Berichte/Notes and Reports

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Energy Information for Consumer Decisions:
Public Policy and Life Cycle Costing

Abstract

Life Cycle Costing (LCC) is very applicable as a means of achieving the objectives of recent energy information policies in the U. S. and Canada. In fact, the LCC format of information disclosure appears to have a number of advantages over the energy labeling formats these countries have implemented. Its major advantage is that it presents several dimensions of product cost in a manner that suits the complex, multi-attribute decision making associated with consumers' durable purchases. The future of LCC as a tool for consumer information provision lies in behavioral research into the actual impact of LCC information on consumer purchase processes, particularly choice. Several technical issues must also be resolved.

The availability, content, and use of product information by consumers (both ultimate consumers of products and purchasing agents for government and business) have emerged as a topic of considerable interest to public policy makers, marketers, purchasing agents, consumer advocates, and consumer researchers. Issues include consumer awareness, understanding, and motivation to use facts pertinent to the purchase and use of products offered by our competitive economic system and the economic and technical feasibility of providing such information.

Increases in the disclosures of energy efficiency or energy cost data (either regulated or voluntary) will impact on the operations of marketers, consumers, and policymakers in a variety of ways important to the functioning of the market system. At the policy level a number of programs to provide more objective information have been implemented across a variety of agencies (e.g., U.S. Department of Transportation, U.S. Food and Drug Administration, U.S. Federal Trade Commission, Consumer and Corporate Affairs Canada). However, results have been less than satisfying for many of the programs (e.g., truth-in-lending, unit pricing, cigarette warning labels). Consequently, for the policymaker, concern will necessarily focus on the information provision itself, conceptually and operationally as well as in an evaluative sense. For the firm, the introduction of a new salient product attribute (i.e., energy cost) for consumer evaluation will provide new bases for competition and possible reorganization of the marketing mix to reflect the new product environment. Finally, consumers will be faced with a more comprehensive informational environment stressing the importance of a multidimensional conceptualization of product cost as opposed to the traditional unidimensional perception of cost being equated to price. Consequently, the decision process the consumer uses in product and brand evaluation will depend on awareness of the importance of objective dimensions other than price, the ability to process and use such informa-
tion effectively, and trade-offs between objective dimensions such as price and energy (Hutton, 1977a).

A newly organized index, life cycle cost (LCC), is gaining increasing attention among policymakers, procurement officers, builders, and researchers as a potential framework for presenting objective information to consumers and as a technical model for promoting more efficient product designs and procurements. Life cycle cost is discussed in detail in Center for Policy Alternatives (1974), Hutton (1977b), and Hutton and Wilkie (1979). Basically, the critical dimensions of LCC are product life and product cost. A product's life cycle is defined as its useful life expectancy as determined by consultation and testing with a variety of agencies and manufacturers. Cost is composed of initial purchase costs and operating expenses. The former refers both to the manufacturer's cost of production and retail purchase price. The latter includes both service outlays and energy use. A working definition of LCC is supplied in the M.I.T. Report (1975) as "the total dollars that will be expended over the product's useful life." Dollar expenses are broken down as (a) purchase price, (b) operating costs (energy, maintenance, service), and (c) disposal costs. However, these components are usually collapsed into a three dimensional index – purchase price + energy costs + service costs. Disposal costs are not included since they typically account for less than one percent of total cost in appliances.

Currently there are two basic streams of research involving LCC. The first approaches LCC from a social psychological perspective involving information theory. The concern here is with the consumer and his interaction with a new information concept. The second stream focuses on LCC as a technical tool. Operationalizing the different dimensions, determination of "useful life," and incorporating LCC into models to produce more efficient product and building designs and procurements are the concerns here. Both streams are important, and research on each is currently in progress.

While both streams will be discussed, the main purpose of this paper is to introduce the concept of LCC focusing on its potential use as a consumer information provision. This stream is crucial in determining if LCC is a viable concept for introducing more objective information into the consumer environment, especially energy costs. While LCC has already shown promise in technical and industrial segments, its impact on the consumer is much less certain at this stage.

It is important to emphasize that this review concentrates on an area that is somewhat narrower than its title indicates. Though the term Life Cycle Cost is used throughout this paper, the discussion centres on energy (and price) cost components and not service (repair, maintenance) costs. This emphasis is not due to an attitude that service costs are an unimportant part of total LCC. Rather it is necessitated by lack of treatment of service costs in literature on LCC as a consumer information provision, a situation that is likely caused by an absence of current and reliable data on servicing costs for specific consumer durable models.

CONSUMER INFORMATION AND PUBLIC POLICY OBJECTIVES

A number of programs in recent years have focused on one or more of the components of LCC. Three of the most important are the U.S. Voluntary Labeling