

Searching for an Ecological Worldview in Europe

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Scientific Paradigms

- Scientific paradigms develop within scientific disciplines, focus on how some aspect of the world works, and influence scientific theory and research.
- But scientific paradigms may also have a broader influence on society in general, affecting how people view the world, their place in it, and themselves.

Social Paradigms or “Worldviews”

- Humans view the world through a set of taken-for-granted assumptions or “cultural lenses”, and we obtain this “worldview” via socialization into our cultures and societies. Such worldviews are influenced by science, as well as religion, education, family and other socio-cultural factors.
- In turn, worldviews can affect science by influencing the way in which scientists think and conduct their work and choose which topics to investigate.

Major Scientific Paradigm Shifts with Significant Societal Implications

- **Copernican Revolution** – Recognized that the sun and not the earth was the center of our solar system, and thus that the home of human beings (the Earth) was not the center of the “universe.”
- **Darwinian Revolution** – Challenged the notion that humans (*Homo sapiens*) were a totally unique species that shared nothing in common with other animals.

Major Scientific Paradigm Shifts with Significant Societal Implications

- **Freudian Revolution** – Challenged the notion that humans were fundamentally rational creatures.
- **Ecological Revolution?** (Rachel Carson, Barry Commoner, Paul Ehrlich, et al.) – Challenges the notion that humans are “exempt” from the ecological constraints that apply to all other species.

Core of an Ecological Paradigm

Viewing the world ecologically involves recognizing that modern human societies are ecosystem-dependent and thus rejecting the assumption that such societies are “exempt” from the forces of nature even with our advanced science and technology.

The Acceptance of Ecological Limits

“...it is abundantly clear that human activities...now match or even surpass natural processes as agents of change in the planetary environment.”

U.S. National Academy of Sciences,
1990

Clarification of an Ecological Paradigm

An ecological paradigm or worldview does **not** need to be based on a static “balance of nature” perspective. The crucial factor is **not** that humans are seen as disrupting the “natural state” of the environment. Rather, the core assumption of an ecological paradigm is the recognition that humans—despite our “exceptional” characteristics—are **not** “exempt” from the forces of nature.

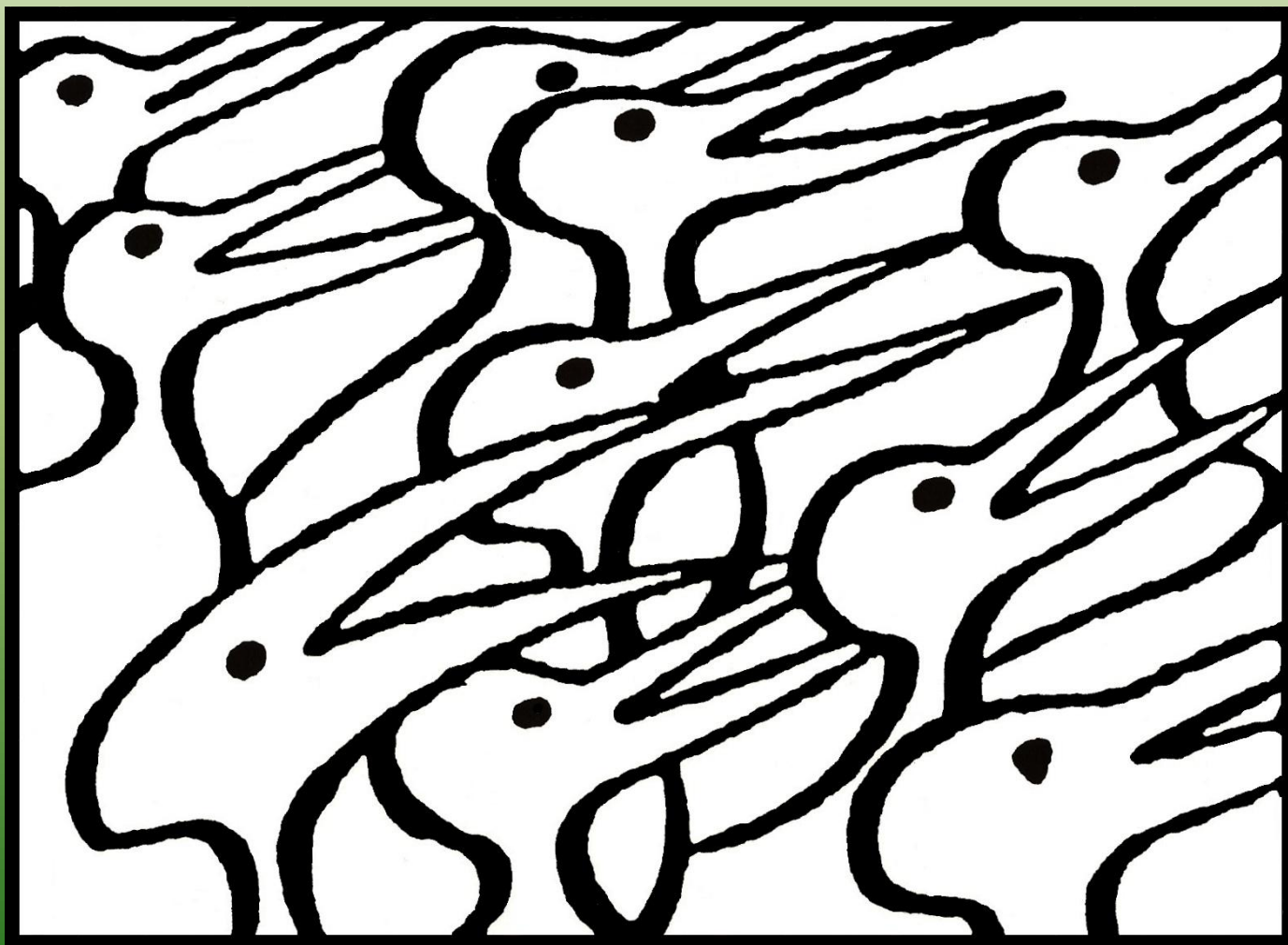
Exemptionalist vs. Ecological Paradigms

The human exemptionalism and ecological paradigms “entail competing views both of our species and of the global ecosystem:

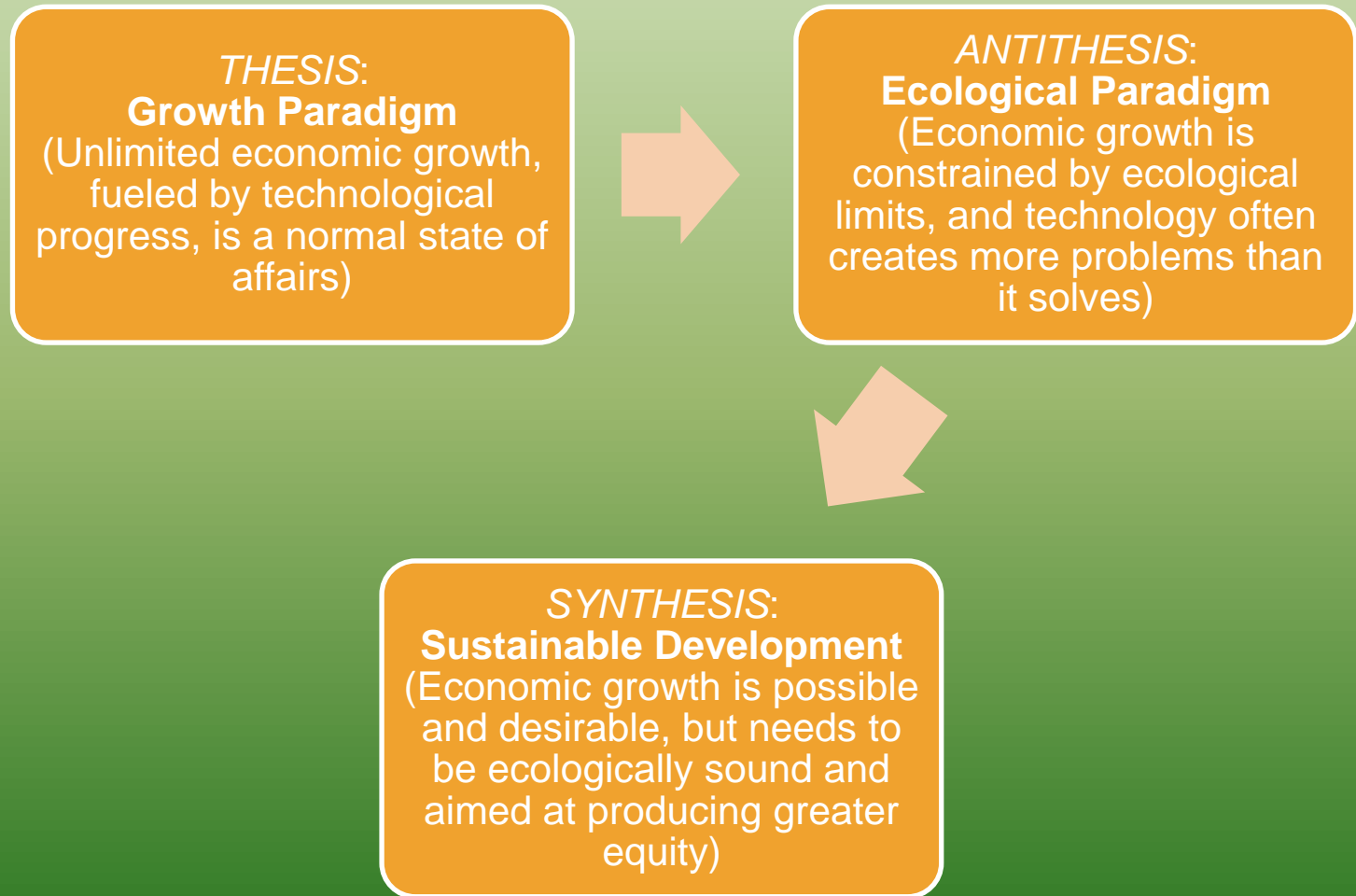
- adherents to the human exemptionalism paradigm tend to see the world as infinite and humans as essentially omnipotent,
- while adherents to the ecological paradigm tend to see the world as finite and humans as constrained by that finiteness.”

