Landasan Penelitian

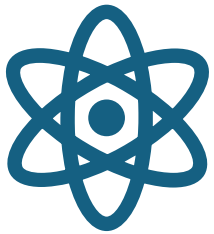
Maxensius Tri Sambodo

Peneliti Ahli Utama - BRIN

Senin 19 Mei 2025

Outline

- Originality and Novelty
- Perspective
- Bias
- Research process



"If we knew what it was we were doing, it would not be called research, would it?"

— Albert Einstein

Research is thus, an **original** contribution to the existing stock of knowledge making for its advancement

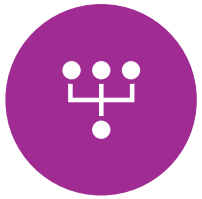
Kothari, 2004, p.1

Originality

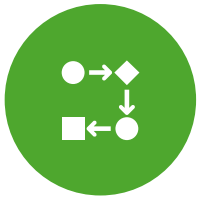
Providing new information for the first time.

Developing exiting study

Re-interpreting existing theories.



Test other people's opinions.



Using different methodologies.

Providing new reinterpretations of existing problems.

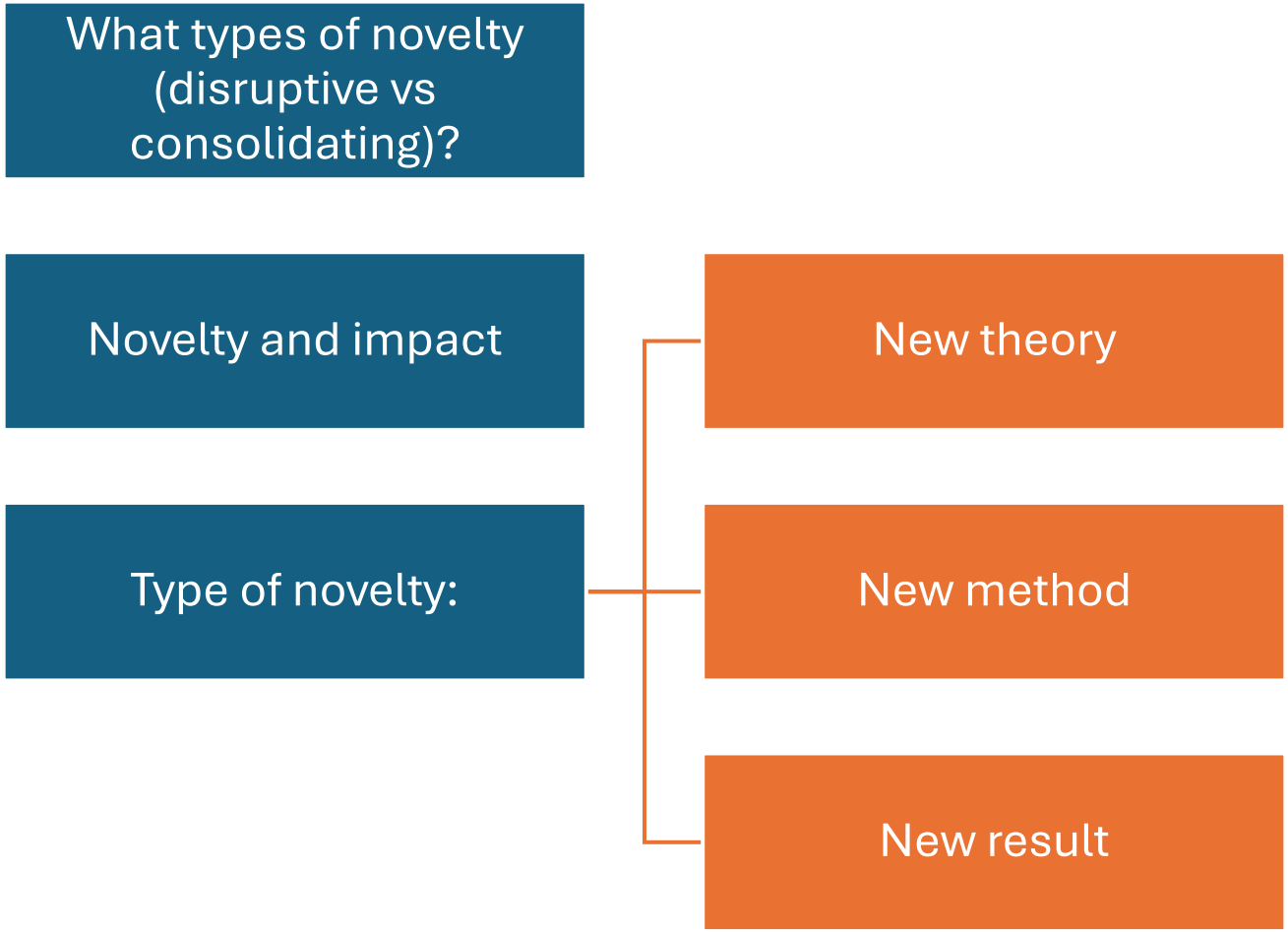
Repeating research in different contexts.

