

## Understanding and predicting human behaviour

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**Abstract:** *Understanding and predicting human behaviour has been of particular interest to researchers for many years. Moreover, the assumption that knowledge of attitudes will help in the task of predicting human behaviour has formed the basis for much consumer and social research. Attitudes are assumed to play an important role in human behaviour theory as the crucial link between what people think and what they do. Ajzen and Fishbein's (1980) attitude-based questionnaire framework has been widely used for the purpose of predicting behaviour. However, despite much study and refinement, limitations still exist with both the application and the predictive ability of their approach. Labaw (1980) offers an alternative approach to predicting behaviour in which behavioural aspects of people's lives form the basis of questionnaire design. Although less widely operationalised and tested than Ajzen and Fishbein's approach, recent investigation found that Labaw's approach to predicting behaviour was equivalent in terms of predictive ability, and was superior from a survey research perspective. Thus, Labaw's behavioural approach presents a feasible alternative to attitudinal-based approaches to predicting behaviour.*

### **Introduction**

It has generally been assumed that prediction of behaviour is best achieved by the understanding and measurement of cognitive variables. Occupying a central position in the study of behaviour research is the concept of attitude (Krosnick, Judd & Wittenbrink, 2005). Kraus (1995) observed that the computerised database PsychLit indexed more than 34,000 studies published since 1974 that address attitudes in some way. Similarly, a review of empirical and conceptual developments on attitudes between 1992 and 1995 by Petty, Wegener and Fabrigar (1997) reports that "a voluminous amount of material was produced concerning attitude structure, attitude

change, and the consequences of holding attitudes” (p. 609). Recent observation of computerised literature databases suggests many more attitude-related studies, across a range of research disciplines, have been published since Kraus and Petty et al.’s earlier observations.

Perhaps the most fundamental assumption underlying the attitude concept is the notion that attitudes in some way, guide, influence, direct, shape, or predict actual behaviour (Ajzen & Fishbein, 1974; Gross & Niman, 1975; Kraus, 1995). Thus, it is not surprising that researchers interested in human behaviour theory ascribe great importance to the role of attitudes in predicting and explaining human action. With few exceptions, the assumption that attitude is useful for predicting behaviour went unchallenged until the 1960s (Ajzen & Fishbein, 1980). In fact, Kraus describes the first few decades of the twentieth century as an era of indifference to the attitude-behaviour relationship. Many researchers simply assumed implicitly that attitudes would be closely related to behaviour. The need to demonstrate that attitudes predicted behaviour was not seen.

However, between the 1960s and the late 1970s, attitude research received much criticism (Tuck, 1976; Eagly & Chaiken, 1993; Kraus, 1995). Years of early research failed to provide strong support for the behavioural consistency or predictive validity of attitudes. It was found that people neither behaved consistently in different situations, nor acted in accordance with their measured attitudes. Thus, in time the feeling grew that stated attitudes are not always consistent with overt behaviour. In particular, a review by Wicker (1969) of 47 empirical studies of attitudes and behaviours concluded, “it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviours than that attitudes will be closely related to actions” (p. 65). This review resulted in considerable controversy and caused many researchers to question seriously whether attitude was still useful as a scientific construct to predict behaviour (Fishbein & Ajzen, 1975; Tuck, 1976; Ajzen, 1987; Kraus, 1995).

### ***Ajzen and Fishbein’s approach to predicting behaviour***

One explanation offered for the inconsistency in attitude-behaviour findings is that historically researchers have not universally agreed on the components or elements of

the attitude construct, and as a consequence, nor have they agreed on an explicit definition of attitude. With no clear definition of attitude available there was no clear approach as to how attitudes should be measured, leading to a variety of measures of 'attitude' reported in the early literature (Gross & Niman, 1975; Tuck, 1976; McGuire, 1985). For example, in a review of research published between 1968 and 1970, Fishbein and Ajzen (1972; cited in Fishbein & Ajzen, 1975) found more than 500 different procedures that had been used to measure attitude.

In recognition of early difficulties with the attitude-behaviour relationship, Ajzen and Fishbein advanced a theory in which the attitude concept is examined in separate parts (Fishbein, 1963, 1967; Ajzen & Fishbein, 1973). Specifically, the foundation for Ajzen and Fishbein's conceptual framework is provided by their distinction between four components: beliefs, attitudes, intentions and behaviours.