R. Dunlap, Comment on Paul Ehrlich-Julian Simon Debate, *Social Science Quarterly*, March, 1983





Sustainable Development as Potential Synthesis



Failed synthesis

- Not only has sustainable development been largely ignored by nations like the USA and Russia, but it has split into “weak” and “strong” sustainability.
- Weak emphasizes sustainable economic growth which strong emphasizes ecological sustainability, reflecting the old growth paradigm vs. ecological paradigm cleavage.

Labels For Competing Worldviews

Dominant Social Paradigm vs. New Environmental Paradigm

Technological vs. Ecological Worldviews

Technocentric vs. Ecocentric Worldviews

Frontier vs. Spaceship Worldviews

Cornucopian vs. Neo-Malthusian Worldviews

- The original 12-item New Environmental Paradigm (NEP) Scale included 12 items designed to measure 3 facets of an ecological paradigm/worldview: *limits to growth*, *balance of nature* and *rejection of anthropocentrism* (humans over nature). Data came from a 1976 survey of residents of the State of Washington.
- Dunlap, Riley E. and Kent D. Van Liere. 1978. “The ‘New Environmental Paradigm’: A Proposed Measuring Instrument and Preliminary Results.” *Journal of Environmental Education* 9 (4):10-19.

- A revised “New *Ecological* Paradigm Scale” included 15 items designed to measure 5 facets: *limits to growth, balance of nature, rejection of anthropocentrism, likelihood of eco-catastrophes and human exemptionalism* (humans are exempt from the constraints of nature). Data came from a 1990 survey of residents of the State of Washington.
- Dunlap, Riley E., Kent D. Van Liere, Angela G. Mertig and Robert Emmet Jones. 2000. “Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale.” *Journal of Social Issues* 56:425-442.

- The two versions of the NEP Scale have become the most widely used measures of ecological consciousness in the world, employed in hundreds of studies in dozens of nations.
- Dunlap, Riley E. 2008. “The NEP Scale: From Marginality to Worldwide Use.” *Journal of Environmental Education* 40 (1):3-18. (Provides personal account of development, revision, use and criticisms of the NEP Scale.)
- Also see meta-analysis of international usages here:
Hawcroft, Lucy J. and Taciano L. Milfont, “The Use (and Abuse) of the New Environmental Paradigm Scale Over the Last 30 Years: A Meta-Analysis.” *Journal of Environmental Psychology* 30 (2010):143-158.

A short, 6-item version was used in the 2008/2009 EVS Survey

1. We are approaching the limit of the number of people the earth can support. (limits to growth) PRO-NEP
2. When humans interfere with nature it often produces disastrous consequences. (balance of nature) PRO-NEP
3. Human ingenuity will insure that the earth remains fit to live in (human exemptionalism) ANTI-NEP
4. The balance of nature is strong enough to cope with the impacts of modern industrial nations (balance of nature) ANTI-NEP
5. Humans were meant to rule over the rest of nature (anthropocentrism) ANTI-NEP
6. If things continue on their present course, we will soon experience a major ecological catastrophe (eco-catastrophe) PRO-NEP

For each: Strongly Agree, Agree, Disagree or Strongly Disagree.

Scored as 4 = Pro-NEP to 1 = Anti-NEP, so total scores can range from 6 to 24.

European Values Study: A Survey Research Program

- The European Values Study is a large-scale, cross-national, and longitudinal survey research program on basic human values.
- Every nine years (1981, 1990, 1999, 2008) the survey is repeated in an increasing number of countries.
- In 2008/09 (the fourth wave) about 70,000 people throughout Europe have been interviewed.
- Using representative samples, 47 European countries* have been covered: from Iceland to Azerbaijan and from Russia to Portugal.

* In this particular case, Sweden had to be deleted because

Scores on NEP items in pooled sample and in Portugal

NEP Items (Neutral = 2,5)	Mean Pooled sample	Mean Portugal
We are approaching the limit of the number of people the earth can support	2,69	2,59
When humans interfere with nature it often produces disastrous consequences	3,19	3,27
Human ingenuity will insure that the earth remains fit to live in (reversed)	2,34	2,66
The balance of nature is strong enough to cope with the impacts of modern industrial nations (reversed)	2,78	2,95
Humans were meant to rule over the rest of nature (reversed)	2,81	2,90
If things continue on their present course, we will soon experience a major ecological catastrophe	3,12	3,15
Total Score (Neutral = 15)	16,91	17,5

Examining the appropriateness of combining the 6 items into a scale

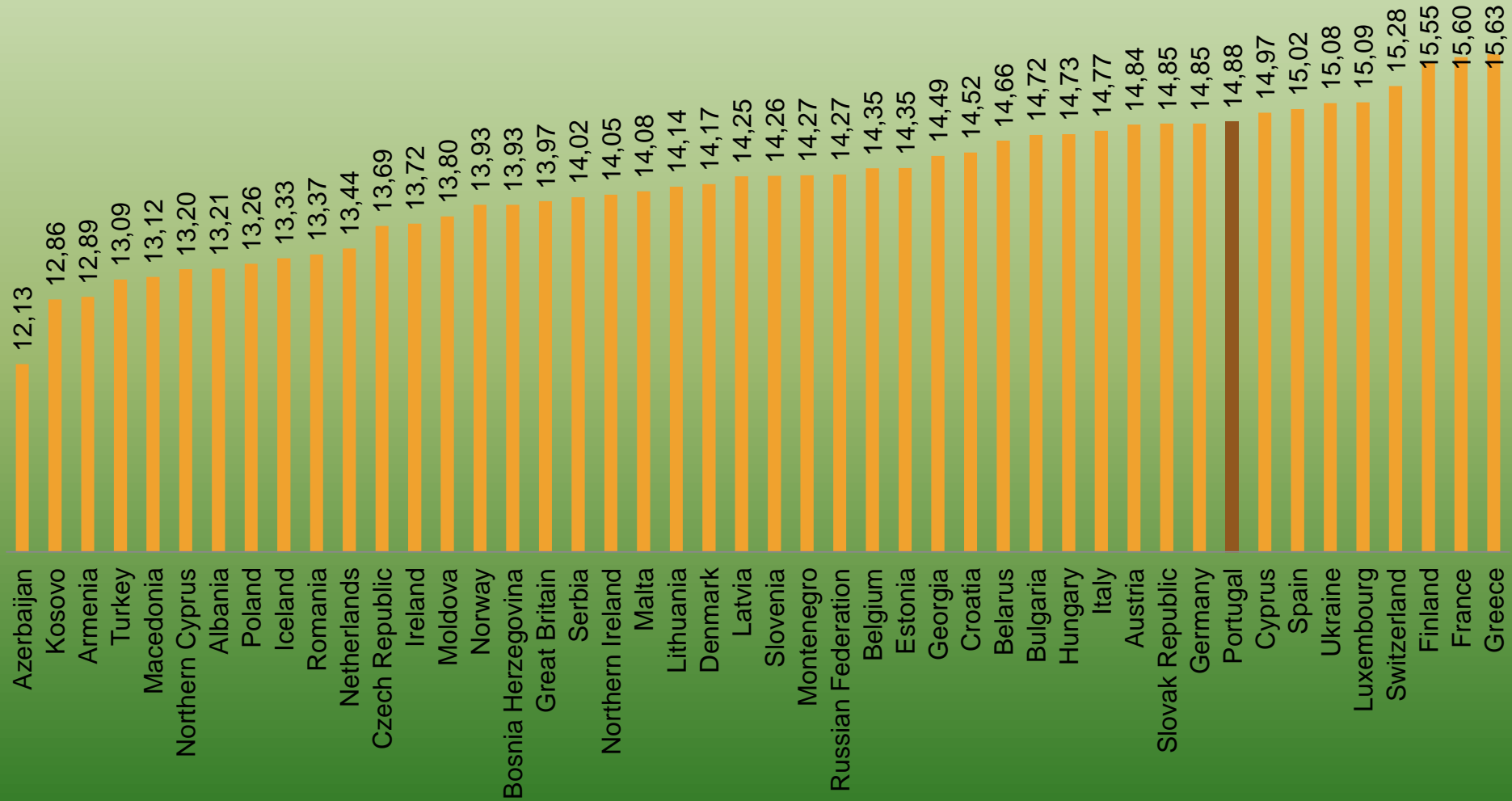
Correlation between responses to each item and the sum of responses to remaining five items	Item-Total Correlations
We are approaching the limit of the number of people the earth can support	0,16
When humans interfere with nature it often produces disastrous consequences	0,33
Human ingenuity will insure that the earth remains fit to live in (reversed)	0,28
The balance of nature is strong enough to cope with the impacts of modern industrial nations (reversed)	0,42
Humans were meant to rule over the rest of nature (reversed)	0,31
If things continue on their present course, we will soon experience a major ecological catastrophe	0,33