Artikel Yang Baik Seperti Apa?

- The originality of the work
- The importance of the questions addressed
- Appropriateness of the technique used
- The quality of data
- Significance of the conclusions

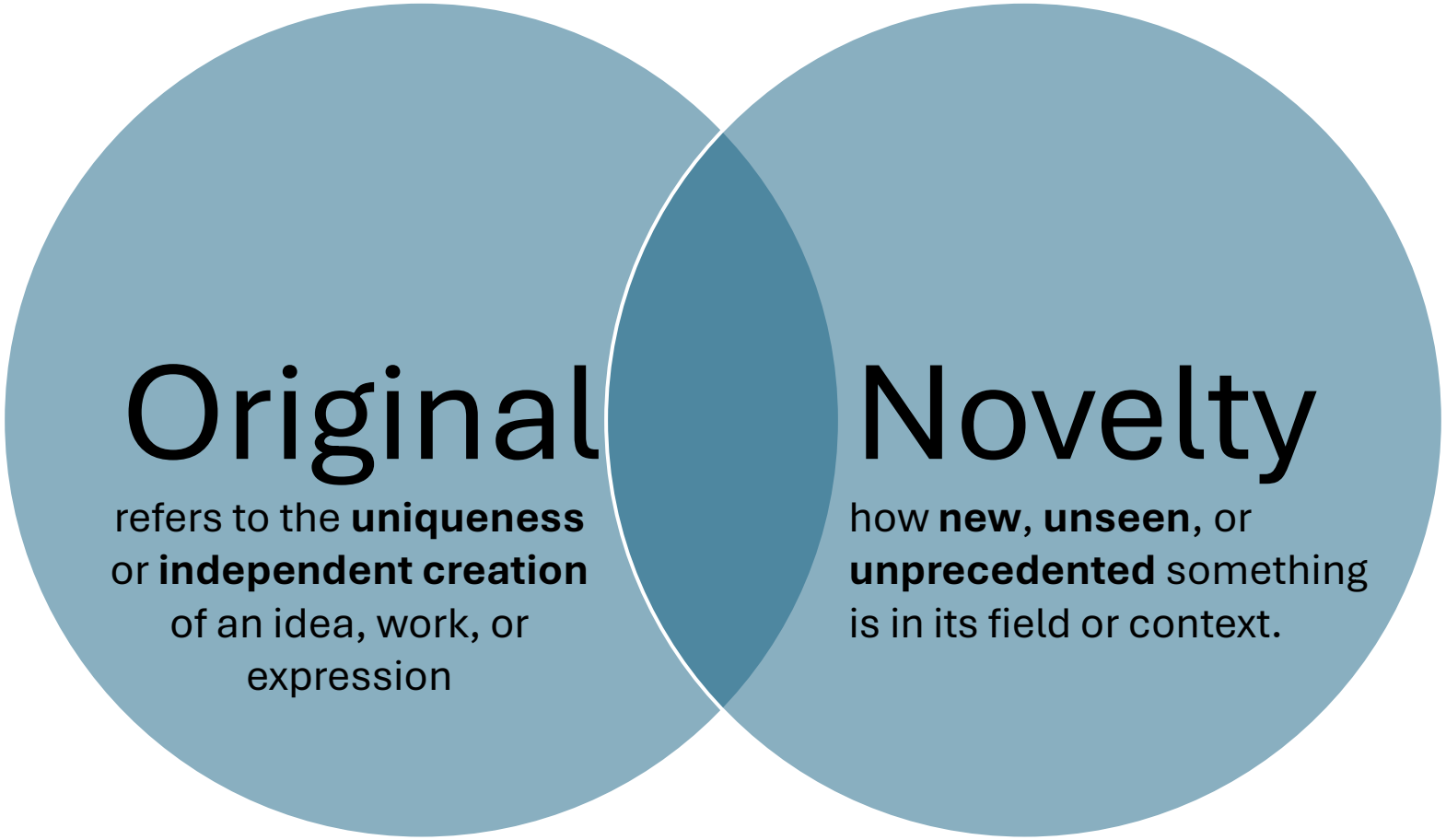
PROFESSOR MIKE CLEMENS
Biochemistry & Moleculer Biology, University of Sussex

NOVELTY


What types of novelty (disruptive vs consolidating)?
Novelty and impact
Type of novelty:
New theory
New method
New result

Academic Paper

In **academic research**, a paper should ideally be **both original and novel**—original in its authorship, and novel in its contribution



Quiz

Peserta harus memilih salah satu dari:

1. **Original** saja
2. **Novel** saja
3. **Keduanya**
4. **Bukan keduanya**

"Seorang pelukis melukis bunga matahari dengan gaya impresionisme dari imajinasinya sendiri."

