# SOS POLITICAL SCIENCE & PUBLIC ADMINISTRATION
# M. A POLITICAL SCIENCE IV SEM
# RESEARCH METHODOLOGY (403)

## UNIT-IV

## TOPIC NAME-CODING

## INTRODUCTION-

In the social sciences, **coding** is an analytical process in which data, in both quantitative forced (such as questionnaires results) or qualitative form(such as interview transcripts) are categorized to facilitate analysis.One purpose of coding is to transform the data into a form suitable for computer-aided analysis. This categorization of information is an important step, for example, in preparing data for computer processing with statistical software.Some studies will employ multiple coders working independently on the same data. This minimizes the chance of errors from coding and is believed to increase the reliability of data.

Data coding in research methodology is a preliminary step to analysing data. The data that is obtained from surveys, experiments or secondary sources are in raw form. This data needs to be refined and organized to evaluate and draw conclusions. Data coding is not an easy job and the person or persons involved in data coding must have knowledge and experience of it.

### Means of code-

A code in research methodology is a short word or phrase describing the meaning and context of the whole sentence, phrase or paragraph. The code makes the process of data analysis easier. Numerical quantities can be assigned to codes and thus these quantities can be interpreted. Codes help quantify qualitative data and give meaning to raw data.

### data coding-

Data coding is the process of driving codes from the observed data. In qualitative research the data is either obtained from observations, interviews or from questionnaires. The purpose of data coding is to bring out the essence and meaning of the data that respondents have provided. The data coder extract preliminary codes from the observed data, the preliminary codes are further filtered and refined to obtain more accurate precise and concise codes. Later, in the evaluation of data the researcher assigns values, percentages or other numerical quantities to these codes to draw inferences. It should be kept in mind that the purpose of data coding is not to just to eliminate excessive data but to summarize it meaningfully. The data coder should ascertain that none of the important points of the data have been lost in data coding.

## Need of code in quntiative data-

**Coding the qualitative data makes the messy scripts quantifiable**. How are you going to convince the stakeholders that the insights you collected in the interviews actually reflect users' needs and wants but not something you just eyeballed five minutes before the meeting? Simple, show them your data.

Codes in qualitative research are as important as numbers in a quantitative study. Your codes give you credibility when presenting them to your teams, your clients, and your stakeholders. With proper coding, you can say with confidence that these findings are in fact, representing the majority of user feedback.

**Coding the qualitative data creates structure**. "But we already have an interview script!" you say. Yes, a structured interview protocol can help researchers to locate the questions, but not necessarily the answers. As we know all too well, interviews don't always run as expected. Conversations can take an unexpected turn and open up a new area for a researcher to explore. This means that the same interview questions might be addressing different aspects of the problem. Coding the data gives you a way to organize your scripts in such that you can pull the scripts from the same code effectively without looking through the entire interview questions again.

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## A Quick Guide To Qualitative Coding

Codes are the smallest unit of text that conveys the same meaning (for the purpose of your research). Codes can be a word, a phrase, or a paragraph, you are in charge of choosing the forms of your codes and sticking with your choice for data consistency.

## 1.Determine The Type Of Coding Method You Want To Apply Before The Data Collection

## There're two types of coding methods, deductive and inductive.

**1.Deductive coding** is the coding method wherein you have developed a codebook as a reference to guide you through the coding process. The codebook will be developed before your data collection starts, usually in the process of researching the existing field. Usually, if you have a general direction in mind, you will be able to develop a rough codebook. Of course, the codebook changes as you code on, new codes will be added and categories re-organized. In the end, your codebook should reflect the structure of your data.

**Inductive coding** method is used when you know little about the research subject and conducting heuristic or exploratory research. In this case, you don't have a codebook, you're building on from scratch based on your data.

The two types of coding method have their own pros and cons, but the end result should be similar. The majority of your data should be coded and be able to form a narrative.

**CODING IN ACTION**

Once you know what types of text you're coding for, the action of coding is fairly simple — you select text, and give it a code name that captures the essence of the text. Next time when you encounter a text with same meaning, you give it the same code name. Here is an example.

Depending on what you want to find out, you may code both these two sentences "meals", in this case, each sentence is a code. You may also code "chicken and rice" and "beef lasagna" as "food" and "wine" as "drink", notice how this time each phrase is a code and you have two different codes? The detail of codes completely depends on your research question and what you're trying to get out from the data.

### 2. Initial Coding

The initial coding process is fast and relatively easy. You just need to read through your data and get familiar with it. At this point, you don't have to develop sophisticated codes for the data, but rather just an idea of what the overall data looks like. You can try to code sections with a broad code name for future reference, writing down notes as you read is also a good idea.

### 3. Line-By-Line Coding

As the name suggests, in this stage, you comb through your data with a closer eye. Your codes now should have more details. Try to code everything, even if you know certain codes are not going to make it in the endgame. Your analysis of the data will become more profound as your codes become more detailed.

### 4. Categorization

When you've finished the line-by-line coding, you'll usually have a messy collection of codes. This is when you want to put similar codes into the same categories and move them around in order to find out a way that reflects your analysis the best. By analyzing and sorting your codes into categories, you will be able to detect consistent and overarching themes for your data. And within the themes, you can tell the user story.

5.Determined themes

The categorization of codes reflects themes. The bigger categories are the overarching themes while the sub-categories supporting themes. This is where you can engage in storytelling from your data. The themes can tell the same story from different perspectives, or several different stories that connect with each other. With great narratives created from the themes, the messy qualitative data are now in a meaningful order.