6 Items - $\alpha = 0,562$ | 5 Items - $\alpha = 0,578$

Preliminary Analyses

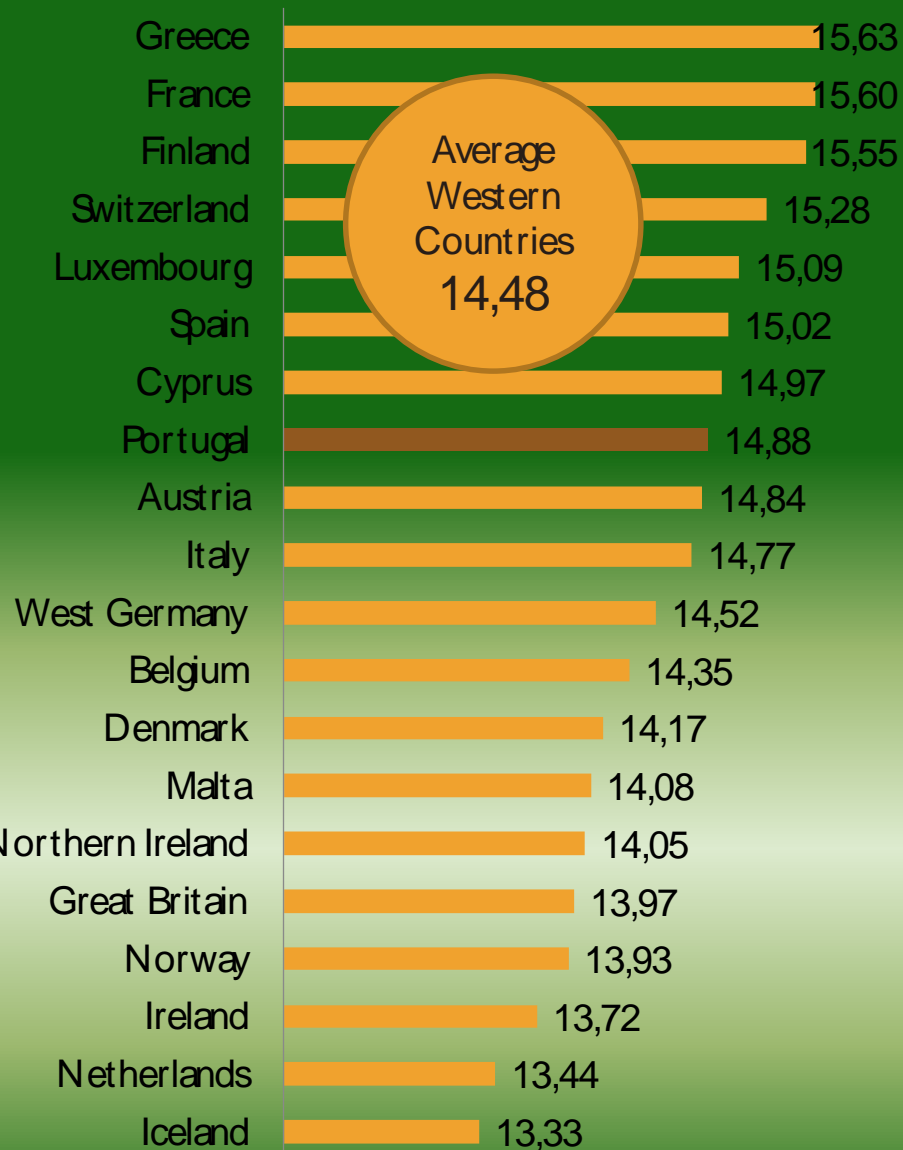
- We will briefly present preliminary results from two types of analyses:
- *National-level*, where each nation is assigned an NEP score based on the average of all respondents' scores within that nation
- *Individual-level*, where we examine the variation in individuals' NEP scores by selected personal characteristics, using the “pooled sample” of all EVS respondents

