



Hybrid Delphi: A methodology to facilitate contribution from experts in professional contexts

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ARTICLE INFO

Article history:

Received 28 October 2010

Received in revised form 2 March 2011

Accepted 3 March 2011

Available online 1 April 2011

Keywords:

Nominal Group Technique

Focus Group

Delphi

Qualitative technique

Decision-making

ABSTRACT

This work presents a new methodology based on three well-known qualitative techniques (Focus Group, Nominal Group Technique and Delphi method), with a view to harmonising their potentialities and reducing their limitations, through application in real contexts with experts who are professionals in their respective activities.

The main contribution of this methodology is its joint consideration of the needs of the investigators and also of experts who act in professional contexts, in order to improve the effectiveness of preceding techniques in achieving the scientific and social objectives of the study.

We have tested this methodological approach in three real cases, with experts holding different responsibilities in different companies and public organisations, and the results secured are highly satisfactory, due to both the quantity and quality of the proposals obtained, and the satisfaction exhibited by the experts taking part, with regard to the research methodology.

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1. Introduction

What is the best way of extracting and processing the information possessed by a set of professionals concerning a problem or phenomenon? Since Helmer and Rescher [1,2] laid the foundations for the scientific use of expert opinion in the areas of decision and prediction, different techniques have been developed over the years aimed at responding to the initial question, in different contexts and with different objectives. All these techniques have, in general, sought to contribute improvements in one or some of the fields of action originally delimited by Helmer [3]: 1- improvement in the selection of the most suitable information sources for each concrete case (relying on the appropriate experts), 2- assisting in the effective development of experts' activities, facilitating transmission of the information required, and 3- development of methodologies of action that make the processing of that information possible, achieving outcomes of greater quality.

This methodological development is still of relevance, because knowledge advances and because needs change with time. In this regard, one sphere of great scientific and social interest is the obtaining of ranked lists of problems, practices, solutions... regarding a specific phenomenon using the tacit knowledge of professional experts who are undergoing problems, carrying out practices or applying solutions in their respective contexts of action. By professionals we refer to experts who voluntarily collaborate in a forecasting or group decision activity, freely contributing their knowledge, which is normally a product of their usual working activity. From this category we exclude, therefore, students, scholarship holders and other "captive experts". For this purpose different group techniques may be employed, some of which already have a broad academic history of application. However, those of us who apply them feel that there is much more knowledge that we have been unable to access. A good deal of the possible inefficiency stems from the fact that it is difficult to find an active route to the professionals who possess the knowledge we are eager for and hard to get them to make that knowledge explicit: it is not easy to locate them, they tend to have

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little time at their disposal, it is complicated to bring them together in face-to-face sessions, they have needs and interests different from those of researchers, they tend to be hard to pin down in their answers, they may have fears, personal characteristics and assumed roles that limit their responses, and so forth. Consequently, the right methodologies need to be developed for these kinds of experts and research objects.

With this view in mind, we make a methodology proposal in this work that is a hybrid of three techniques that are widely acknowledged and have a long track record: directed face-to-face discussion groups or Focus Groups, the Delphi Method and the Nominal Group Technique. Each of the three has its own characteristics that are highly suitable for obtaining the required results from this kind of expert, but they also have their disadvantages. A careful combination of these characteristics can reduce their limitations whilst retaining what they contribute. In the article we set out the characteristics and limitations of the Focus Group, the Delphi and the NGT, the purpose, configuration and development of the proposed hybrid methodology, which we have called Hybrid Delphi, and the practical application of this new methodology in three different professional contexts.

2. Focus Group

Focus Groups are carefully planned discussions or interviews, designed to obtain information within a defined area of interest, within a permissive and undirected atmosphere [4–8]. They fall within the category of structured face-to-face discussion groups [9], which means, therefore, that a variable group of experts (anyone who can, a priori, contribute input relevant for the study [10]) is brought together within the same physical space in order to interact with one another around a predefined subject of discussion, under the guidance of a moderator. From the perspective of use with professionals, the principal virtues are that they are relatively simple to set up and run (they require absolutely no statistical treatment), they help to satisfy certain social needs (power, status, recognition, affiliation) [9], they are very flexible and open in the way they unfold, they are low cost, the group members themselves can perform the task of validating individual contributions in real time [11], the results are fast [12], they encourage learning through sharing information and opinions [11] and they tend to have high subjective validity, in the sense that the participants tend to have a highly positive acceptance and assessment of the results obtained [5,13–17].

Nonetheless, they also present some important limitations: analysis and presentation of data is very complex due to group interaction; difficulties in calling the group together; risk of high degree of dispersion in the answers; a limited number of participants in each group; possibility of pressure to conform due to haste [18], to groupthink [19] or from a desire to be accepted by the group [20]; and, above all, a risk of participants being distracted or inhibited due to their own personality [21], to personal communication problems [18], to the influence of others (fear of social marginalisation [19]), to contagion from the presence of other inhibited individuals or to status incongruence and dominant personalities [18,22–24].

3. Delphi method

The Delphi method [25–30], is a social research technique which seeks to obtain a reliable group opinion from a set of experts. This is a method of structuring communication between a group of individuals who can provide valuable aid for solving a complex problem.

It has been used since the sixties in academic and business spheres and has been employed principally as a technique for planning and consensus in uncertainty situations in which it is not possible to use other techniques based on objective information. Its flexibility and simplicity have led to its successful application in different geographical and thematic contexts [31].

Its main characteristics are that (1) it is an iterative process; (2) it keeps the anonymity of the participants, or at least that of their replies, as these go directly to the coordinating group; (3) there is controlled feedback; and (4) statistical group response: all the opinions form part of the final reply.

The methodology of this method provided valuable solutions for problems inherent in the traditional group opinion based on direct interaction: reduction of the influence of some undesired psychological effects amongst participants (inhibition, distraction, dominant personalities...), selective feedback of relevant information, deeper reflection due to iteration, statistical democratic results and a flexible methodology that is simple to manage. Nonetheless, it is not free from important methodological weaknesses, which have been highlighted in numerous works [27,30,32–39] and negatively affect its use with professionals: limitation of the interaction that accompanies controlled feedback, restriction of the possibility of social reward for individual contribution to the group, the impunity that anonymity lends to irresponsible actions, the time required for its development, the effort demanded of participants, the fact that the methodology makes it easy for the study leader or coordinator to manipulate out of self-interest and that it is hard to correctly define the problem so that the experts also understand it in the same way, when there is no personal contact and dialogue and explanation do not easily flow, which may produce an artificial divergence in the answers. Other additional limitations are, for instance, that it is difficult to verify the precision of the method, that possible interrelations between predicted outcomes are not taken into consideration, that consensus is used as a means of approaching the truth and that, a priori, it is difficult to know what constitutes a real expert.

4. Nominal Group Technique (NGT)

The NGT is a structured method for capturing and aggregating opinions emerging from a group of experts who physically coincide in terms of place and time [40–42]. In this regard, it might be deemed to be a particular case of FG. The NGT was conceived

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