



Investigating Views of Naturalness Across Europe

STSM to Aalto University

Views of Naturalness

People spend 80-85% of their time indoors and our environment is thought to impact our health in many ways.



Views of Naturalness



There are multiple building design paradigms that emphasize bringing nature indoors, or increasing occupant interaction with nature.

Views of Naturalness



To successfully integrate nature into the built environment, we must understand what building occupants consider to be natural.

Views of Naturalness

We asked people to rate the naturalness of 22 building materials 3 ways:

- Natural vs. Not natural
- 7 point scale
- Ordered ranking



Views of Naturalness

Students, faculty and staff at Aalto University were surveyed, during the STSM.

The study was also conducted in Oslo, Norway; Koper, Slovenia and Ljubljana, Slovenia.

Views of Naturalness



Views of Naturalness

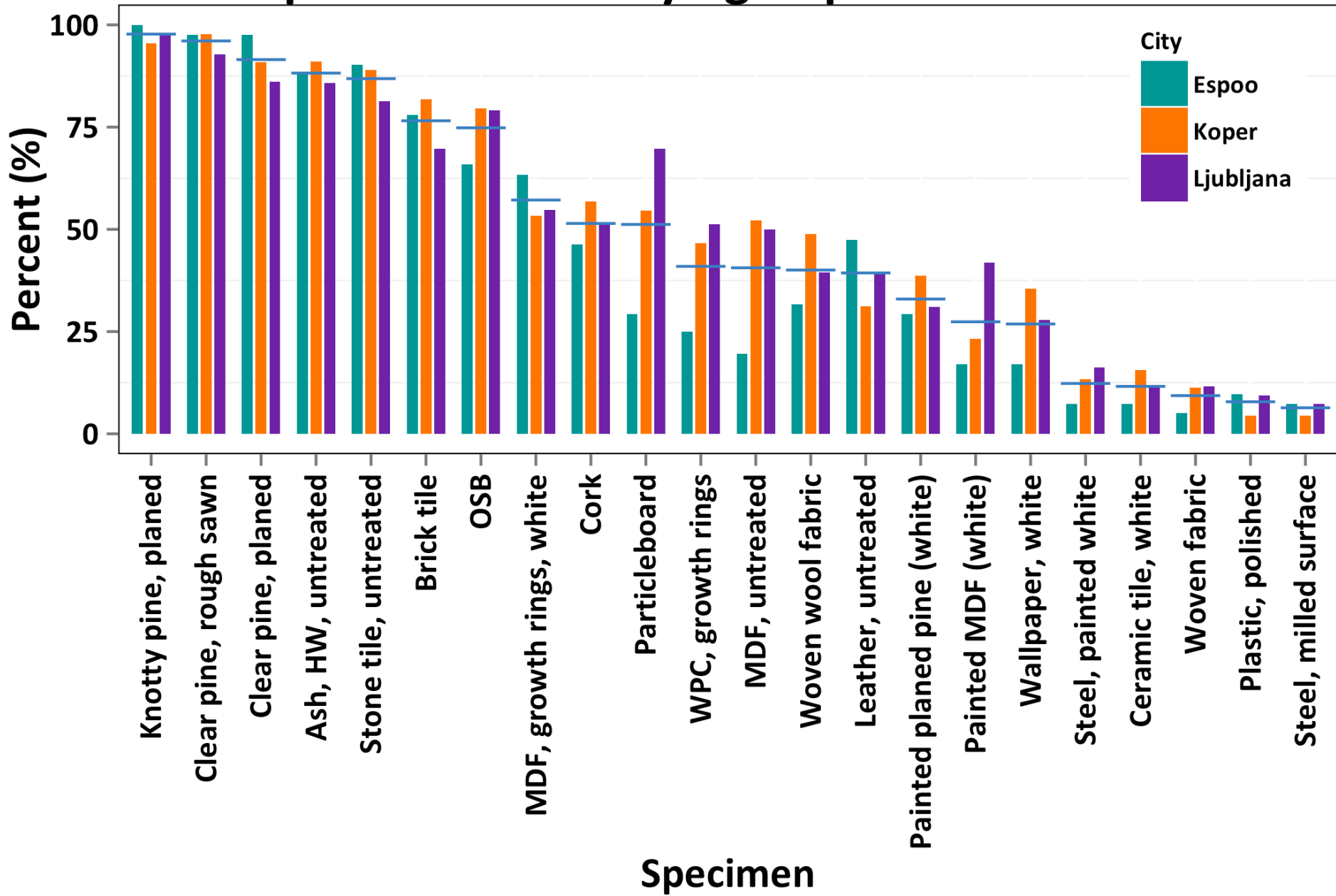
Oriented Strand Board
Planed Pine, with knots
Particleboard
Cork
Medium Density Fibreboard (painted white)
Brick
Ceramic tile
Wood fabric
Wood Plastic Composite, imitated growth rings
Rough Pine, no knots

