



Mechanical Observation Marketing: How Consumers Behave and Interact in the Food Market

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Abstract

The observation could be personally or mechanically and mechanical observation methods are more suitable than a person collecting primary data. It is a powerful tool for food business and scientific researches. Such devices may reduce the cost and improve the flexibility, accuracy and other functions of data collection. There are many different ways to design an observation study, depending on the objective of the study, the type of data are trying to collect, and the resources have available for the study. It also depends on the type of information needed, can be used both qualitative research which means respectively insight and understanding of the research setting or quantitative research which measures and quantify how often the respondent consumes a specific food. Although, mechanical observation methods often raise ethical concerns about subjects right to privacy and right to be informed, the observation becomes likely ethical if the behavior being observed commonly performed in public, is the systematic process of recording the behavioral patterns of people, objects, and occurrences as they are witnessed.

Keywords: Consumer behaviour, Mechanical observation, Food market, Market promotion

Introduction

“Observation is the systematic process of recording the behavioural patterns of people, objects, and occurrences as they are witnessed” [1]. “There are many different ways to design an observation study, depending on the objective of your study, the type of data you are trying to collect, and the resources you have, available for your study” [2], for example, when the researcher wants to know what the people act actually, he needs to use a suitable direct observation, and indirect observations are useful if he wants to study the result of the same occurrence [2]. It also depends on the type of information he needs, he can use qualitative research, which means respectively insight and understanding of the research setting like (feelings, behaviours, motivations and attitudes) [3], or quantitative research which measures and quantify how often the respondent consumes a specific food [4,5]. Observation could be also personally or mechanically, mechanical observation methods are more suitable than a person collecting primary data. Such devices may reduce the cost and improve the flexibility, accuracy and other functions of data collection. For example, it would not be feasible for researchers to sit in consumers’ homes to record their food consumption habits, but it is easier if they record consumers’ behaviours in restaurants by cameras. Cameras

and audiovisual devices can record behaviour more objectively and in greater detail than human observers. Several devices are used to measure and collect physiological actions and reactions of consumers such as choosing particular commodities from a supermarket shelf, or dealing with food leftovers when they finishing eating [6].

Mechanical observation techniques, measuring behavioural reaction

“Mechanical observation uses a variety of devices to record behaviour directly. It may be an efficient and accurate choice when the situation or behaviour to be recorded is routine, repetitive, or programmatic” [1]. For instance, of mechanical observation techniques:

- **Television monitoring (people meter):** “Perhaps the best-known research project involving mechanical observation and computerized data collection is ACNielsen’s television monitoring system for estimating national television audiences. Nielsen Media Research uses a consumer panel and a monitoring device called a People-Meter to obtain ratings for television programs nationwide” [7]. The Nielsen People-Meter collects data on which channels in a household are playing and who is watching at the time [1]. Arbitron, best known for measuring radio audiences

also used a system, which it calls the Portable People Meter to gather data on radio channels [8].

- **Monitoring web site traffic:** Computer technology makes collecting data about online behaviour easy and inexpensive. The main challenges are to identify which measures are meaningful and to interpret the data correctly [1]. As an example of monitoring website traffic, a click-through rate (CTR) which is the percentage of people who are exposed to an advertisement who actually click on the corresponding hyperlink which takes them to the company's Web site. Google has benefited from CTR research indicating that the highest click-through rates tend to occur on pages displaying search results. The company showed results, for example, that access ads cost the financial firm. CTR is far above typical response rates for direct-mail advertising, but it does not indicate whether online clicks are as valuable in terms of sales [9].
- **Scanner-based research:** Lasers performing optical character recognition and barcode technology like the Universal Product Code (UPC) have accelerated the use of mechanical observation in business research. Scanner research has investigated the different ways consumers respond to price promotions and the effects of those differences on a promotion's profitability [1].
- **Camera technique:** Video cameras or photography cameras are help observing and recording behaviours widely, directly or indirectly, qualitatively or quantitatively. Camera technique is may used for traffic and cars monitoring, also used as a common technique for monitoring and measuring physical or physiological human reactions [1].

