Telematics and Informatics 31 (2014) 356–363

Contents lists available at ScienceDirect

Telematics and Informatics

journal homepage: www.elsevier.com/locate/tele

Product use and welfare: The case of mobile phones in Africa

Jeffrey James *

Tilburg University, The Netherlands

ARTICLE INFO

Article history:
Received 24 May 2013
Received in revised form 29 July 2013
Accepted 28 August 2013
Available online 6 September 2013

Keywords:
Inequality
New technology
Welfare economics
Adoption

ABSTRACT

Traditional consumption theory assumes that the welfare from goods and technologies occurs at the point where they are purchased and hence that what matters from this point of view is the extent of adoption by society. But as Sen (1985) and others have pointed out, account also needs to be taken of the use to which technologies are put. (In the extreme case new technologies may not be used at all.) This paper asks in particular whether use of mobile phones is such as to offset or exacerbate the inequality in the adoption process. From what I can tell, there is some tendency for the former to occur, part of which can be explained but much remains to be understood. The paper uses recent survey data from a large and recent set that includes nationally representative information from 11 African countries.

1. Introduction

In traditional consumption theory satisfaction occurs at the point where the product is purchased. Nothing that happens thereafter has any bearing on the amount of utility that is derived from the product. Yet, as Sen (1985) and others have correctly pointed out, much depends on the way a good is used, if it is used at all (a bicycle for example has no use to a cripple). To redress this important limitation, I propose here a framework which allows the use of a product (mobile phones) to be included with adoption in providing a welfare assessment in a particular context. The framework is then applied to a new and extensive survey of mobile phone users in 11 African countries.[1] This survey is methodologically much superior to some existing studies of the issue.

Among the questions that are asked of the new data are: (1) do use patterns reinforce or ameliorate the inegalitarian patterns of mobile phone adoption by rich and poor countries? and (2) Which African countries do best according to the numerous use mechanisms cited in the survey? The answers are at times intriguing and contradict in some important respects the existing findings on mobile use patterns and their implications in Africa.

2. The conceptual framework

As already noted, traditional consumption theory assumes that utility is derived at the point where goods are purchased. In Fig. 1 for example the maximizing consumer chooses a point on the utility curve I_1, where he has purchased OA of good 1 and OB of good 2. No allowance is made for the possibility that because the goods are incorrectly used, he ends up (say) on the lower indifference curve I_2 (with a lower welfare). New products in developing countries are especially prone to misuse because consumers there have not yet built up the user capabilities required to use them correctly. (Sometimes the problem

* Tel.: +31 13 4662320.
E-mail address: m.j.james@uvt.nl

[1] See below under 'Research ICT Africa'.

0736-5853/$ - see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.tele.2013.08.007

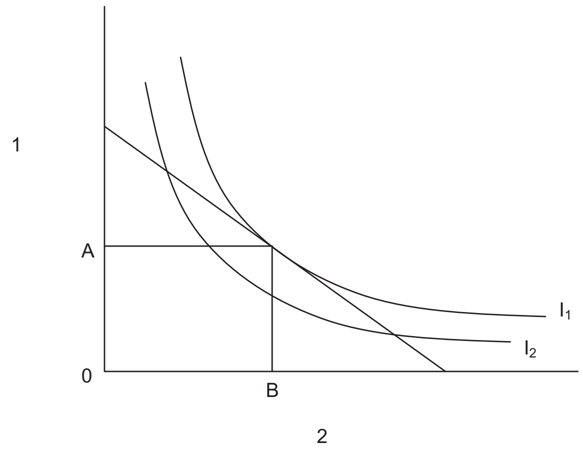

Fig. 1. Use and welfare.

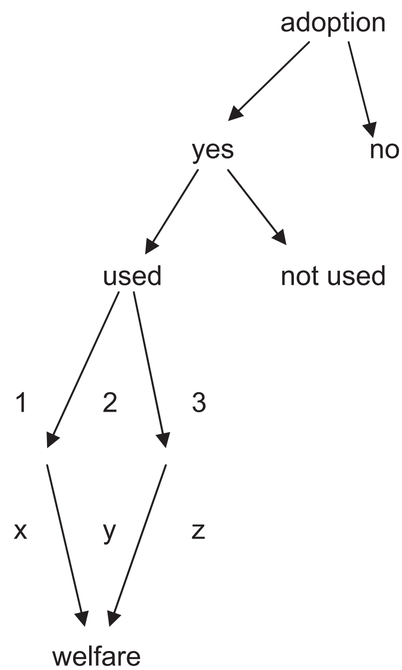

Fig. 2. The conceptual framework.

is not so much about what people do with products as what products do to people-medicinal drugs for example have different effects on different persons.)

Sen's functionings approach, by contrast, is based on the view that what matters for welfare occurs *after* the point of purchase, when the good is actually used. 'In getting an idea of the well-being of the person', he writes 'we clearly have to move onto 'functionings', to wit, what the person succeeds in doing with the commodities and characteristics at his or her command' (Sen, 1985, pp. 10–11). Consider, by way of example, the way in which medicinal drugs are used in developing (and other) countries. Whether they are taken in the right amount, at the right time of day and whether the course of treatment is completed (this last matters in the case of antibiotics when patients stop taking the drug when it begins to work).

In Fig. 2, I present a summary of an analytical framework based on product use and show how it differs from the conventional model of consumer theory and welfare.

Beginning from the top of the figure, the first fork is between adoption and non-adoption of the product or technology. The determinants of this decision have been quite extensively studied in the context of ICT in developing countries and the