MDF, painted white, imitated growth rings
Planed pine, clear of knots
Steel, milled surface
Wool fabric
Stone tile
Ash heartwood, planed
Polished plastic
MDF, plain
Steel (white)
Wallpaper, white
Untreated leather

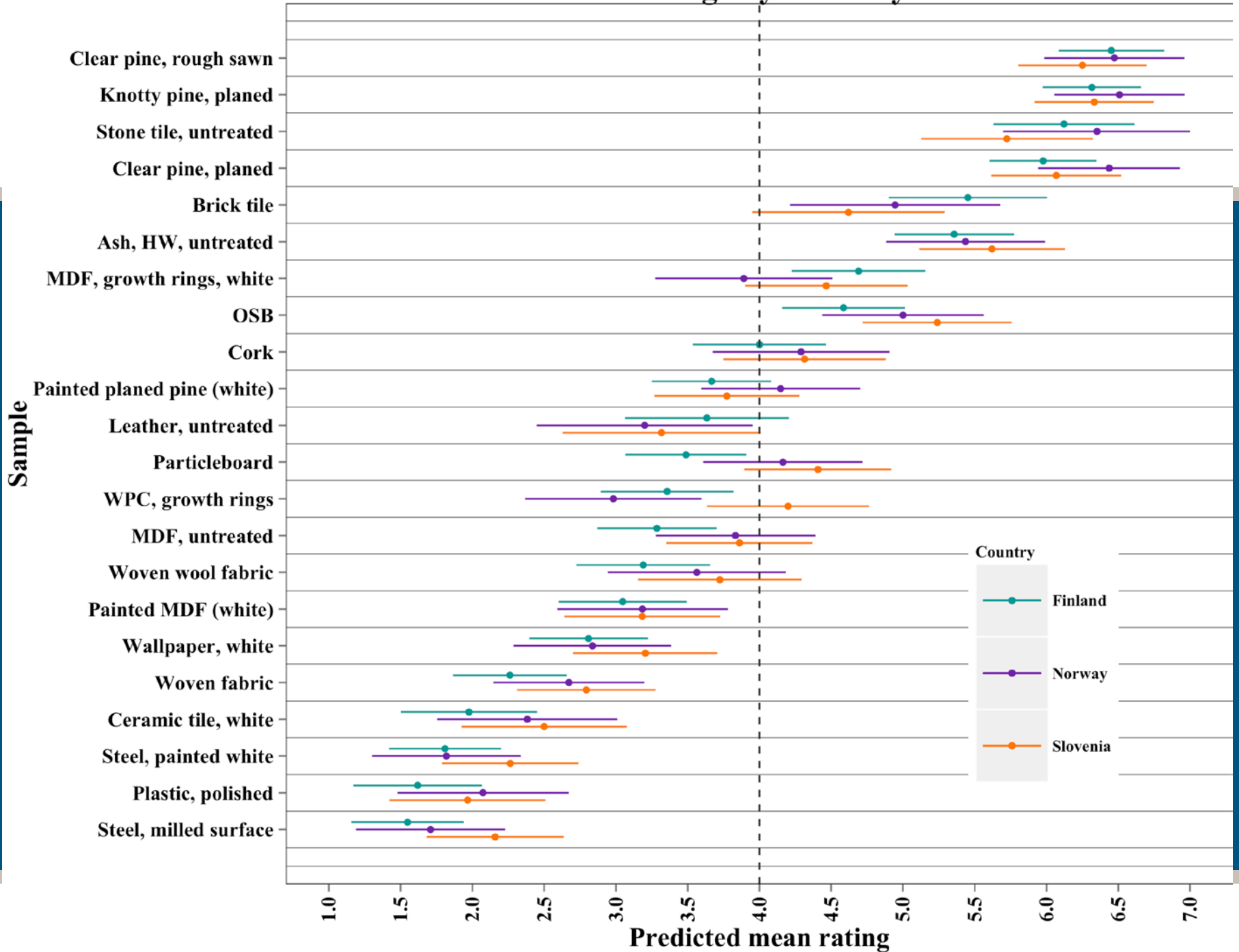
Views of Naturalness

Age group	Finland	Norway	Slovenia			Total
	Espoo	Oslo	Koper	Ljubljana	Combined	
15-25	18	32	22	35	57	107
26-35	16	18	12	4	16	50
36-45	2	4	5	2	7	13
46+	3	2	1	-	1	6
No response	3	-	3	5	8	11
Sex						
Female	16	37	23	34	57	110
Male	24	19	17	9	26	69
No response	2	-	3	3	6	8
Total responses	42	56	43	45	88	186

Respondents identifying a specimen as natural



