

Scientific study of politics

Research Methods and Tools

2020

Scientific approach

- Students are interested in **politics**, not in **methods**...;
- **Aim**: to explain, why it is **scientific approach** to politics, what is more valuable, than knowledge generated on **empirical facts** only...
- **Science**: proceeding from **causal theories** to **scientific knowledge**;
- The key is thinking about the world in the language of **models**, where the **subject** of interest is defined by **variables** - which are **causally interconnected** - framed by **theory**;
- Even if we take this **course** just as a means of gaining **qualifications** ... - it is still a beneficial **way of thinking** about a world that will apply at any time...;
- What is the **scientific** way of **thinking** about the problem good for:
 - Helps to use research findings for the needs of **other courses**;
 - It helps to be a better **recipient** of information;
 - It is the first step on the way to become a **producer** of scientific knowledge.
- "Just the **Facts**" approach: the world is changing, the facts are getting old, theories allow us for a better understanding of the interactions - why changes occur and what the probable direction and impacts will be;
- **Questions**: *What? How? Why? (to describe; to understand; to explain).*

Looking for causal explanation

- **Critical thinking**: (how we know?)
 - We are always willing to take **new evidence** into account, change what we think - what we know is "true";
 - Balanced by vigilance and critical appraisal of new evidence;
- Like other scientists - political scientists are **developing** and **testing theories**;
 - **Theory**: a testable **presumption** about the **cause** of the phenomenon we are examining;
 - when the theory was created, we can translate it into one or more testable **hypotheses**;
- The **hypothesis** is **claim** derived from the theory, about the relationship we **expect to observe**;
 - **Null hypothesis**: also on theory-based... - what we expect to observe if our theory is incorrect;
- **Testing a hypothesis** is a process in which a scientist systematically collects **evidence** to **decide** whether the evidence supports a hypothesis or a null hypothesis;
 - if the hypothesis **survives testing**, we begin to gain **confidence** in **theory**...

...causal **theory**→
→ **hypothesis**→
→ **empirical test** →
→ **evaluation** of hypothesis→
→ evaluation of causal theory→
→ **scientific knowledge** ...

Science

- The core of the scientific process is **skepticism** (attack on theory, finding a new test that would question the theory, null hypothesis favored);
 - Vs. „**advocate**“ approach - the objective of producing the **desired result** - ignoring or discrediting evidence against him, supporting and highlighting the evidence for him;
 - **Political sciences** – a problem of **normative bias**;
- When is **theory** established – scientists build on that foundations...
- **Paradigm** (Kuhn) – scientific disciplines go through **knowledge accumulation cycles** based on a set of shared **assumptions** and universally accepted **theories** of how the world works;
 - When the paradigm is **accepted** - more **specific** questions arising from previous research are formulated - so-called **normal science**;
 - When a **major problem** is discovered -> **revolutionary** period (*Earth as the center of the Universe*) -> the increasing amount of evidence outweighs the consensus - new assumptions and theories -> **new paradigms** -> a new period of normal science (*liberalism vs. nationalism; ISI – ELG*).