### *Beliefs*

A person's attitudes are believed to form in response to the acquisition of certain beliefs. Beliefs, therefore, are the fundamental building blocks upon which Ajzen and Fishbein's conceptual framework is based. Fishbein and Ajzen (1975) posit that people may acquire beliefs on the basis of direct observation, or information received from outside sources, or by way of various inference processes. East (1990) explains that most people hold both positive and negative beliefs about an object (e.g. person, action), and attitude is viewed as corresponding to the total affect associated with their beliefs. For example, the belief that 'the prime minister is an effective leader' links the object 'the prime minister' with the positive attribute 'effective leader'. On the other hand, a person may also believe that the object, 'the prime minister', is linked with the negative attribute 'is out of touch with ordinary people'.

Therefore, the attitude concept can be viewed as a set of beliefs, each belief can be thought of as a separate attribute, and a person's overall attitude toward the object is a function of his or her evaluations of those attributes. Different people may have similar beliefs about various objects but may give them quite different evaluative weights. Thus, similar beliefs may result in different attitudes, depending on the different evaluative weights given. Hence, individuals will vary in their attitudes about, say, political voting preferences, depending on the strength and mix of beliefs

they have about this concept. Moreover, in the course of people's lives, their experiences lead to the formation of many different beliefs about various objects, actions, and events. Some beliefs may persist over time, others may be forgotten, and new beliefs may be formed. Some beliefs can be relatively stable, whereas others can vary considerably. Therefore it follows, as beliefs are not static, neither are attitudes; some attitudes may be relatively stable over time, and others may frequently alter.

### *Attitudes*

Fishbein and Ajzen (1975) introduced the idea of corresponding measures of attitude and behaviour, which has become central to their conceptual framework. They argue that the *attitude to an object* is not necessarily related to the *attitude to behaviour towards that object*, and that researchers' failure to recognise this attitudinal distinction has led to inaccuracies in behavioural predictions. For example, someone may have a very favourable attitude towards a political party (the object), but not be inclined to vote at the next election (the behaviour towards the object). Hence, correlations between attitude to the object and action toward that object may not be high. Therefore, Ajzen (1988) suggests if it is the action toward the behaviour a researcher wishes to predict, it is the attitude towards performing this action that needs to be measured.

### *Intentions*

For many years researchers assumed that the relationship between attitude and behaviour was direct. That is, the more favourable the attitude, the more likely someone is to behave in accordance with that attitude, with no other variables intervening the relationship. However, Ajzen and Fishbein (1980) disputed this assumption, and argued that attempts to predict behaviour simply by measuring attitudes will not succeed.

Within Ajzen and Fishbein's conceptual framework, attitude is viewed as *one* major determinant of the person's intention to perform the behaviour in question. However, other beliefs are also considered to be relevant for the formation of behavioural intentions (Ajzen & Fishbein, 1970). Normative beliefs are those that occur due to other people's influence on whether an individual should or should not perform the

behaviour in question. For example, the influence of friends, family or work colleagues may impact upon a person's intention to vote for a political party. This explains why two people may have the same attitude toward, say, The Green Party, but may behave differently in terms of political voting, depending on the degree to which other people influence their actions. In addition to attitude and normative beliefs, Ajzen (1985) acknowledged that the formation of intentions to act may also be influenced by aspects that are not under a person's volitional control, such as the requirement of certain abilities, or necessary resources. For example, in addition to attitudinal beliefs or normative beliefs, a person's intention to vote may also be influenced by his or her perceived ability to travel to a polling booth on Election Day. For this reason, the concept of a person's perceived ability to act, should he or she want to, was later included in Ajzen and Fishbein's conceptual framework, to account for situations where behaviour is not considered to be under a person's voluntary control.

### *Behaviours*

Ajzen and Fishbein view behavioural intentions as the immediate antecedents of corresponding overt behaviours; hence, the best prediction of behaviour is a person's intention to perform the behaviour. The apparent simplicity of this approach is somewhat deceptive, however. Fishbein and Ajzen (1975) assert there are two factors that can disrupt the intention-behaviour relationship. The first is the intervening time between the stated intentions and the actual time of the act. Since it is often impractical to measure a person's intention immediately prior to performance of the behaviour, the measure of intention obtained at one time may not be representative of the person's intention at the time of the behavioural observation (East, 1990). This is due to the fact that behavioural intentions are affected by many situational factors, which may intervene and disrupt the attitude-behaviour relationship. In turn this leads to a situation where behavioural intentions do not correspond well with actual behaviour. For example, Fishbein and Ajzen (1975) explain that if a person states an intention to buy a car in three months time, any change in his or her financial position, the price of the car, or the availability or price of petrol may influence that stated intention.