Predicted mean ratings by Country with 95% CI's



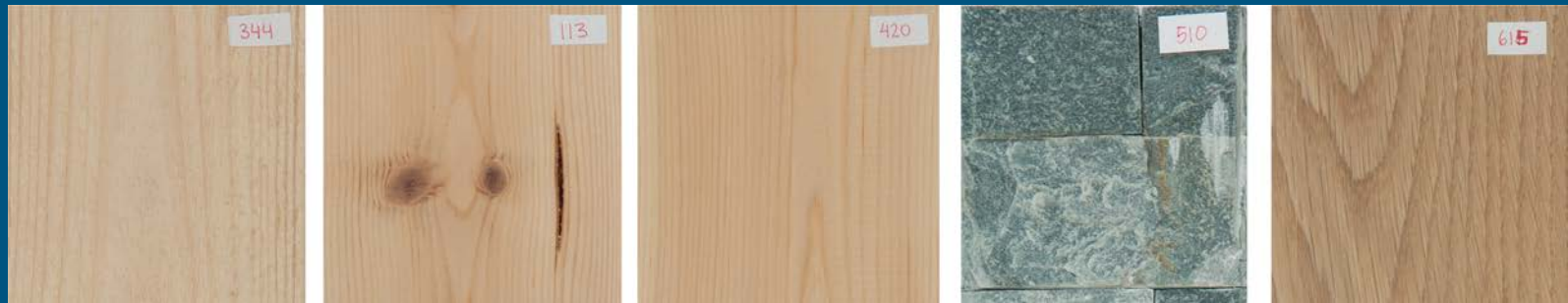
Views of Naturalness

Specimen	Koper – Ljubljana	Finland – Norway	Finland – Slovenia	Norway – Slovenia
Particleboard	-	0.031 *	0.002 **	-
Brick Tile	-	-	0.044 *	-
WPC, Growth rings	-	-	0.049 *	>0.001 ***
Ash, heartwood	-	-	-	0.048 *
MDF, untreated	-	-	0.023 *	-

* significant at 0.05, ** significant at 0.01, *** significant at 0.001

Specimens with statistically significant results (p-value < 0.05, including Bonferroni adjustments) with p-values derived from the Pairwise Wilcoxon Rank Sum test comparing countries, and comparing Koper to Ljubljana within Slovenia

