

RESEARCH ON THE QUALITY OF CONSUMER GOODS

Dean Wilson

In this discussion I will differentiate between the instruments and methods now used to determine and measure the quality of consumer goods and research the aim of which is to improve these instruments and methods.

Consumers Union is one of the larger organizations devoted to the testing and evaluation of consumers products. Its facilities include a chemical laboratory, a textile laboratory, a modern completely instrumented climate chamber, an electronic laboratory with a sound room large enough to simulate a consumer's living room, and many other modern instruments.

The laboratory evaluation methods have been developed over a period of twenty-five years. These methods have had the advantage of feedback from millions of consumers whose personal experiences with the products have been integrated into the evaluation methods. The laboratory methods have stood the test of predicting the results of many controlled use tests.

The laboratories are well staffed with experienced engineers and technicians. The budget for the laboratories, derived solely from the members of the organization, is measure in millions of dollars per year.

Yet--in spite of this rather rosy picture, (which probably seemed like a commercial for C U) we are not doing our job well.

The number of consumer products evaluated in a year misses, by at least a factor of ten, the number of products on which the consumer needs information.

For too many consumers the results of the laboratory evaluations are late. A new product or a new model may be available for purchase by the consumer for six months prior to the availability of the results of the laboratory tests.

These are the motivating forces behind our research. We are searching for methods of product evaluation which will give us the capability of responding quickly to the rapidly changing market and also give us the capability of evaluating many more consumer products. Of course, we desire that any new technique or method maintain at least the validity of the current one. The kinds of questions we ask are:

Can we design an instrument which will speed up the process of making measurements?

Can the process of laboratory testing of consumer goods be made automatic?

Is it possible to rate some products by analysis of the specifications and methods of production only, and thus eliminate the laboratory tests for those products?

The amount of research currently being carried on in universities, government laboratories, and industrial laboratories is tremendous. It should not be surprising that many of the results of this research will apply to the problems of a consumers organization.

The government is one of the largest consumers of industrial products, especially the military. Its laboratories are faced with the same problems of determining:

1. Which is the best buy?
2. How can this be determined more quickly, and
3. how can the methods be applied to the thousands of items for which the best buy decision must be made.

Industry too is a large consumer. When industry wears its consumers hat it does not pay attention to the advertisements and price of the brands from which it must make a choice. Competing brands are analyzed and tested in the laboratory. The process is very similar to that of a consumer's organization representing the individual consumer.

With all this activity directed toward the question "Which is the best brand to buy", the individual consumer is bound to reap some benefits.

Computer Analysis of Experiments

Government and industrial laboratories have demonstrated that it is cheaper and takes less time to analyze experimental results automatically. C. U. will introduce automatic data processing equipment in to its laboratory operations during 1961. This should be a step toward reducing the time to run the tests and thus make the results available earlier to the consumers.

The Automatic Jury

Consumer organizations make use of the jury system for evaluating some products. An example of this is in the evaluation of Hi-Fi sets. A group of people (the jury) listen to both set A and set B and designate their preference. Carefully controlled experiments reveal that people

can detect differences and that they are remarkably consistent. Instruments are now available which will measure the characteristics of each Hi-Fi set but these measurements can not be related to: which set the human will prefer.

I have no doubt that such instruments can be developed. If I am correct, jury rating, which is both costly and time consuming, will be eliminated in the evaluation of some consumers products.

Pre-sample Evaluation?

Suppose that a very competent group of engineers were provided with the engineering specifications and the methods of production for each brand of a set of competing brands of a product, how well do you think they could predict the best buy for the consumer?

How well do you think they could predict the ratings which will result from testing in a consumer organization?

Experiments are now being considered which may shed some light on these questions. If it turns out that the values of only one-half of the factors necessary for evaluation can be determined accurately in this manner, it may be necessary to measure only the remaining factors during the laboratory tests.

Such a suggestion seems to have many practical difficulties. Nevertheless, it has the potential of providing the order of magnitude increase in efficiency for which we are searching. Government and industrial laboratories are currently spending millions of dollars per year in an attempt to apply this method of analysis to products that they purchase. I am confident that within the next ten years we will see some applications of this technique in consumer organizations which represent the consumer.