?

"Sebuah tim ilmuwan menciptakan metode baru yang belum pernah digunakan untuk menyaring air laut menggunakan mikroalga."

?

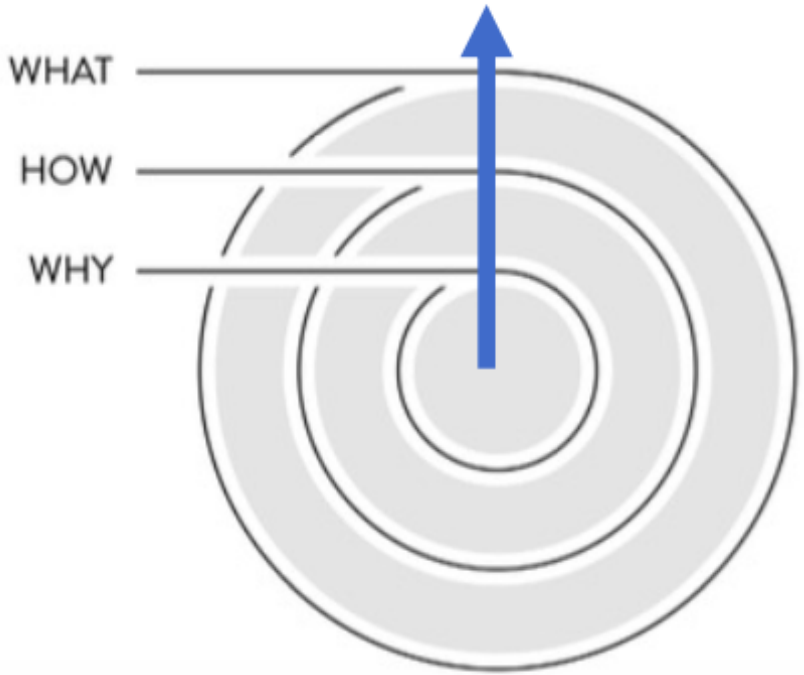
"Seorang mahasiswa menyalin esai orang lain tentang teori relativitas dan mengganti beberapa kalimat."

?

"Sebuah band mengaransemen ulang lagu tradisional dengan alat musik elektronik."

?

Golden Circle Concept (Sinek, 2009)



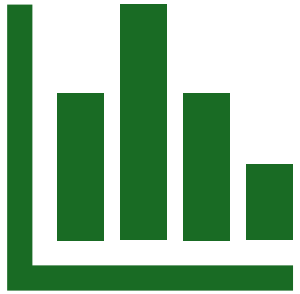
- why, relating to why ANALYISTS are motivated to pursue goals
- how, referring to how these goals are achieved
- what, focus on how these goals are achieved

Four Worldviews

Post positivism	Constructivism
• Determination • Reductionism • Empirical observation and measurement • Theory verification	• Understanding • Multiple participant meanings • Social and historical construction • Theory generation
Transformative	**Pragmatism**
• Political • Power and justice oriented • Collaborative • Change - oriented	• Consequences of actions • Problem centered • Pluralistic • Real word practice oriented

Research Approach Bias

Qualitative



Quantitative

Definisi

- **Qualitative research** is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The final written report has a flexible structure. Those who engage in this form of inquiry support a way of looking at research that honors an inductive style, a focus on individual meaning, and the importance of rendering [interpretation] the complexity situation.

The Characteristics of Qualitative Research

- **Natural setting**: qualitative researchers tend to collect data in the field at the site where participants experience the issue or problem under study. They do not bring individuals into a lab, nor do they typically send out instruments for individuals to complete. This up-close information gathered by talking directly to people and seeing them behave and act within their context is a major characteristic of qualitative research. In the natural setting, the researchers have fact to face interaction, often over time
- **Researcher as key instrument**: qualitative researchers collect data themselves through examining documents, observing behavior, of interviewing participants. They may use a protocol an instrument for collecting data, but the researchers are the ones who gather the information. **They do not tend to use or rely on questionnaires or instruments developed by other researchers.**