Views of Naturalness



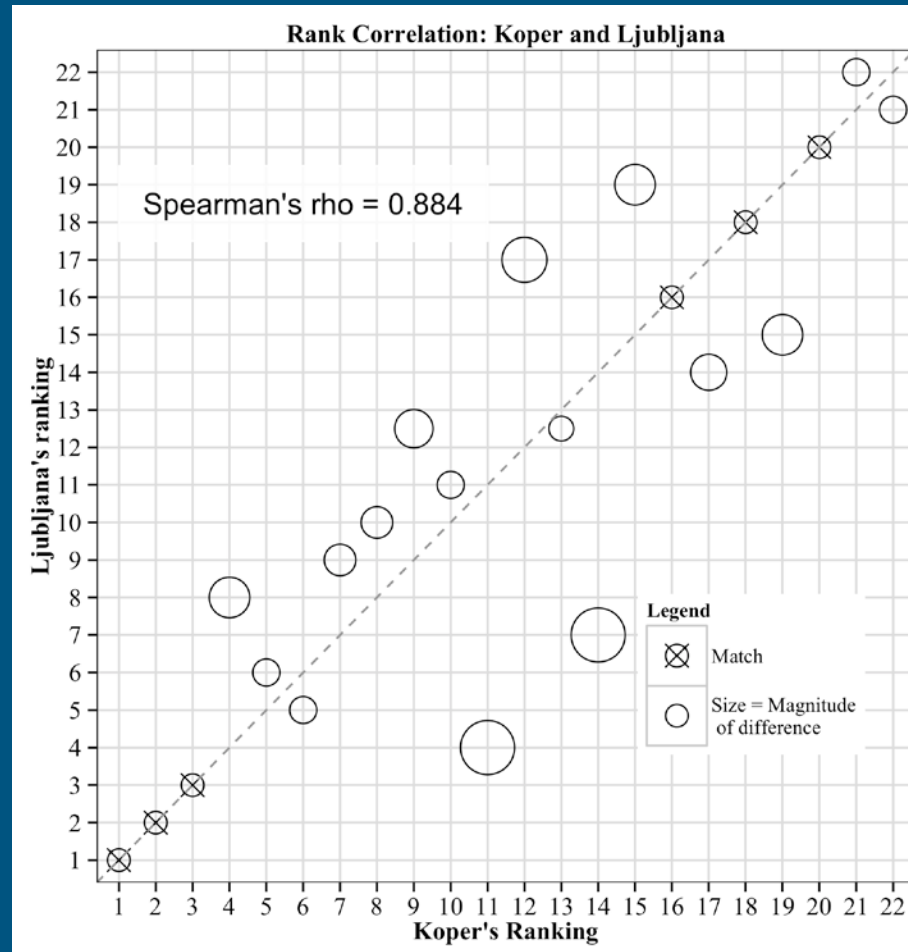
From left: rough clear pine, planed knotty pine, planed clear pine, stone tile, planed ash heartwood