Mechanical observation techniques, measuring physiological reaction

Researchers use a number of mechanical devices to evaluate physical and physiological reactions [10], such as:

- **Eye-tracking monitor:** This device gives more successful records the experience of viewing pictures of advertisement, packages, signs, or shelf displays, at a rate of 300 reading/second [11].
- **Pupilometer:** A pupilometer observes and records changes in the diameter of a subject's pupils. A subject is instructed to look at a screen on which an advertisement or other stimulus is projected to provide that the brightness and distance bias is controlled. This method of research is based on the assumption that increased pupil size reflects positive attitudes toward an interest in advertisements [1].
- **Psychogalvanometer:** Measures galvanic skin response (GSR), a measure of involuntary changes in the electrical resistance of the skin. This device is based on the physiological changes, for example: excitement increases the body's per-

spiration rate, which increases the electrical resistance of the skin. The test in general is an indicator of emotional arousal or tension [1].

- **Voice-pitch analysis:** it is defined as an examination of changes in the relative vibration frequency of the human voice to measure emotion [12]. Invoice analysis, the normal or baseline pitch of an individual's speaking voice in a conversation, the greater the deviation from the baseline, the greater is said to be the emotional intensity of the person's reaction to a stimulus. For example: voice-pitch analysis has been used in package research, to predict consumer brand preference for dog food [13].

Strengths and weaknesses of mechanical observation methods

As with any research method; mechanical observation methods have strength and weakness points, advantages and limitations.

Advantages and strengths of mechanical observation methods

That the researcher gathers and records data as it is observed with increasing accuracy and reduction or elimination of recall errors. Observation methods also allow researchers to obtain information from people who are unable to communicate in written or oral form. This can be an advantage when collecting data on young children; it can also be an advantage in cross-cultural and cross-national research if the researcher has problems with the foreign languages. Finally, observational data can be collected in less time and at lower costs than through other types of collection procedures [6].

Limitations and weaknesses of mechanical observation methods

Are inherent in qualitative research in general. Inability to explain behaviors or events is the greatest drawback of all observational methods spinally when the observation is conducted in different cultural contexts by a researcher with little familiarity with these cultures, the researcher may tend to interpret the data in terms of his or her own cultural self-reference (CSR) [6].

The general limitations of observation methods are that motivations, attitudes, and other internal conditions cannot be observed. For example, facial expression might be used indicator of a child's attitudes or preferences for special types of juices because children often react to conspicuous physical expressions. But adults and even children usually conceal their reasons and true reactions in public, and this fact necessitates a direct questioning approach because observation alone cannot give a complete picture of why and how people act the way they do [6].

Ethical issues related to human observation techniques

Observation methods introduce a number of ethical issues. Hidden observation raises the issue of the respondent's right to privacy. Suppose a company is interested in acquiring information about how women put on their bras. The researcher considers approach-

ing spas in several cities about installing small cameras inconspicuously to observe women getting dressed, it becomes non ethically while the researcher recodes a private action without agreement from the women he observes [1], another example related to ethical issues is a telephone recording by individuals, this is subject in many countries to some form of criminal penalty. However, the Federal Wiretapping Act does allow telephone service providers, business owners, and consenting parties to record calls under certain circumstances [14].

Mechanical observation case

Karolina (Jordanian Beverage Company) designed an observation study to measure consumer` satisfaction with their products in (Food City Market), which is located in Amman, the capital of Jordan. They invited people who came to the market to try samples of juices, while they were recording people's reactions by using fixed video camera to monitor the extent of their satisfaction with the products, and followed them to see if they bought juice or not, and if they preferred a special type or not, the results were that some of the individuals who have tasted the juices did not buy any kind of juices, while others bought different flavours of juice, top product was orange juice while banana-shrubbery juice was at the end of the list.

Results and Discussion

Mechanical observation is a powerful tool for business and scientific researches, is the systematic process of recording the behavioural patterns of people, objects, and occurrences as they are witnessed [1], sometimes it becomes the only possible human or animal behaviour monitoring way, it is almost suitable for all researches because of the techniques variety [6].

Generally, no communication with a respondent takes place in Human mechanical observation methods, because of that, it becomes more accessible and valid under specific conditions, and lower cost per the number of respondents comparing with other researching methods [6].

Conclusions

Mechanical observation methods often raise ethical concerns about subjects' right to privacy and right to be informed, the observation becomes likely ethical if the behaviour being observed commonly performed in public, or if the anonymity of the subject assured, or when the subject already agreed to be observed [1].

Conflict of Interest

The Authors declare no conflicts of interest.

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