Average NEP Score (5 items) across all nations

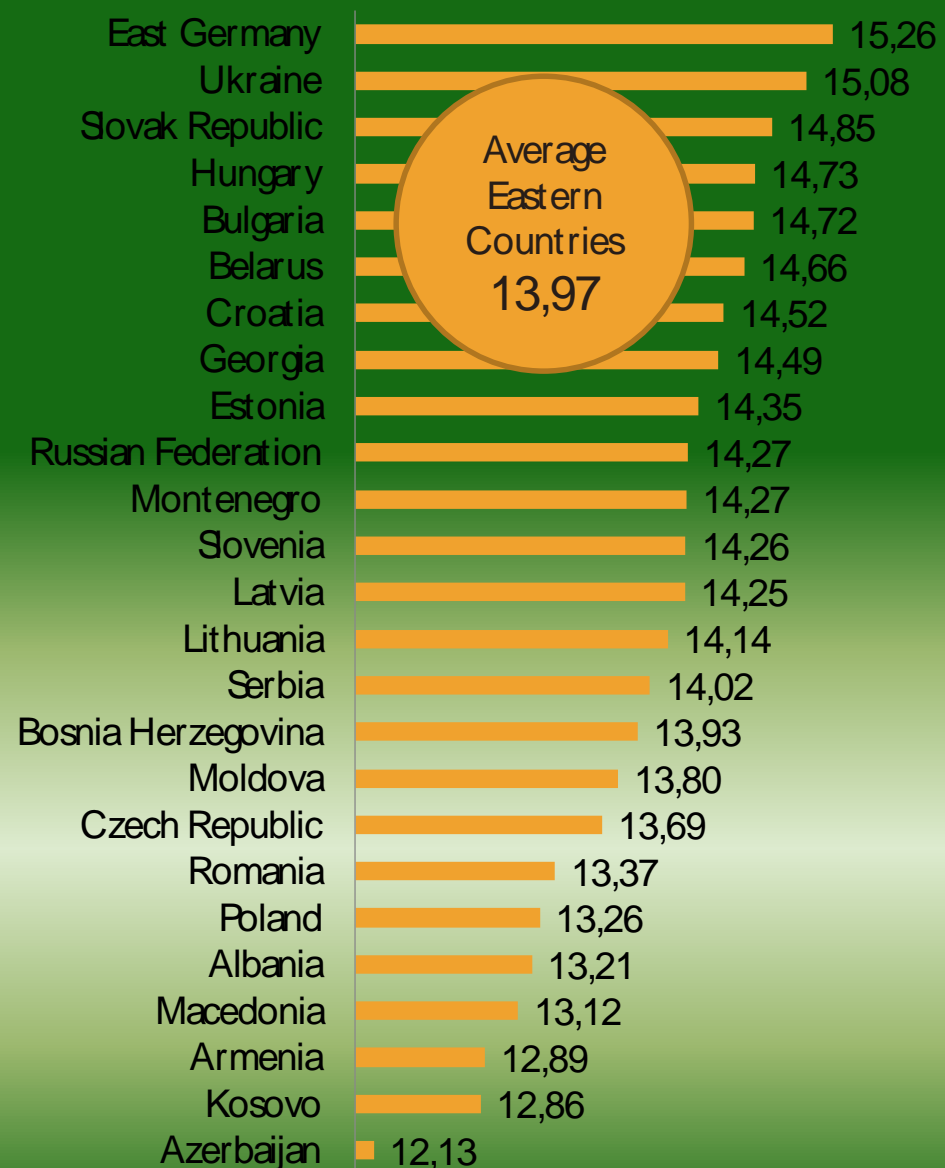


NEP Score across all nations, and by East/ West

Western Countries



Ex-East Block

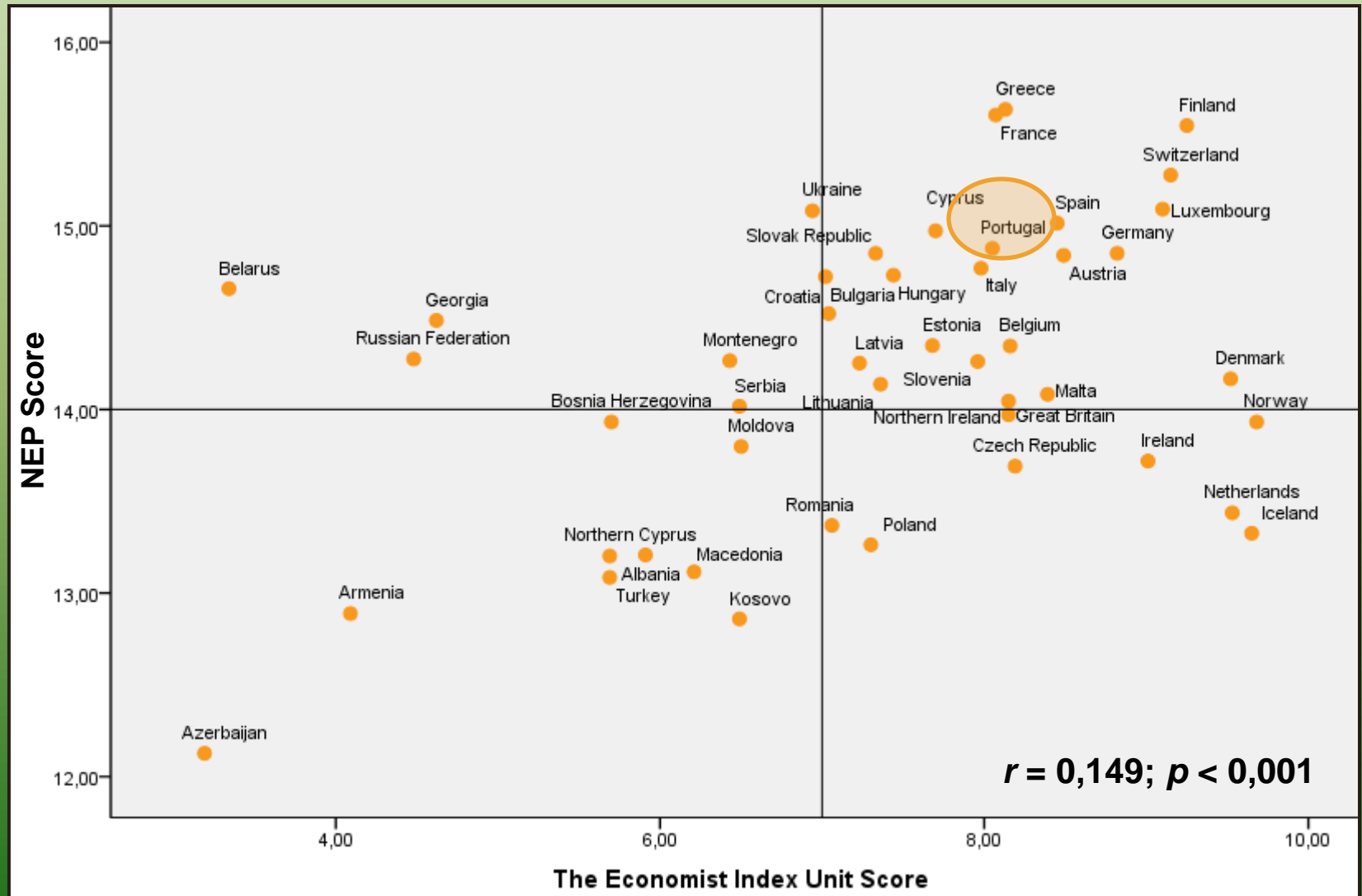


The Economist Intelligence's Unit Index of Democracy (National rankings and correlation with NEP Score)

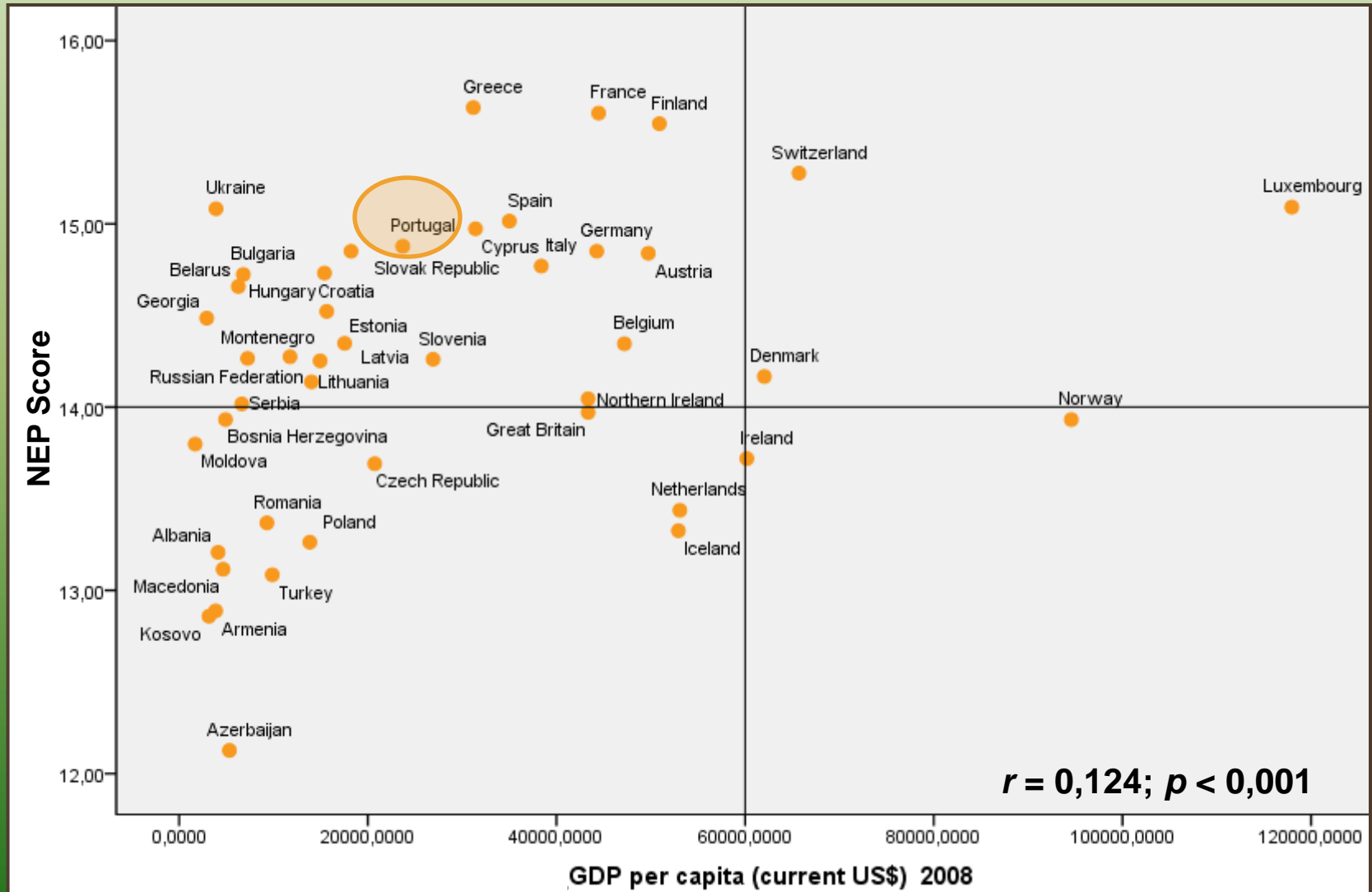
Country	Rank	Score	Level	
Full Democracies				
Sweden	1	9.88	<div>$r = 0,16;$ $p < 0,001$</div>	
Norway	2	9.68		
Iceland	3	9.65		
Netherlands	4	9.53		
Denmark	5	9.52		
Finland	6	9.25		
Switzerland	8	9.15		
Luxembourg	9	9.10		
Ireland	12	9.01		
Germany	13	8.82		
Austria	14	8.49		
Spain	15	8.45		
Malta	16	8.39		
Czech Republic	19	8.19		
Belgium	20	8.16		
Great Britain (UK)	21	8.15		
Northern Ireland (UK)	21	8.15		
Greece	22	8.13		
France	24	8.07		
Portugal	25	8.05		
Italy	29	7.98		
Slovenia	30	7.96		
Flawed Democracy				
Cyprus	36	7.70		
Estonia	37	7.68		
Hungary	40	7.44		
Lithuania	42	7.36		
Slovakia	44	7.33		
Poland	45	7.30		
Latvia	46	7.23		
Romania	50	7.06		
Croatia	51	7.04		
Bulgaria	52	7.02		
Ukraine	53	6.94		
Moldova	62	6.50		
Serbia	63	6.49		
Montenegro	65	6.43		
Macedonia	72	6.21		
Hybrid Regimes				
Albania	81	5.91		
Bosnia Herzegovina	86	5.70		
Turkey	87	5.69		
Georgia	104	4.62		
Russia	107	4.48		
Armenia	113	4.09		
Authoritarian Regimes				
Belarus	132	3.34		
Azerbaijan	135	3.19		