Views of Naturalness

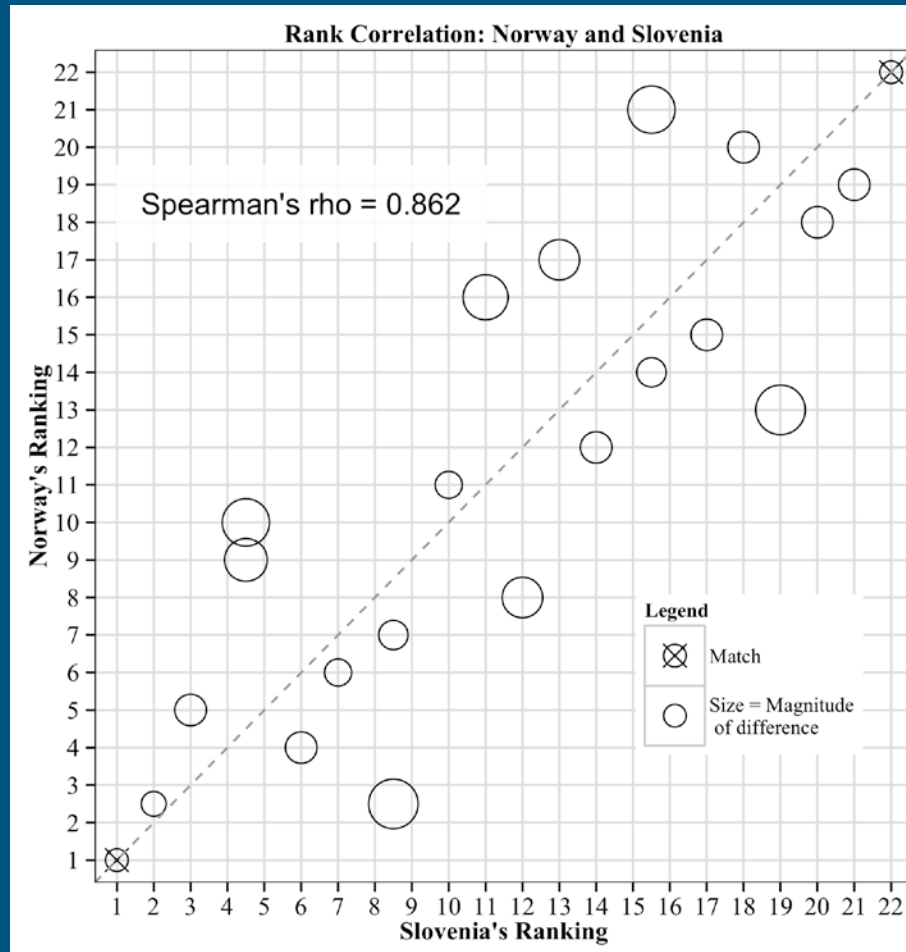


From left: woven fabric, ceramic tile, steel (white), plastic, milled steel

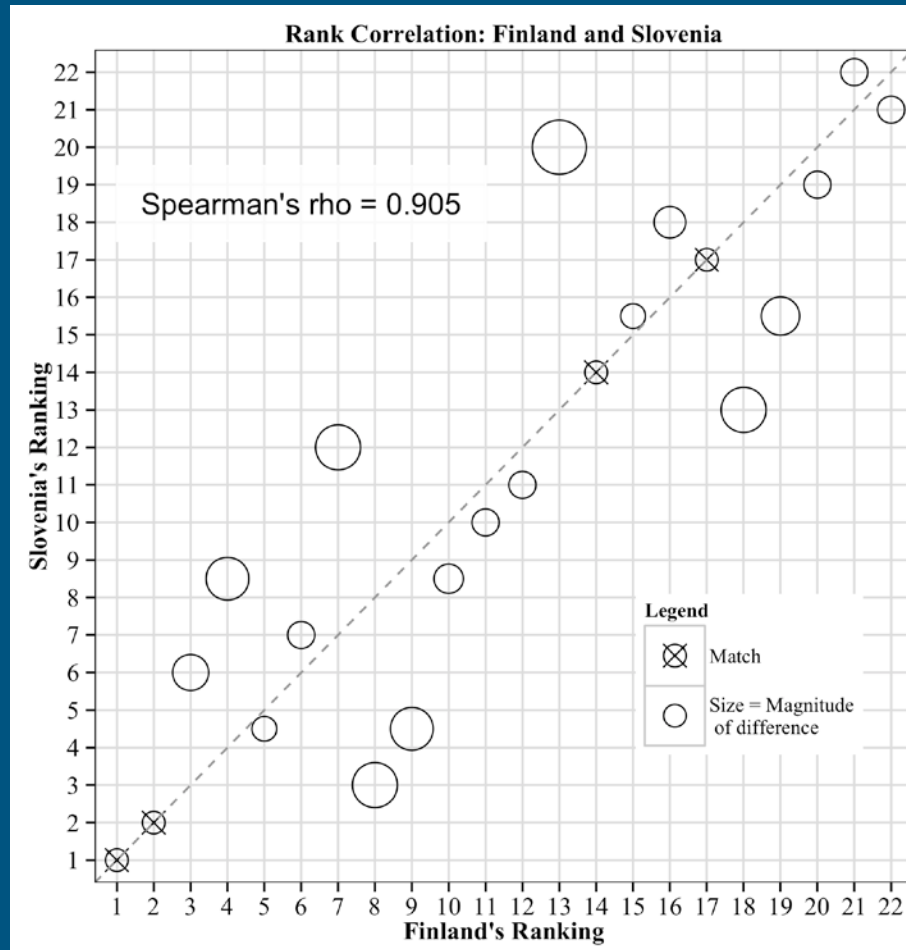
Ranking Correlations: Koper & Ljubljana



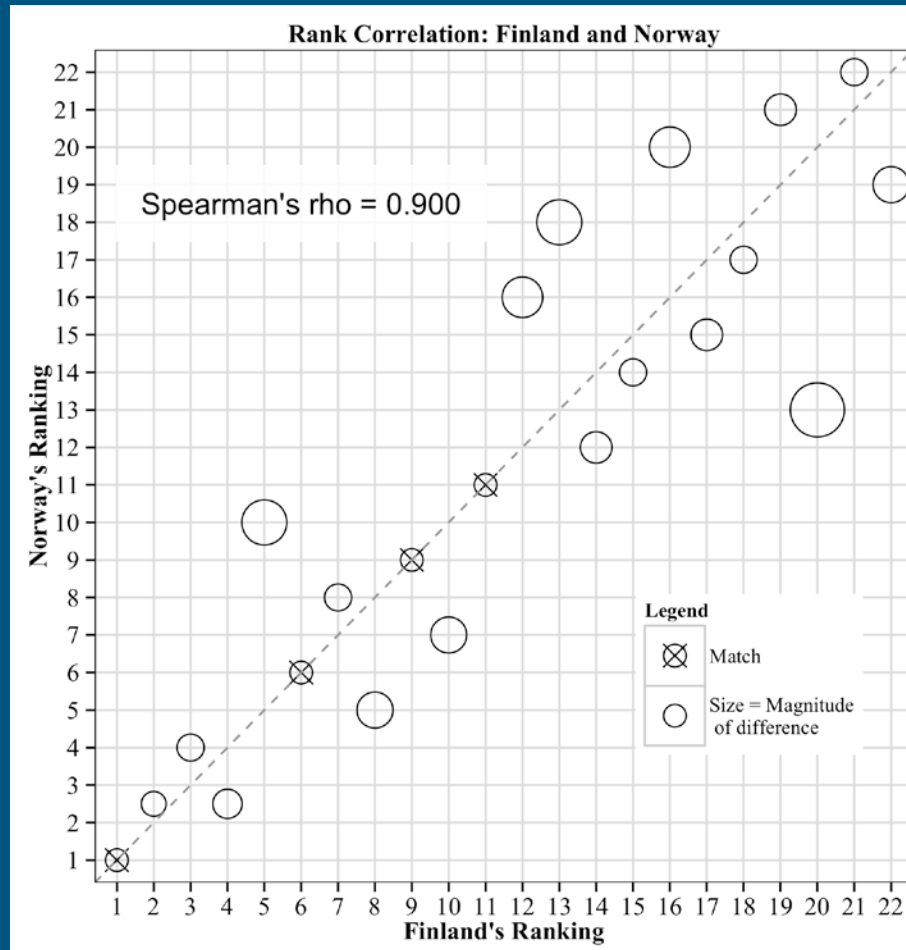
Ranking Correlations: Norway & Slovenia



Ranking Correlations: Finland & Slovenia



Ranking Correlations: Finland & Norway



Views of Naturalness



We can conclude:

Most people tend to agree material naturalness.

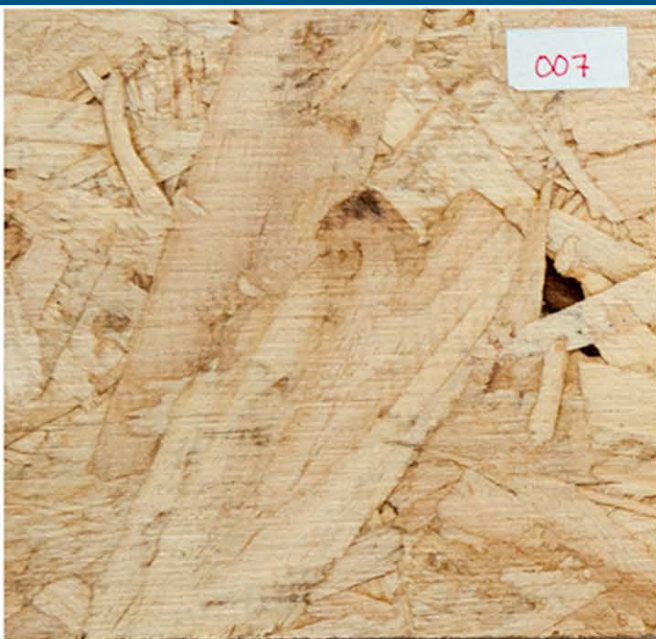
Bio-based materials were generally considered the be more natural than metals and plastics.

Views of Naturalness



We can also conclude:
Of the wood based
composites, the materials
with larger pieces of wood
were considered more
natural than those with
smaller pieces of wood.

Views of Naturalness





THANK YOU!

Questions?
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