*In a nutshell, coding is the data analysis process that breaks the text down into the smallest units and reorganizes these units into relatable stories*. As Christians and Carey suggest, the poetic resonance in a story is what every qualitative UX researcher strike to achieve.

**Why is it important to code qualitative data-**

**Coding qualitative data makes it easier to interpret customer feedback. Assigning codes to words and phrases in each response helps capture what the response is about which, in turn, helps you better analyze and summarize the results of the entire survey.**

**Researchers use coding and other qualitative data analysis processes to help them make data-driven decisions based on customer feedback. When you use coding to analyze your customer feedback, you can quantify the common themes in customer language. This makes it easier to accurately interpret and analyze customer satisfaction.**

## QUANTITATIVE APPROACH -

For disciplines in which a qualitative format is preferential, including ethnography, humanistic geography or phenomenological psychology a varied approach to coding can be applied. Iain Hay (2005) outlines a two-step process beginning with basic coding in order to distinguish overall themes, followed by a more in depth, interpretive code in which more specific trends and patterns can be interpreted.[1] Much of qualitative coding can be attributed to either grounded or *a priori* coding.[2] Grounded coding refers to allowing notable themes and patterns emerge from the document themselves, where as *a priori* coding requires the researcher to apply pre-existing theoretical frameworks to analyze the documents. As coding methods are applied across various texts, the researcher is able to apply axial coding, which is the process of selecting core thematic categories present in several documents to discover common patterns and relations.[3]

Coding is considered a process of discovery and is done in cycles. Prior to constructing categories, a researcher might apply a first and second cycle coding methods[2]. There are a multitude of methods available, and a researcher will want to pick one that is suited for the format and nature of their documents. Not all methods can be applied to every type of document. Some examples of first cycle coding methods include:

- *In Vivo Coding*: codes terms and phrases used by the participants themselves. The objective is to attempt to give the participants a voice in the research.
- *Process Coding*: this method uses gerunds ("-ing" words) only to describe and display actions throughout the document. It is useful for examining processes, emotional phases and rituals.
- *Versus Coding*: uses binary terms to describe groups and processes. The goal is to see which processes and organizations are in conflict with each other throughout the document. These can be both conceptual and grounded objects.
- *Values Coding*: codes that attempt to exhibit the inferred values, attitudes and beliefs of participants. In doing so, the research may discern patterns in world views.
- *Sub-coding*: Other names of this method are embedded coding, nested coding or joint coding. This involves assigning primary and second order codes to a word or phrase. It serves the purpose of adding detail to a code. The primary and secondary codes are often called parent and children codes.[4]
- *Simultaneous Coding:* When same parts of the data have different meanings and two or more codes are applied to the same parts, then this kind of coding is called Simultaneous Coding[2].

## Coding Examples-

Few examples are mentioned here to understand the data coding in a better manner.

"I prefer to shop from a store that provides a large inventory of the same product, every brand and every style in that product range. Usually in these stores you get maximum range of products you want to purchase. You get profits through deals and sales."

The data coder can assign different codes to what the respondent narrated above. These codes might be as following;

"Preference for horizontal markets"

"Horizontal integration"

"Shopping preference"

## Preliminary codes

When data coder assigns codes to the observed data, he cannot manage to assign well-refined codes in the first instance. He has to assign some preliminary codes first so that the data has become concise. He later on, further refines the codes to get the final codes. It must be kept in mind that codes are not the final words or phrases on the basis of which evaluation will be made. The researcher will filter the preliminary codes and then the final codes. He needs a pattern on the basis of which he can categorize the human behavior, action or likes and dislikes.

## Final codes

The final codes will help you observe a better pattern in the data. This pattern is necessary to reach the final evaluation or analysis stage of the data. The final codes in data coding mean finding out meaningful words and phrases from the observed data. The respondents often do not choose meaningful words in their responses. The coder needs to extract the meaning out of the respondent's wording. The codes in their final stage are like topics and themes, these themes generate a whole discussion to get the final results. Sometimes the interviewer or the observer writes down some codes as he observes the behavior of the respondent. Such codes are really worthy in the research because these codes cannot be derived from the written responses that the respondents provide. The data coder should look for the verbs and the actions that the respondent has mentioned in the text. He should also observe the behavior and where ever possible derive codes. One thing should be kept in mind that qualitative data analysis is all about finding out the meanings and interpretations, so the coder should have an eye for such things.

## Categories

The codes are given meaningful names and they are put in categories. These categories help refine the research a lot. When data is coded again and again, it get refined. The refined data itself leads to patterns and themes. The patterns are the key to find out the true results of the research. These patterns or categories determine where does the large amount of the data inclines.

## Conclusion: 6 main takeaways for coding qualitative data

### Here are 6 final takeaways for manually coding your qualitative data:

- **Coding is the process of labeling and organizing your qualitative data to identify themes. After you code your qualitative data, you can analyze it just like numerical data.**
- **Inductive coding (without a predefined code frame) is more difficult, but less prone to bias, than deductive coding.**
- **Code frames can be flat (easier and faster to use) or hierarchical (more powerful and organized).**
- **Your code frames need to be flexible enough that you can make the most of your results and use them in different contexts.**
- **When creating codes, make sure they cover several responses, contrast one another, and strike a balance between too much and too little information.**
- **Consistent coding = accuracy. Establish coding procedures and guidelines and keep an eye out for definitional drift in your qualitative data analysis.**