Language of variables and causal relations

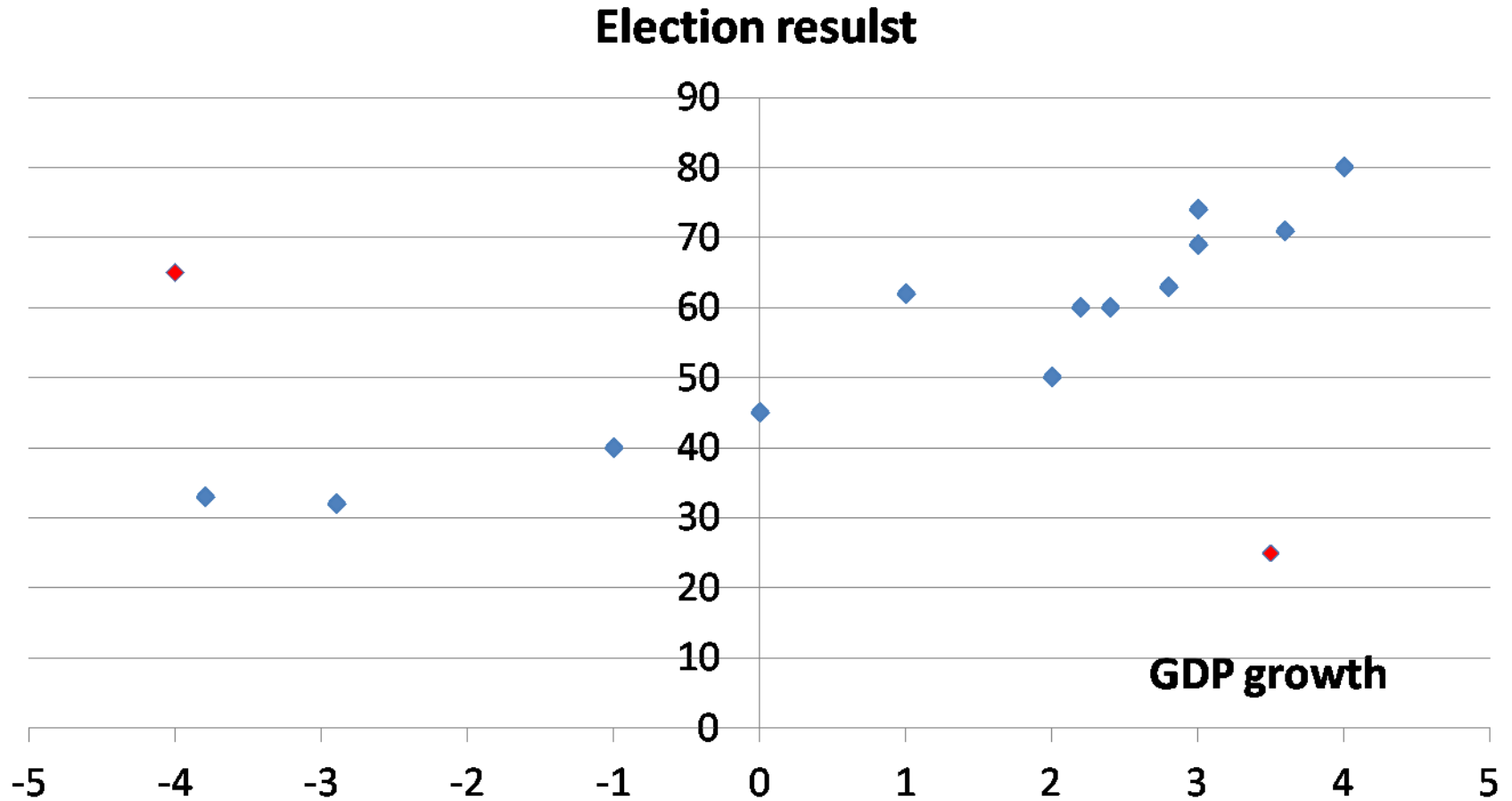
- **Variable:** label+ value;
 - *Example:* „incumbent president (US) has a better chance of **re-election** if the **economy** is doing well";
 - *Economy is **independent** variable (the cause) – election result is **dependent** variable (consequence);*
 - *Value of dependent var. depends (is changing with a change) on value of independent var.; IV -> DV*
- **Theory** (practically): it is the **assumption** of the **causes** of the phenomenon we are examining;
 - i.e. that the independent variable is **causally linked** to the dependent variable ... the **change** in independent var. causes the change of the dependent var.;
 - higher (lower) IV is the cause of a higher (lower) DV (positive direction / negative direction + the change is the key);
- **Causal explanation:** it corresponds (practically) to the question "**why** do you think DV is **causally linked** to the IV"?
 - if the answer is meaningful, it's worth it ... if it's (also) original it's great!
- **Example:** the **president** is responsible for the state of the **economy**, he has **EP tools**; **voters** have an intense **interest** in a well functioning economy (wellbeing) ... will appreciate the president for the **proper use** of EP tools, ... therefore the state of the economy is functionally linked (affects it.. causes the difference) with the **election** result – e.g. higher GDP growth is associated with higher vote gains;
- **Concept of IV** (state of economy) → *causal theory* → **concept of DV** (probability of being reelected)

operationalization phase
- **Measurable IV** (**GDP growth in%**) → hypothesis → **Measurable DV** (election result - number of **votes**).