The Characteristics of Qualitative Research

- **Multiple sources of data**: qualitative researcher typically gather multiple forms of data, such as interviews, observations, documents, and audiovisual information rather than rely on a single data source. Then researchers review all the data, make sense of it, and organize it into categories or themes that cut across all the data sources
- **Inductive and deductive data analysis**: qualitative researchers build their patterns, categories, and themes from **the bottom up** by organizing the data into increasingly more abstract units of information. This inductive process illustrates working back and forth between the themes. Then deductively, the researchers look back at their data from the themes to determine if **more evidence** can support each theme or whether they need to gather additional information. Thus, while the process begins inductively, deductive thinking also plays an important role as the analysis move forward

The Characteristics of Qualitative Research

- **Participants' meanings**: in the entire qualitative research process, the researcher keeps a focus on learning the meaning that the participants hold about the problem or issues, not the meaning that the researchers bring to the research or that writers express in the literature
- **Emergent design**: the researcher process for qualitative researchers is emergent [in the process of coming into being or becoming prominent]. This means that the initial plan for researcher cannot tightly prescribed, and some or all phases of the process may change or shift after the researcher enters the field and begins to collect data. For example, the questions may change, the forms of data collection may shift, and the individuals studied, and the sites visited may be modified. The key behind qualitative research is to learn about the problem or issue from participants and to address the research to obtain that information

The Characteristics of Qualitative Research

- **Reflexivity** [circular relationships between cause and effect]: in qualitative research, the inquirer reflects about how their role in the study and their personal background, culture, and experiences hold potential for **shaping their interpretation**, such as the themes they advance and the meaning they ascribe to the data. This aspect of the methods is more than merely advancing biases and values in the study, but how the background of the researchers may shape the direction of the study.
- **Holistic account**: qualitative researchers try to develop a complex picture of the problem or issue under study. This involves reporting multiple perspective, identifying the many factors involved in a situation, and generally sketching the larger picture that emerge. A visual model of many facets of a process or a central phenomenon aids in establishing this holistic picture.

Definitions

Quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. The final written report has a set structure consisting of introduction, literature and theory, methods, results, and discussion. Like qualitative researcher, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling alternative explanations, and being able to generalize and replicate the findings.

5 TYPES OF STATISTICAL BIAS

Jenny Gutbezahl

https://online.hbs.edu/blog/post/types-of-statistical-bias

Logic

Population

Sample

Generalisation

But...

- The sample can’t be expected to be a perfect representation of the population
- However, if it's a reasonably large, well-selected sample, you can expect that the statistics you calculate from it are **fair estimates** of the population parameters
- Certain factors can influence the sampling and collection of data, causing the resulting statistic or model to be unrepresentative of the population
- These factors, or biases, are common and can result in unreliable analyses

Bias

Statistical bias is anything that leads to a systematic difference between the true parameters of a population and the statistics used to estimate those parameters

Bias refers to a flaw in the experiment design or data collection process, which generates results that don't accurately represent the population

TYPES OF STATISTICAL BIAS TO AVOID

1. Sampling Bias

- most data selection methods are not truly random…not every person has the same chance of being selected

2. Bias in Assignment

- In a well-designed experiment, where two or more groups are treated differently and then compared
- Every case in the sample should have an **equal likelihood of being assigned** to each experimental condition

3. Omitted Variables

- When analyzing trends in data, it's important to consider all variables, including those not accounted for in the experimental design. Just because two variables are correlated doesn't mean one caused the other—there could be additional variables at play

TYPES OF STATISTICAL BIAS TO AVOID

4. Self-Serving Bias

- One phenomenon to keep in mind when analyzing survey data is self-serving bias. When asked to self-report, people tend to downplay the qualities they perceive to be less **desirable** and overemphasize qualities they perceive to be desirable

5. Experimenter Expectations

- If researchers have pre-existing ideas about the results of a study, they can accidentally have an impact on the data, even if they're trying to remain objective. For example, interviewers or focus group facilitators can subtly influence participants through unconscious verbal or non-verbal cues

Academic Publication is a long process

Research	Publication
1. Ide 2. Reading 3. Developing RQ 4. Reading 5. Revising RQ 6. Proposal Development 7. Funding Research 8. Data Collection 9. Analysis 10. Preliminary Report **11. Seminar and Conference** 12. Final Report 13. Writing Paper 14. Copy Editing	1. Submit Journal 2. Review 3. Revise – Resubmit 4. Proofread 5. Publish

Arief Anshory Yusuf
(https://www.youtube.com/watch?v=nJAb4gK0iGU)

The Logic

Characteristics of Useful Research (Weiss, 1980)

- Research Quality
- Conformity to Expectation
- Action Oriented
- Challenge to Status Quo