$r = 0,16; p < 0,001$

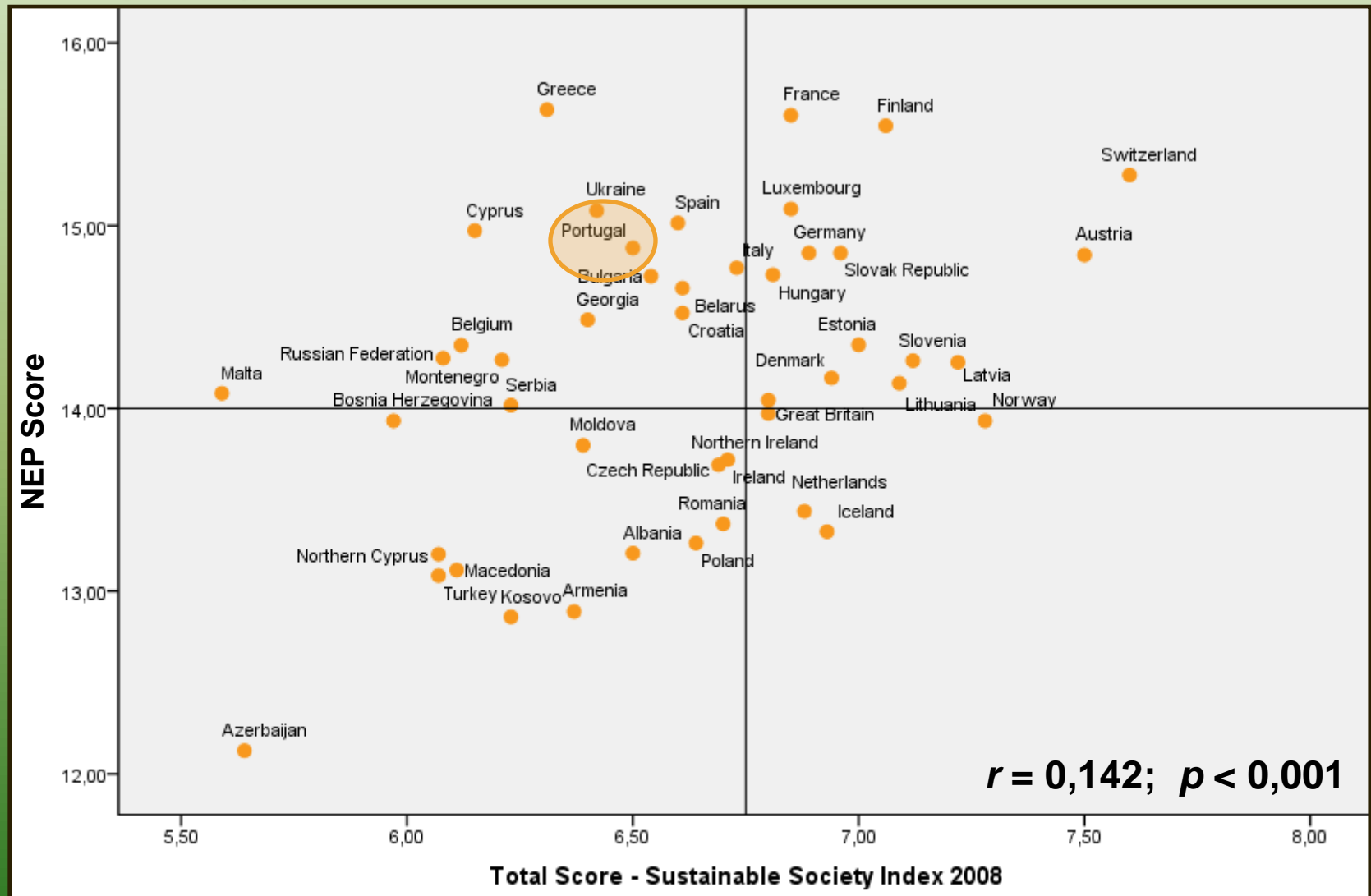
Correlation of NEP Score with “The Economist Intelligence’s Unit of Democracy Index”



