

## REVIEW OF DIFFERENT RESEARCH METHODS

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## Review of Different Research Methods

The development of research methodology is carried out in accordance with the logic of scientific study. This approach involves a set of theoretical and empirical methods the combination of which makes it possible to study complex and multifunctional objects using reliable and valid techniques. The application of various methods gives the researcher an opportunity to study the problem comprehensively including its aspects and parameters. The purpose of this paper is to discuss the key features of main research methods used within qualitative and quantitative study designs.

### Qualitative Research Methods

Qualitative research methods allow the investigator to collect and analyze detailed information about the subject of research (for instance, about inclinations, internal motives, values, preferences, and so on). They provide the researcher with a more comprehensive understanding of ongoing processes, contribute to the identification of patterns of behavior, and give an opportunity to determine the cause of the phenomenon or reaction (Sekaran and Bougie, 2016). Consequently, this category of methods is aimed at studying the widest possible range of opinions. The main characteristics of qualitative research are the collection of information in a free form and its focus on understanding and interpreting the data obtained so that the investigator can formulate hypotheses and productive ideas.

It is crucial that no single universal method that can provide objective information. It is necessary to use comprehensive methodology that will include several complementary methods (Sekaran and Bougie, 2016). The expediency of a particular

methodology depends on the content of the problem under analysis, the degree of its development, and the resources available to the researcher.

### *Observation*

Observation is one of the most commonly used methods. It implies a purposeful perception of the phenomenon due to which the researcher can receive factual evidence. During all observations, the researcher should have a protocol in which the main objects will be pre-selected (Sekaran and Bougie, 2016). The method of observation can be controlled and uncontrolled. In the first case, the researcher becomes a member of the group in which the observation is being conducted; in the second case, he or she is detached, conducts a hidden or selective observation. According to statistics, this method is often used since it is quite feasible, but it has a particular weakness related to the fact that the investigator conducts observation under the influence of personal characteristics (Sekaran and Bougie, 2016). The researcher can achieve objectivity by applying the method of triangulation to validate the findings.

### *Survey*

The survey method is divided into several subcategories, which are conversation, interviews, and questionnaires. A conversation can be either a self-contained method or an additional one. It is used to receive an explanation when some indicator or factor was not clear enough (for example, during observation). The conversation is held in a free form based on the list of questions; the interviewee's answers are not recorded (Bryman, 2015). When interviewing, the researcher asks questions in a certain sequence and writes down the answers. An interview can be direct or indirect (for instance, over the phone) (Bryman, 2015). In a questionnaire method, the respondent

completes the list of open and close-ended questions in the presence of the investigator.

### *Focus Group*

This method implies collecting information during a series of group discussions in the form close to conversation. During focus group, participants are immersed in an environment that motivates them to reflect and express their opinions on a particular topic. Participants need to justify their position so that the researcher can keep a record of the systematized argument (Bryman, 2015). Notably, in the course of such interaction, the group might exhibit a drastically different position regarding a problem that was not initially brought up for the discussion. However, a drawback of this form of research may be a distortion in the expression of the participants' real views. This can happen when the focus group boils down to the opinion or is guided by a leader.

### *Delphi Method*

Delphi method is a technique that is not used often; however, it has a number of advantages. This technique is concluded to a survey of a group of experts in which they anonymously exchange opinions and form an agreed collective opinion. This method can be used in any settings when forecasting is necessary and when there is not enough information to make a decision (Bryman, 2015). In general, Delphi method is used during the formulation of the problem and the evaluation of various ways to solve it. The characteristic feature of this approach is anonymity of experts, which suggests a complete rejection of personal contacts (Bryman, 2015). The method is also conducted in several stages consisting of a series of questionnaires. In addition, feedback is well-regulated, and expert assessments and arguments remain anonymous. Moreover, the

results obtained using this method can be processed statistically in order to form an objective group response. Delphi method enables the researcher to gather valid and impartial results.

### Quantitative Research Methods

Quantitative research is based on a functional paradigm, which asserts that the surrounding reality has an objective ontological structure. Therefore, specific phenomena can be measured by statistical processing of digital indexes. Moreover, this approach assumes that objective truth can be measured and justified using scientific evidence (Cohen, Manion and Morrison, 2013). The quantitative data are accurate and allow generalizing and establishing a causal relationship between the facts of objective reality. In order to use quantitative methods of academic research, a scientific hypothesis is formulated, which is tested empirically through the collection and analysis of digital data. An important advantage of these methods is that the probability of bias due to personal characteristics of the researcher or the subjectivity of interpretation is low enough, which is not characteristic of qualitative methods (Bryman, 2015). Thus, the researcher receives the opportunity to view the interaction process as a tangible phenomenon and can analyze it relying on statistical techniques.

#### *Scaling*

It is one of the varieties of questionnaires, which is aimed at obtaining quantitative information by measuring the relation of specialists to the subject of expertise. The measurement of this ratio can occur on a rank, metric, and nominal scale. The construction of this system is quite complex, however, processing of data obtained by this method can provide comprehensive analytical information (Bryman,

2015). In order to analyze such results, researchers use the apparatus of mathematical statistics.

### *Content Analysis*

Content analysis is a formalized interpretation of documentary sources aimed at extracting meaningful information from arrays of analyzed resources. The scientist examines the content of documents or statements to identify the factors or trends that these statements reflect. After the quantitative influence of the factors studied was established, the researcher constructs a probabilistic model of the interrelation of these factors. In this case, the selected values will be correct if they are repeated with the required periodicity (Denicolo, Long and Bradley-Cole, 2016). To process the data properly, scientists build a multifactorial correlation model.

### *Experiment*

Unlike other methods, experiment targets at proving a hypothesis or assumptions made by the scientist. This approach involves a one-time test to check a particular pattern of thinking, behavior, and so on. In this method, the researcher examines the phenomena of reality in controlled and supervised conditions (Bryman, 2015). In general, an experiment is carried out based on a theory that determines the formulation of problems and the interpretation of results. Importantly, the investigator actively influences the conditions of the experiment creating new settings or changing the flow of the process in the necessary direction (Bryman, 2015). Simple empirical methods are used in experiments; however, the complexity of this method lies in the fact that the researcher should intentionally transform the investigated phenomena.

### Conclusion

Thus, it can be concluded that the expediency of using a particular method depends on the content of the problem, the degree of its development, and the resources that the researcher has. It is crucial that there is no universal method that can be used in any type of scientific research since each of the approaches has its advantages and disadvantages. In order for the researcher to obtain multidimensional information, it is necessary to appeal to a set of methods that will complement each other. The combination of qualitative methods with quantitative ones will allow studying the problem more deeply due to the collection of data of different nature.

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