 (.97)	
My device can easily connect to the internet through the local internet service providers.	0.87	3.55 (1.01)	8.34
I would use the internet more if it was more affordable.	0.82	2.74 (1.09)	

Factor 4: Computer Education			
	Factor Loadings	Mean (SD)	Variance
I have generally received enough education about ICT	0.78	3.06 (1.27)	6.35
I received enough information about the benefits of ICT	0.77	3.09 (1.19)	
I obtained information on ICT from an educational institution	0.69	3.60 (1.23)	
ICT education is easy to access	0.81	2.42 (1.04)	

Hypotheses	Beta	Std. Error	Beta	t (p)	Outcome
H1	-3.5	0.17	-0.15	-2.14 (.03)	Supported
H2	0.74	0.12	0.4	6.05 (.001)	Supported
H3	0.67	0.16	0.3	4.4(.001)	Supported

Findings exhibit that the ICT Innovation is positively and significantly influenced by Usage of computer, Internet technology and computer technology.

This means the ICT innovation amongst young people is driven by usage of computer, internet technology and computer education. This is in correlation with the study by (Khan and Ghadially 2010) that have found usage of computer, internet technology and computer education are important factors in the empowerment of youth through various innovations.

The findings are also supported by tangible visibility of the lack and access to ICT infrastructure, ICT education and basic ICT devices such as computers not only in this region but in most rural areas in Namibia. Internet connectivity is not available at all in some parts of the region and the parts that have connectivity have very unstable connectivity at extremely low speeds.

### 4. Conclusion

The study has significantly contributed to the body of knowledge in uncovering the factors influencing ICT innovation and by availing the reality of why ICT innovation is not growing in rural Namibia. Government and all stakeholders can use this information to develop targeted intervention to fast track ICT developments especially in rural Namibia, with specific emphases on ICT education, Infrastructure and equipment.

## 5. Future Research

Future research can focus on ICT gender issues and perhaps on ICT applications that can drive innovation in ICT in the Kharas region and the rest of Namibia.

## References

- [1] Amin, H. (2008). "Factors Affecting the Intentions of Customers in Malaysia to Use Mobile Phone Credit Cards," *Management Research News*, 31(7), 493-503.
- [2] Brown, I. Cajee, Z. Davies, D. and Stroebel, S. (2003). "Cell Phone Banking: Predictors of Adoption in South Africa- An Exploratory Study," *International Journal of Information Management*, 23, 381-394.
- [3] Bryman, D. Cramer; Quantitative data analysis for Social Scientists Routledge, London (1990).
- [4] Geingob, H. G. (2015). Namibian Newspaper. Windhoek: Namibia Press Agency.
- [5] Kapanda, J. (2013). Information Communication and Technology Summit. Windhoek: Namibia Press Agency.
- [6] Khan, F. and Ghadially, R. (2010), Empowerment through ICT education, access and use: A gender analysis of Muslim youth in India. *J. Int. Dev.*, 22: 659–673. doi: 10.1002/jid.1718
- [7] Laforet, S. and Li, X. (2005). "Consumers Attitudes Towards Online and Mobile Banking in China," *International Journal of Bank Marketing*, 23(5), 362-380.
- [8] Rogers, Bill, ed. Teacher Rogers, E. M. (2002). Diffusion of preventive innovations. Addictive behaviors, 27(6), 989-993. leadership and behaviour management. SAGE, 2002.