Correlation of NEP Score with National GDP/cap

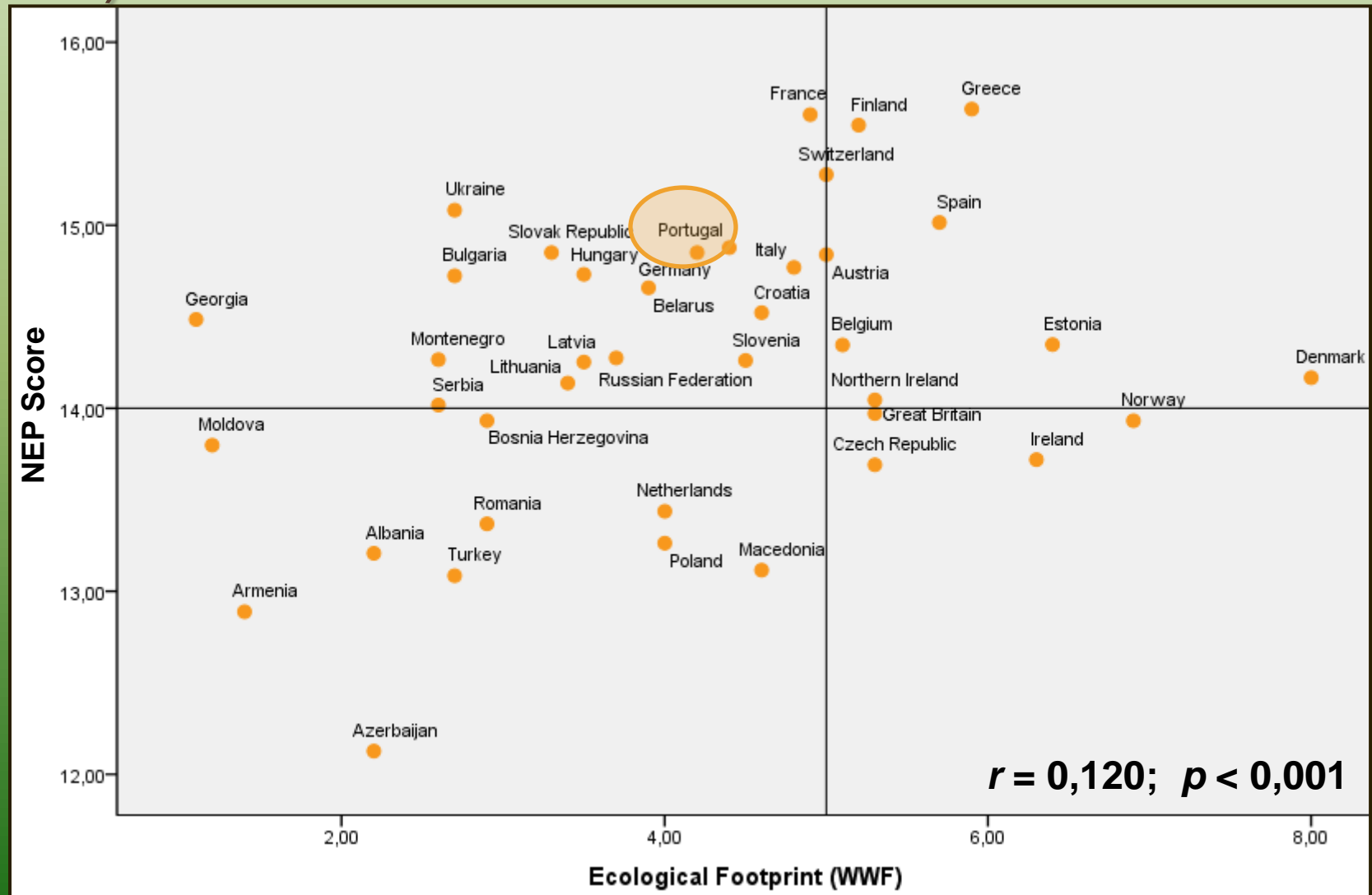


Correlation of NEP Score with “Sustainable Society Index” (SSI) - 2008

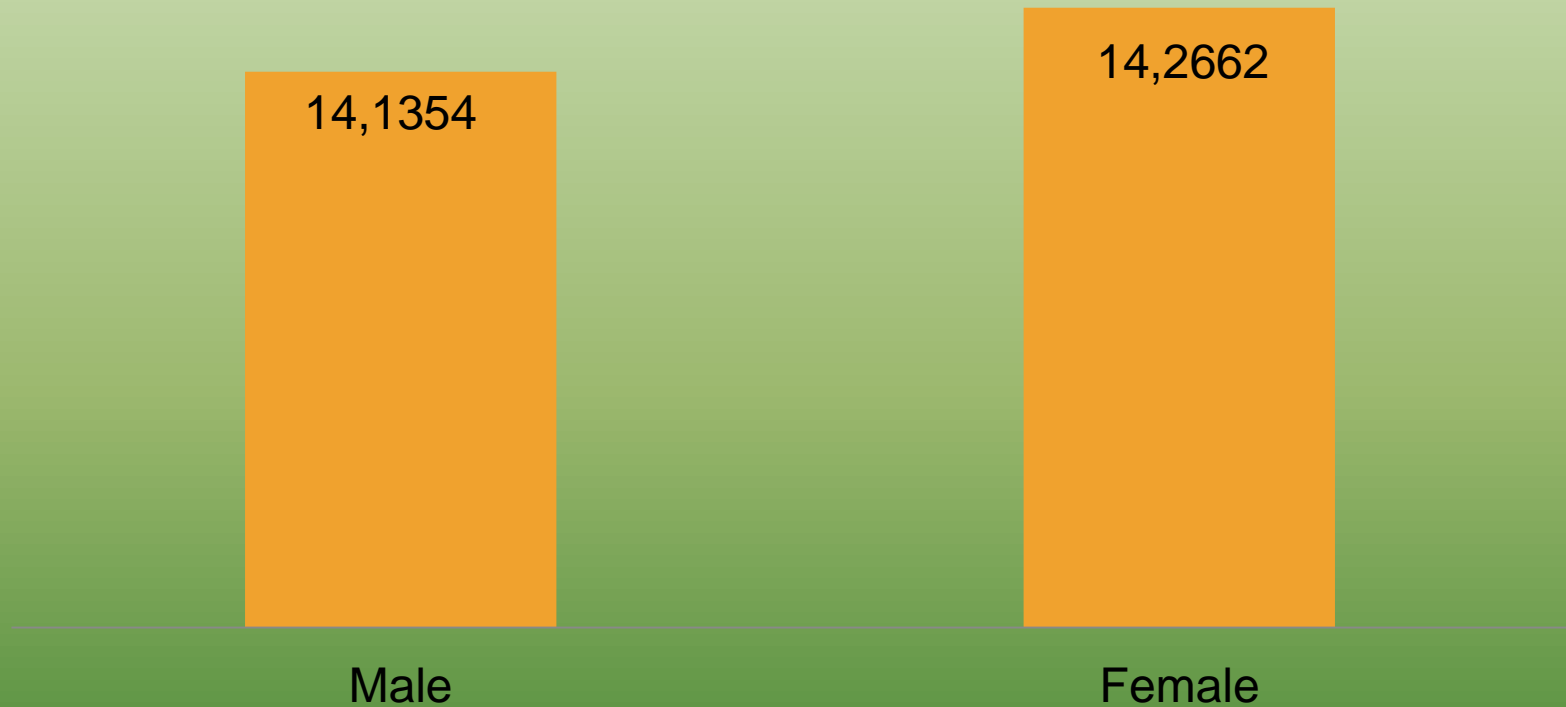


The SSI has been published for the first time in 2006 by *Sustainable Society Foundation* and is updated every two years.

Correlation of NEP Score with National “Ecological Footprint” (source: World Wildlife Fund)

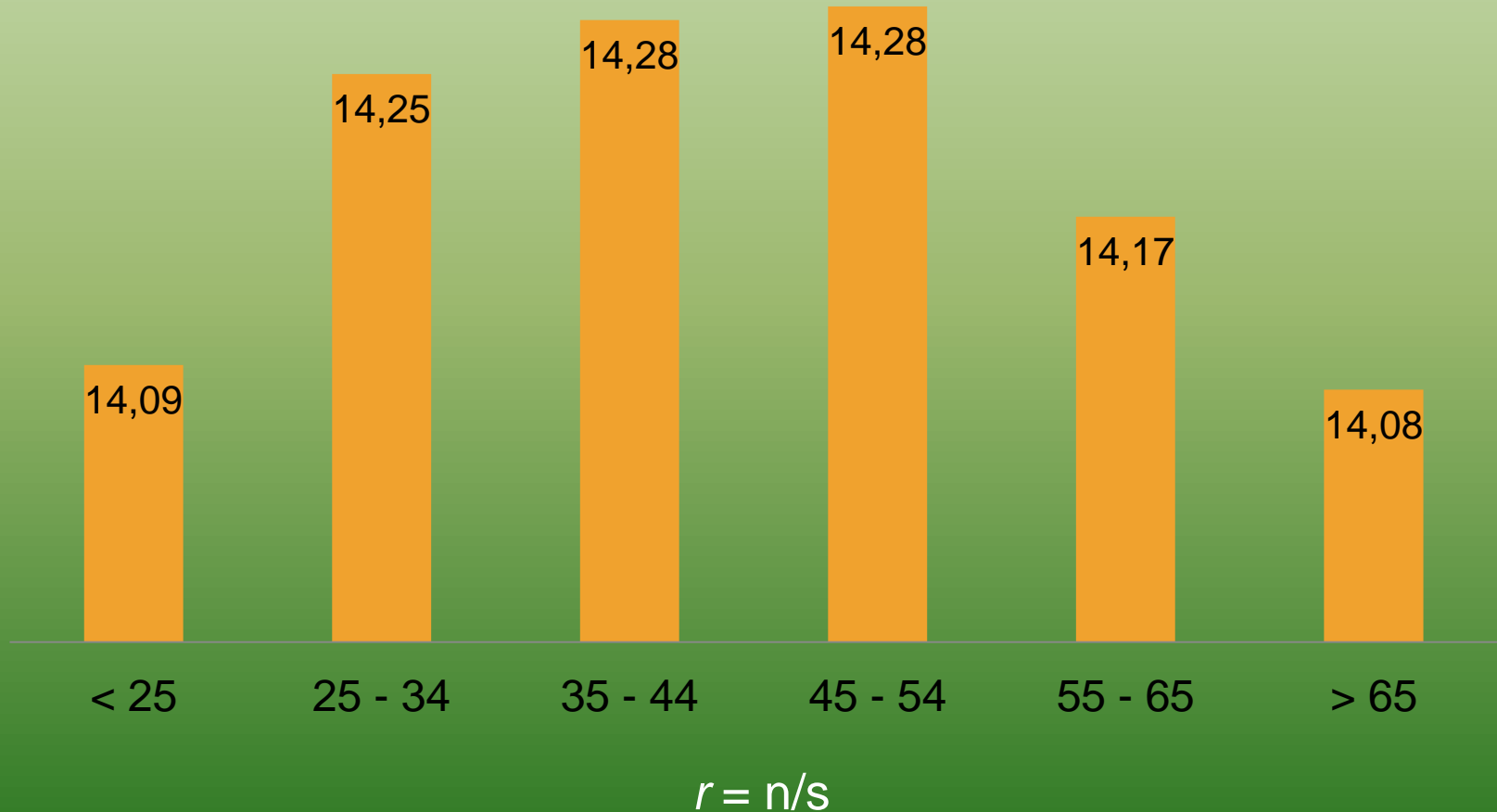


NEP score by gender of respondent (pooled sample)