A second factor that Fishbein and Ajzen (1975) suggest causes problems in attitude-intention-behaviour measurement is described as the degree of compatibility in levels of specificity. That is, an intention can only provide an accurate measure of a predicted behaviour if there is compatibility in what exactly is being measured. Therefore, Fishbein and Ajzen state it is important that the measures of attitude and intention that are obtained are at the same level of specificity as the behaviour they are trying to predict, in order to match cause and effect. That is, the more precise the behavioural intention which is obtained, the more likely it is to be accurately related to the subsequent behaviour.

Fishbein and Ajzen (1975) refer to an early, and frequently cited empirical study by LaPiere (1934) to illustrate this aspect of their theory. LaPiere undertook an investigation into racial prejudice in which he travelled across the United States with a young Chinese couple. They visited 251 hotels and restaurants, and were refused service only once. Studies at the time indicated that there was much anti-Chinese sentiment in the USA. Six months after the trip, LaPiere wrote to each of the establishments asking if they would offer service to Chinese guests. Of the 128 who responded, 118 (90%) claimed that they would not serve them, in spite of the fact that all had previously done so. This early study was frequently cited as evidence that little correlation exists between attitudes and behaviour. However, in Fishbein and Ajzen's view, the measure used, which was whether the hotel and restaurant owners "would accept members of the Chinese race as a guest in their establishments" may have received a different response if they had worded the question "would you accept a young, well-dressed, well-spoken, pleasant, self-confident, well-to-do Chinese couple accompanied by a mature, well-dressed, well-spoken....educated European gentleman as guests in your establishment?" (p. 375). That is, in Ajzen and Fishbein's view there was no compatibility between the attitude toward the behaviour measure and the behavioural intention measure used in this study.

#### *The predictive ability of Ajzen and Fishbein's approach*

Ajzen and Fishbein's conceptual framework has led to improvements in the prediction of behaviour since Wicker (1969) earlier questioned the accuracy of predictions based on attitudinal data, and forms the basis of most attitude research today (Foxall, 2005). Yet meta-analyses of research using their framework show it only explains, on

average, between 40% and 50% of the variance in intention, and between 19% and 38% of the variance in behaviour (Sutton, 1997). Thus, questions are still being raised about the performance of attitude models in predicting and explaining intentions and behaviour (Chandon, Morwitz & Reinartz, 2005; Foxall, 2005). Ajzen (2002) recently conceded that, despite numerous attempts to improve the limitations and predictive ability of their models “vexing problems remain” (p. 666).

Foxall (2002) argues that the main problem with investigations of human behaviour to date is the prevailing view that prediction can occur from measures of beliefs, attitudes and intentions, regardless of situational factors. Foxall does not single out the Ajzen and Fishbein approach *per se* for criticism but suggests that as their approach represents the most sophisticated methodology available to researchers, whatever limitations apply to it will also affect the less sophisticated methods of investigating or predicting behaviour. Clearly, there is a need to consider alternative approaches to predicting behaviour than those based on attitudes.

### ***Labaw’s approach to predicting behaviour***

One avenue of reappraisal of the use of cognitive variables to predict behaviour is to consider an alternative approach based on behavioural variables, such as the one proposed by Labaw (1980). Labaw’s background was as a researcher in the area of public opinion surveying. She proposed a foundation for a systematic theory of questionnaire design, which places much emphasis on the underlying framework of questionnaire development (Gendall, 1998).

Labaw’s (1980) approach to questionnaire design developed as a result of her lack of success using the accepted attitudinal approach to predicting behaviour. Labaw does not believe that accurate prediction of human behaviour using attitude concepts is possible using questionnaire techniques. She states:

Frustrated with the lack of predictability of purely attitudinal questions, and rather stunned by the huge gap between what people say and what they then do, I felt it necessary to re-evaluate the role of these types of questions within surveys and to find alternatives to them which could be used in predicting behaviour. Consequently, attitude questions have become a minute part of surveys I design (p. 32).

To Labaw, attitudes are often what she refers to as “mere surface manifestations of larger, structural movements beyond the control or even the consciousness of individuals” (p. 82). The inference of this statement is that rather than ask respondents about their attitudes, which they may not understand themselves, it is more helpful simply to ask direct questions about the aspects of their lives upon which their attitudes are based. Labaw’s rationale for this approach is that people are much better able to say what they do now and have done previously, compared with what they might do in the future.