Hypothesis testing

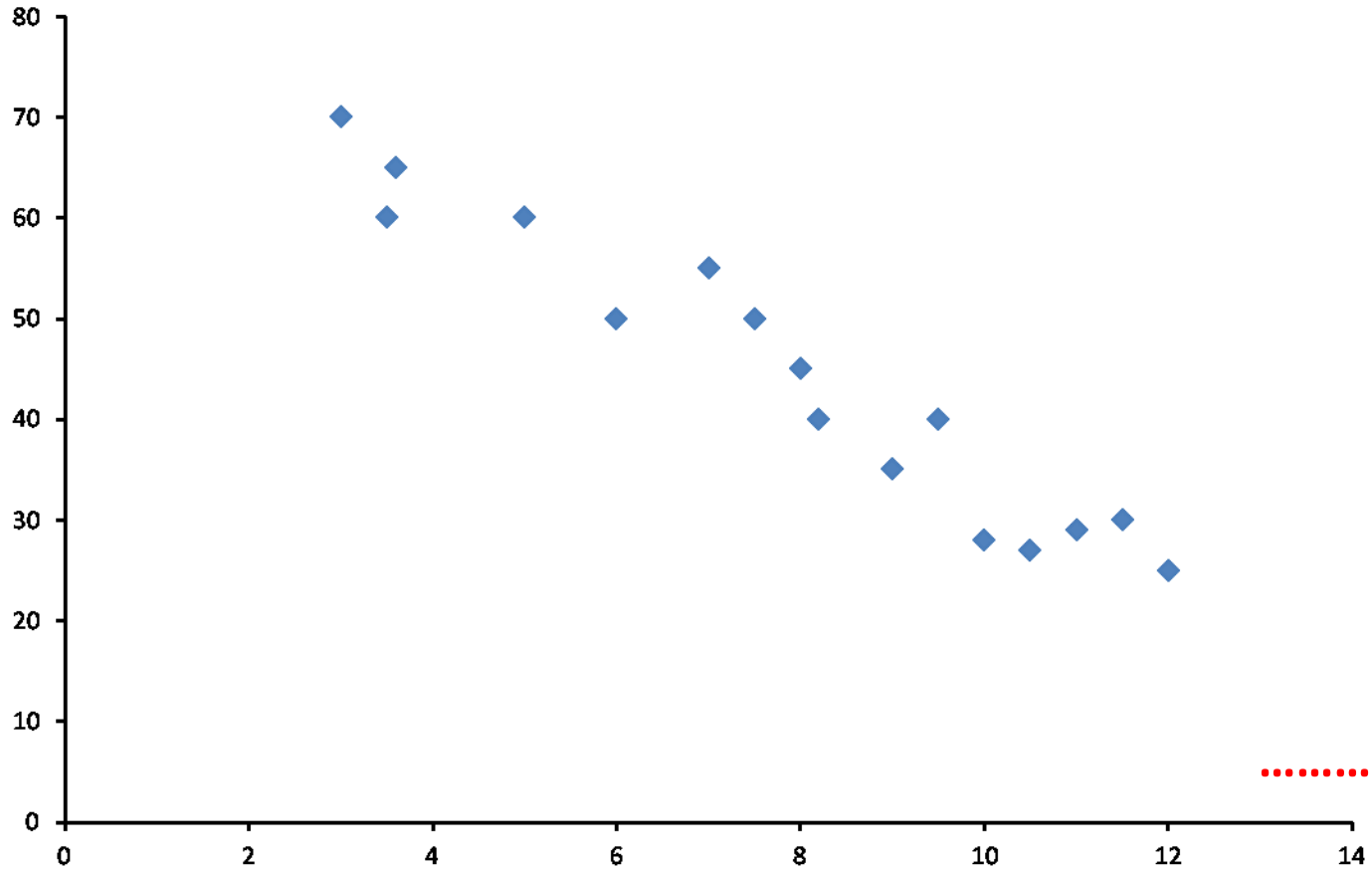
- We need **testable hypotheses** - from a general statement to a more specific statement about facts that we find in the real world;
 - E.g. inflation, unemployment, growth, trade balance (ECONOMY) / election result in percents of votes for candidate (ELECTION);
 - ... in some elections there is no incumbent president running (do we apply the same for president's party?); there can be strong third candidate (do we split the votes?);
- **Example: We put each elections into graph:**
 - *X axis: -5 to +5 percent GDP growth; Y axis: 0 to 100% percent votes;*
 - There will be a positive slope (higher -> higher); if we use e.g. ???, there will be a negative slope (higher -> lower) – this is determined by the operationalization;
- We can thus **collect data** from the world and see how they are **compatible** with our **theory** ... but we are far from being able to state **causality** - i.e. GDP growth is the cause of the result;
 - no social phenomenon can be explained by a single variable - if we come with another, we begin to think like scientists...;
 - we will make a graph for another and find out whether there is the same (stronger) correlation; then we examine the relationship between the two...
 - ... foreign policy intervention (war); extraordinary state of the global economy (crisis); big domestic affair; affiliation to particular political party; divided government (US)...