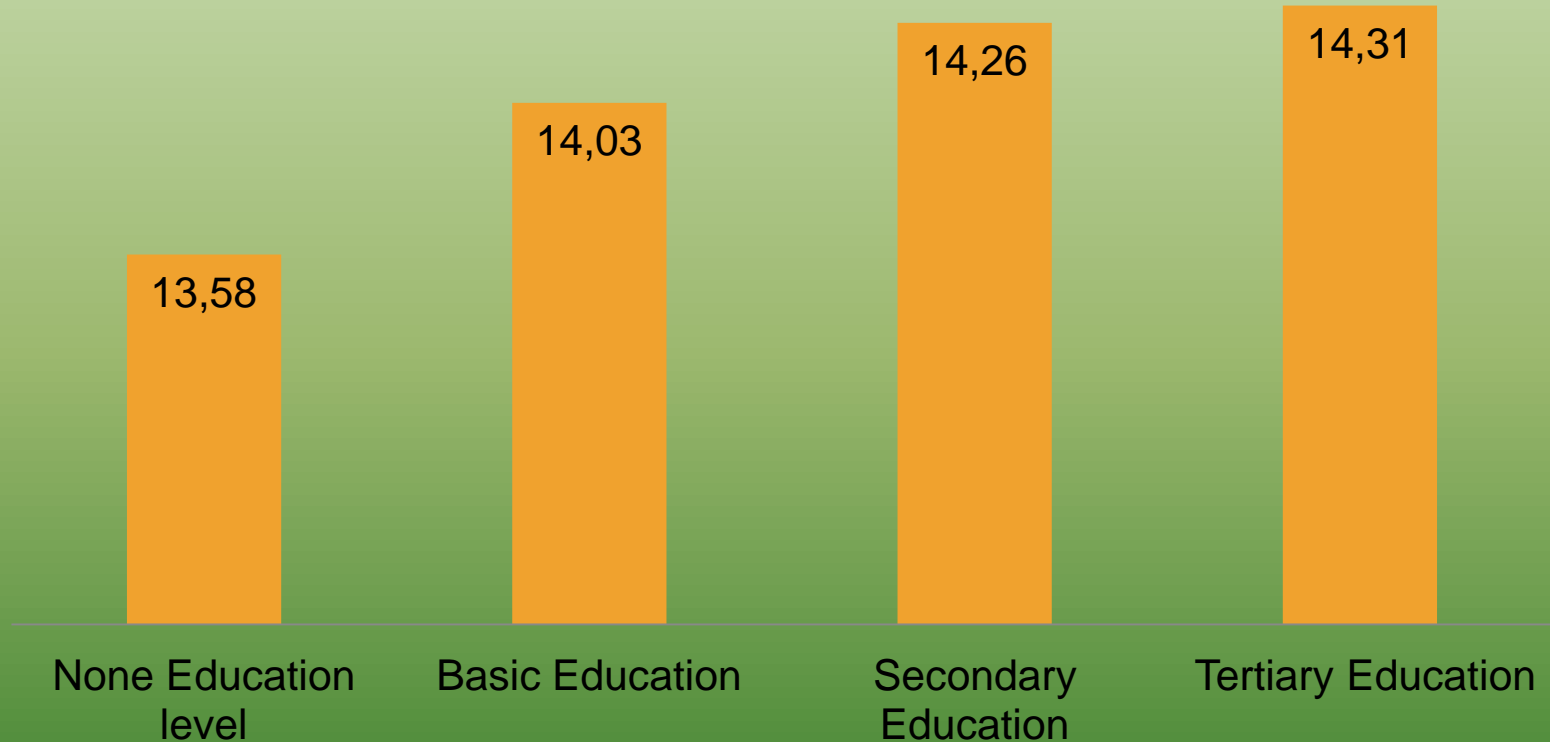


$r = 0,026; p < 0,001$

NEP score by age of respondents (pooled sample)

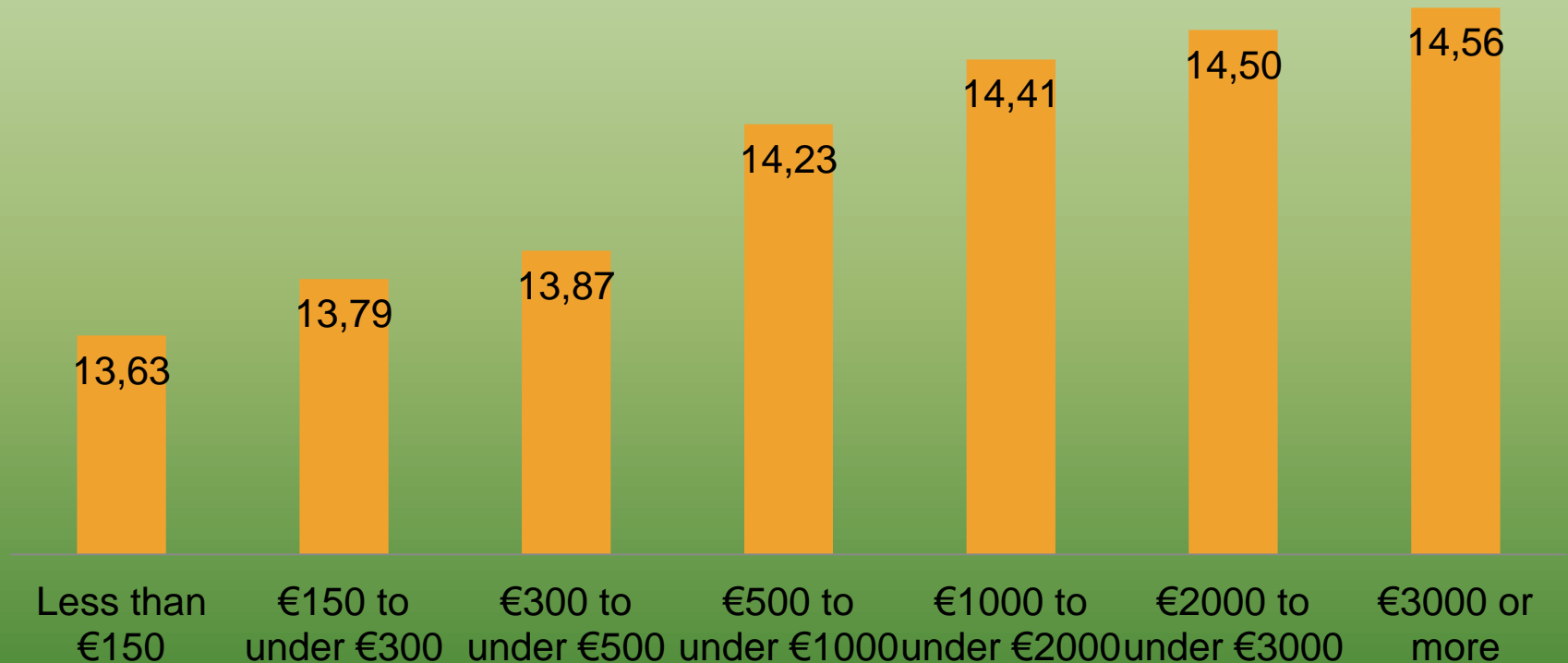


NEP score by educational level (pooled sample)



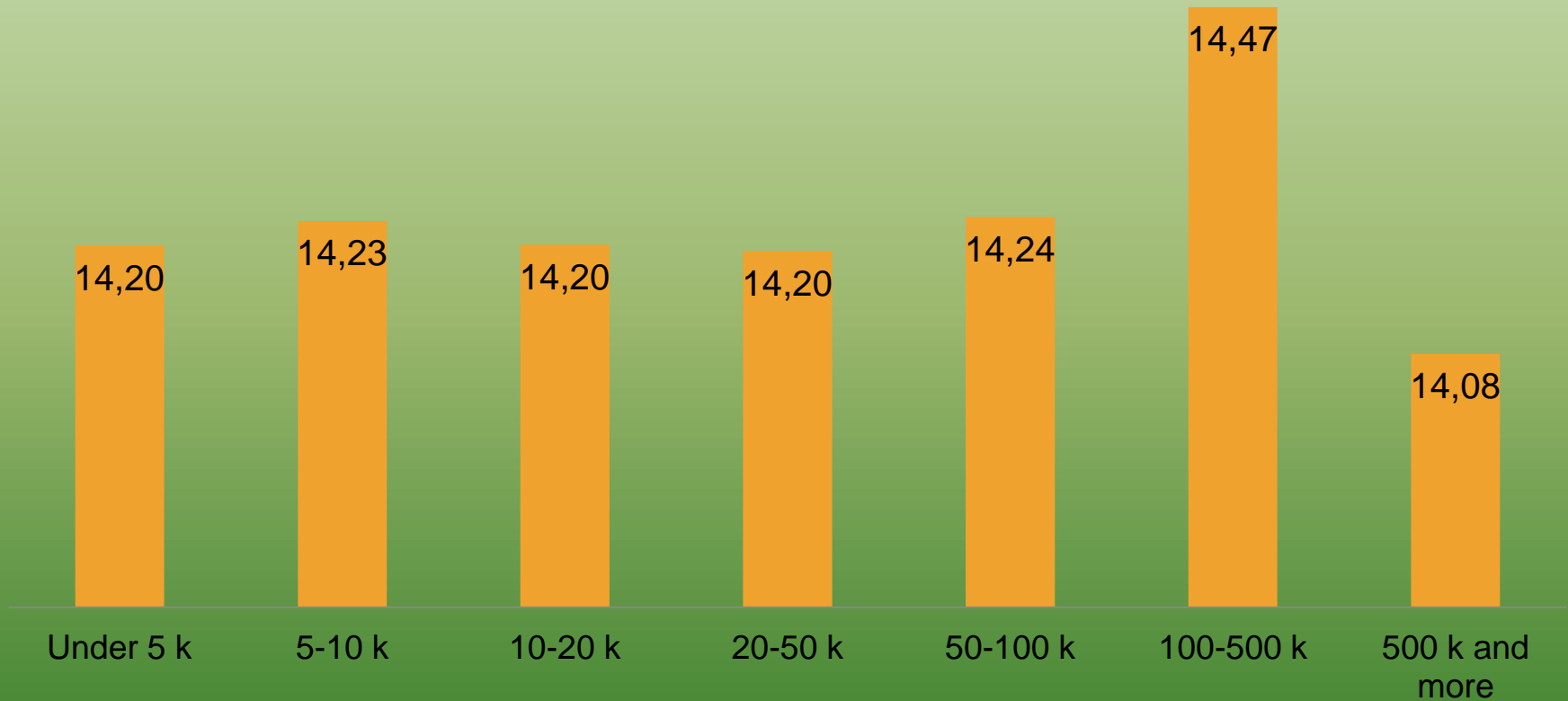
$r = 0,056; p < 0,001$

NEP score by monthly household income (pooled sample)