An underlying theme of Labaw’s approach to predicting behaviour is to determine levels of respondent consciousness. She argues that, as a rule, people have not thought about, and do not know their feelings about most issues that have not directly affected them. Thus it is important to determine how close to the issue or action of interest the respondent is. Closeness for survey purposes is equivalent to firsthand (or fairly direct) personal experience. Accordingly, Labaw’s approach to predicting behaviour is to determine respondents’ levels of consciousness about the behaviour of interest using experience-related questions. Using an analogy based on blood donation, Labaw’s approach suggests that someone who has donated blood knows his or her feelings about blood donation better than someone who hasn’t, and similarly, someone who knows someone else who has donated blood has a greater level of consciousness about the topic than someone who doesn’t know someone who has donated blood. Hence, she argues, there are various levels of consciousness, depending on a person’s level of experience with an action. As a consequence, Labaw’s approach to predicting behaviour assumes that someone with greater direct or even indirect experience of blood donation would be more capable of accurately indicating their willingness to donate blood themselves than someone with no experience.

Labaw argues that by replacing attitudinal questions with behavioural questions, it is the researcher not the respondent who analyses and projects meaning from the responses. In her view, cognitive questions, based on hypothetical situations, often shift the responsibility for analysis from the researcher to the respondent. Instead, she argues the researcher should use questions in which the respondent can accurately describe what he or she does, and in this way, the answers do not require imaginative

skill, or projectable consciousness on the part of the respondent. In essence, Labaw concluded that to predict behaviour, attitudinal questions, the answers to which can never be externally validated, should be replaced by questions that respondents can 'truthfully' answer: that is, questions with a verifiable answer on which researchers can base predictions of future behaviour.

Specifically, Labaw argues that respondent consciousness in relation to the topic or action of interest relates to three components, which she believes provide a means of predicting actual behaviour. Labaw argues that by adopting an approach in which we establish the respondents' environment, what respondents know, and their past behaviour, researchers could make better predictions of their behaviour than is possible by measuring their attitudes. Each component of Labaw's approach to predicting behaviour is discussed in the following sections.

### *Environmental Influences*

The first component of Labaw's approach to predicting behaviour is the *environment*, which Labaw describes as the physical aspects of people's lives over which they have little control but which impinge on their ability to act or respond in specific ways, regardless of their attitudes. These aspects include age, gender, health status, location, mobility level, and education level. Labaw argued these aspects are important because they provide greater depth to understanding human behaviour than attitudes, which may be much shorter lived.

### *Knowledge*

Labaw refers to the second component in her approach, *knowledge*, as a respondent's level of knowledge about the topic or related action. Whilst definitions of the exact components of knowledge and techniques to measure knowledge may vary, it is generally agreed that an individual's level of knowledge about an action relates to his or her subsequent behaviour to that act (Brucks, 1986; Allen & Butler, 1993; Andreasen, 1995). Thus, Labaw argues that the way people behave often results from what they know about an action, or equally, their behaviour may relate to what they do not know. Hence, based on her approach it could be reasoned that a respondent's level of knowledge about, say, a product's country of origin may have a direct

influence on his or her purchase behaviour. For example, purchase behaviour of fresh produce from a supermarket may be influenced by whether or not people know if it was produced locally or imported from overseas.

### *Past Behaviour*

The third component of Labaw's approach to predicting behaviour is people's *actual behaviour*; in particular, her approach emphasises the importance of past behaviour as a predictor of future behaviour. Debate frequently arises among behaviour researchers as to the role of past behaviour in determining future behaviour. For example, within Ajzen and Fishbein's conceptual framework, future behaviour is shaped by beliefs, and beliefs are thought to incorporate past experience. However, even proponents of attitude-based models have found that people's future behaviour is more accurately determined by measures of past behaviour, compared with those provided by cognitive measures (Foxall, 1997; Sutton, 1998).

Labaw argues that behaviour questions are particularly important in areas where potential future behaviour is under study. In particular, the frequency with which behaviours have been performed in the past tends to correlate well with later actions. Thus, she posits, when designing a questionnaire aimed at determining potential future behaviour, the most important design technique is to include a battery of behaviour questions detailing past and present behaviour that is similar to or related in some way to the potential behaviour under study.

### *Comparison of two approaches to predicting behaviour*

Labaw's approach to predicting behaviour, using questions that can be 'truthfully' answered, has not been as widely operationalised or tested as Ajzen and Fishbein's conceptual framework. Numerous studies have been undertaken in which various aspects of Ajzen and Fishbein's approach have been examined and tested, and the results are widely disseminated in the academic literature. By contrast, Labaw's approach is not cited in any of the well-known survey research or questionnaire design texts. Nevertheless, given the limitations currently identified with cognitive approaches to predicting behaviour, a need clearly exists to consider alternative approaches such as Labaw's.