Impact of US economic condition on elections



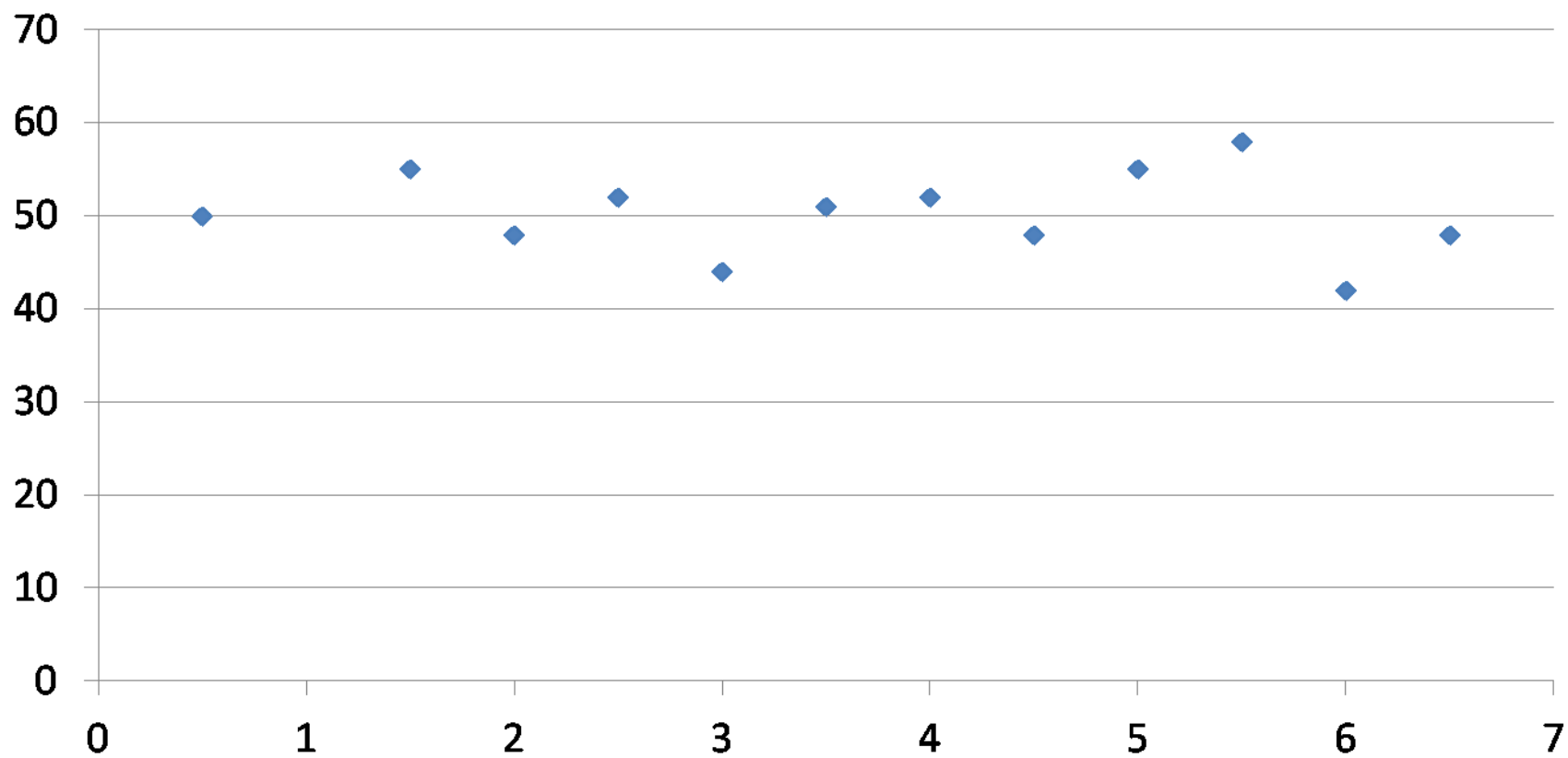
Election result depending on.....???

Election result in percents



.....???

Election result



How to construct a model

- **Model** - when we think about **phenomena** in terms of **dependent variables** and create **theories** about the **independent variables** that are influencing them, then we construct theoretical models;
 - It's the "**unrealistic**" character of model that makes it **practical** ... models are simplification ... vs.
 - **Excessive reduction** makes them **irrelevant** for understanding of the real world ...
- Hints:
 - Models we try always to build as **causal** (vs. correlation);
 - We should not be led by the **data** itself (testing the theories on the dates that led to their creation is problematic);
 - Evidence must be firmly based on **empirical** reality of the real world (vs. rationalist exercises);
 - To avoid **normativeness** (vs. neutrality);
 - Look for both: **universality** and **simplicity**;

Building a theory

- Identification of **interesting variation**;
 - **Cross-sectional**: same time, different place (cases);
 - **Time-series**: the same case, different time;
- Use of our **knowledge** of the problem - shift from a **specific** case to a more **general** theory:
 - September 11 -> change in support of the US President (what would make a smaller scale attack; what would do other types of incidents; would this happen in another country?); *1970 Mueller*: presidential popularity and international conflict...;
- Know local, think global;
 - Natural scientists doesn't have theory that can only be applied to [France](#) ...
- Explore **previous research**:
 - Which **other causes** are not included?
 - Can the theory be applied **elsewhere**?
 - What are the other **implications**?
 - How can theory work at another level of **aggregation** (micro-macro)?
- How do I know I have a **good theory**?
 - Is it **causal**? Can I **test** it on **data** I have not yet examined? Is it **generalizing**? Is it **simple**? Is it **new**? Is it **non-banal**?