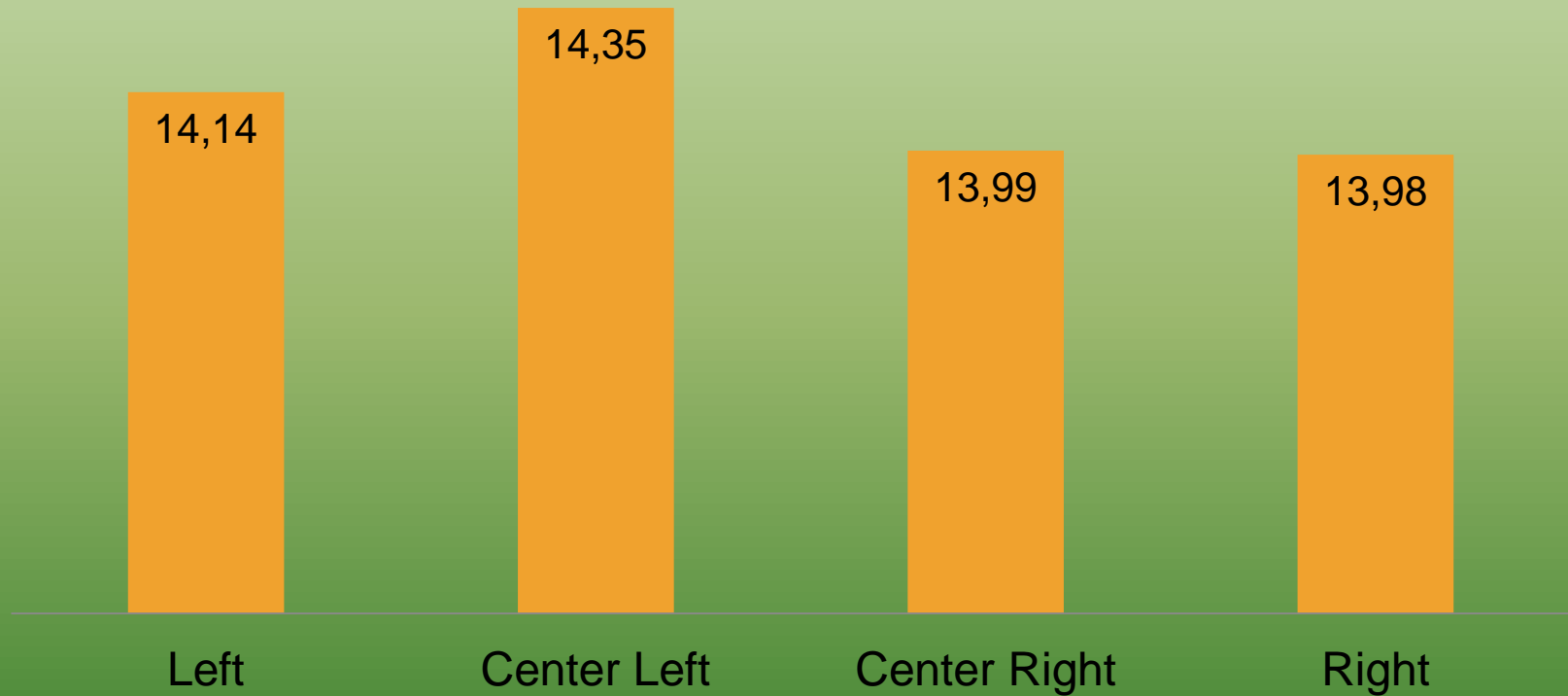
$r = 0,130; p < 0,001$

NEP score by size of town where interview was conducted (pooled sample)



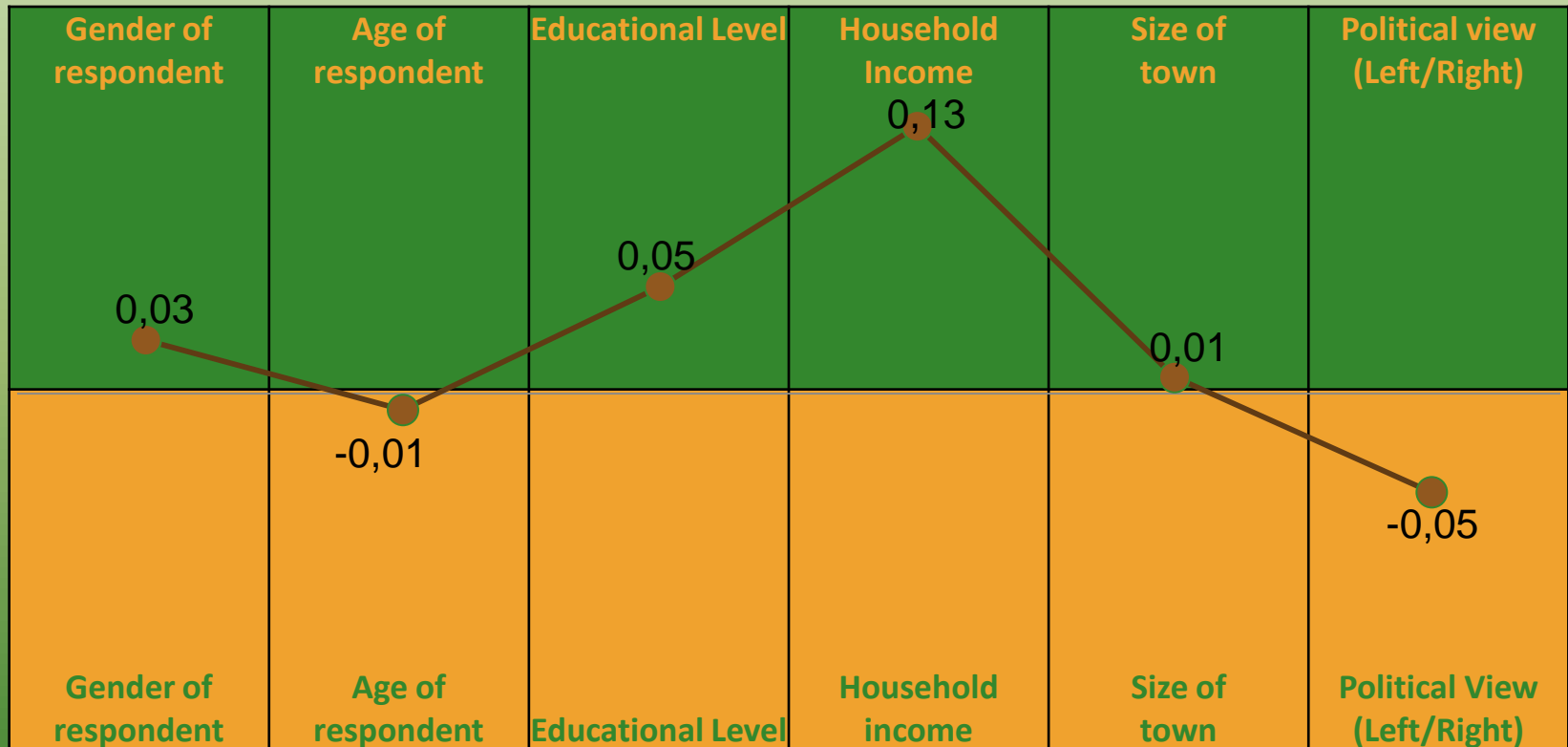
$$r = n/s$$

NEP Score by Political Left-Right Political Orientation, pooled sample



$r = 0,048; p < 0,001$

Correlations between respondent characteristics and NEP Score (pooled sample)



Future steps

- Examine a variety of other individual characteristics like attitudes and values
- Examine individual characteristics separately for East and West and within each nation
- Use multi-level models that allow one to examine the effects of region (East-West, Baltic vs. Nordic, etc.) or nations and individual characteristics simultaneously