The main distinction between Ajzen and Fishbein's approach to predicting behaviour, and Labaw's approach lies in the nature of the questions used to formulate a questionnaire. Ajzen and Fishbein's questionnaire design incorporates questions in which respondents are asked their feelings and beliefs about the behaviour under investigation. This typically involves the use of numerous questions using standard attitude scaling procedures, most commonly the semantic differential. By contrast, Labaw's approach uses questions that, at least theoretically, have verifiable answers.

Two recent studies (Holdershaw, Gendall & Wright, 2003; Holdershaw, 2006), in which direct comparisons were made of the ability of each approach to predict blood donation behaviour, found that Labaw's approach was equivalent to Ajzen and Fishbein's in terms of the variance explained. In absolute terms, neither approach was good at predicting blood donation behaviour. Lack of variation in the sample may have been a factor in this finding; only 12% of respondents reported that they had donated blood. Thus, additional research is needed to further test the predictive ability of Labaw's approach using various behaviours of interest.

However, an important finding of the two studies was that greater ease of questionnaire application in the field was achieved using Labaw's survey design, compared with Ajzen and Fishbein's attitudinal approach to questionnaire design. No discernible difficulties occurred with the application of Labaw type questions in the field, but limitations were identified with application of Ajzen and Fishbein's belief-based questions. Liska (1984) also noted that Fishbein and Ajzen models are more strongly supported in laboratory than field studies. Given that Ajzen and Fishbein's conceptual framework is so pervasive in survey methodology, this finding was important.

One aspect of respondent dissatisfaction with cognitive questions occurred due to an apparent difficulty respondents had in differentiating between the two components of the belief-based measures, which consist of paired items. Ajzen (1985) provides sound methodological reasons for the wording and question order of paired items, yet application in the field does not appear to complement the rationale for the methodology. For example, one respondent in Holdershaw's (2006, p. 252) study commented, "there are too many scale questions which seem completely irrelevant. They all seem to be asking the same thing." In a similar study, Knight (1983) too

reported difficulties with respondent fatigue when presenting an Ajzen and Fishbein type questionnaire in several parts. Initially he had intended to use three parts to a question, but proceeded with two parts after pilot testing found respondent fatigue to be a problem, even with only two sections to each question. Knight states:

It was impossible to avoid repetition which led to irritation and boredom on the part of some respondents. In fact, two questions were dropped mid-way through the survey and two others were deliberately omitted for certain respondents to ensure that the most important questions were answered (p. 68).

Oppenheim (1992) explains a difficulty with attitudinal based research is that attitudinal questions are more sensitive than factual questions to changes in wording, context, emphasis, and so on; therefore it becomes almost impossible to assess reliability by asking the same question in another form. Hence, typically numerous questions are asked and then it is necessary to ask the same question in similar forms. Of course, the rationale for this approach is not obvious to respondents.

When comparing Ajzen and Fishbein's and Labaw's survey methodology, Holdershaw (2006) also found that some respondents experienced difficulty understanding what certain attitude-based questions asked. No such difficulty with question understanding occurred with the Labaw-type questions, which are factual in nature, rather than based on internal thoughts and feelings. Labaw defines one example of a bad question as one that is incomprehensible to the respondent because the wording, the concepts, or both, cannot be understood. In her view, bad questions are any questions that obscure, prohibit, or distort the fundamental communication from respondent to researcher. Instead, Labaw posits that a questionnaire should be designed to prevent it becoming simply an instrument of the writer's perceptions, values, and language, which is then inflicted upon the respondent. Arguably, many attitude-based questions routinely used in survey research would be labelled 'bad' questions according to Labaw's definition.

### ***Conclusion***

Examination of current research practice suggests that, by and large, researchers opt for a cognitive-based questionnaire framework, designed to attempt to understand 'what is going on inside people's heads', as a basis for predicting future behaviour. In

particular, Ajzen and Fishbein's attitude-based approach is considered the most sophisticated survey methodology available to researchers for behavioural prediction. However, recent research supports the use of a viable alternative to the continued, and often unquestioning, reliance on attitudinal questions as a basis for understanding and predicting behaviour. Instead, it is suggested that greater use of questions that, at least theoretically, have verifiable answers is incorporated into research design. Comparison of Ajzen and Fishbein's attitude-based survey methodology with Labaw's behavioural approach found that the predictive ability of the two approaches was equivalent; however, Labaw's behavioural approach was superior from a survey research perspective.

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