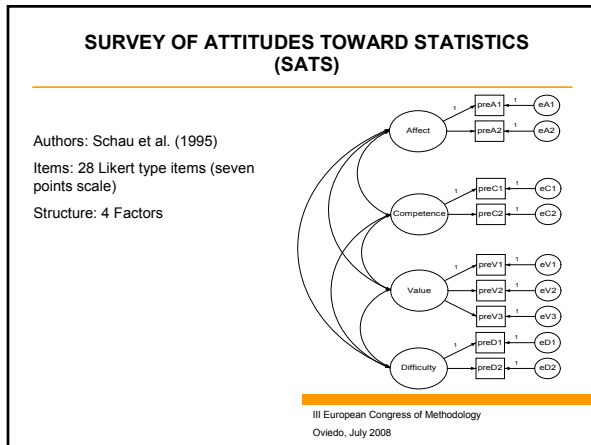
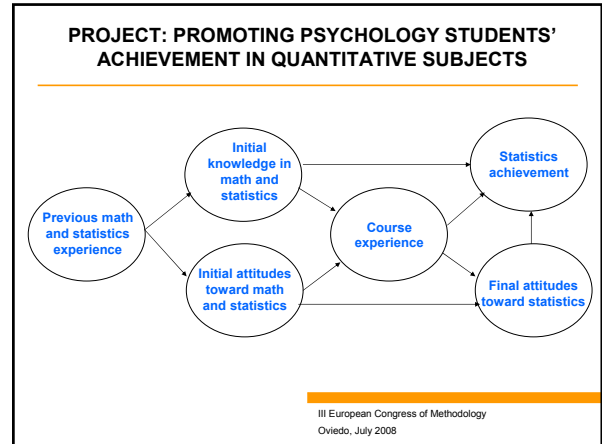


Testing for measurement invariance of the Survey of Attitudes Toward Statistics: A comparison of Italian and Spanish students

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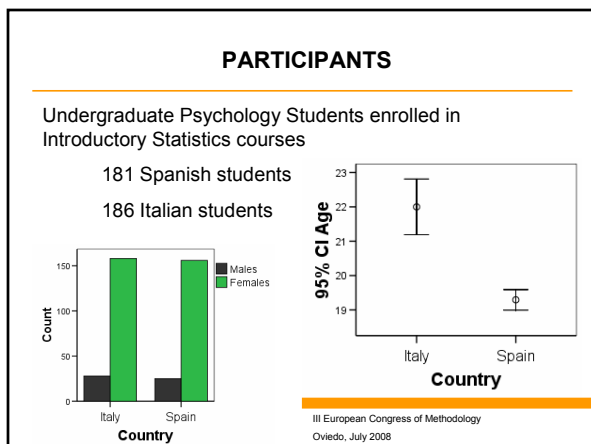
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PURPOSE

To test measurement invariance of the Survey of Attitudes Toward Statistics (SATS) across countries and across time

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DATA ANALYSIS

Multigroup Confirmatory Factor Analysis via MACS (AMOS 6.0)

Testing strategy

- Weak invariance
- Strong invariance
- Strict invariance

Fit Criteria

Hu and Bentler (1999) CFI > 0.95
 Cheung & Rensvold (2002) Δ CFI < 0.01

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RESULTS (1)

Unconstrained Models Fit indices

	Chi-square	DF	TLI	CFI	RMSEA
Time 1 Spain	33.437*	21	.970	.982	.057
Time 2 Spain	28.585	21	.987	.992	.038
Time 1 Italy	24.679	21	.990	.994	.031
Time 2 Italy	36.486*	21	.994	.977	.063
Total	121.187*	84	.977	.987	.025

* Significant chi-square at .05

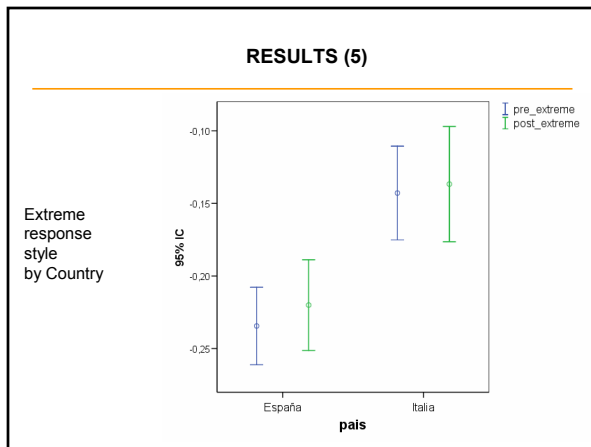
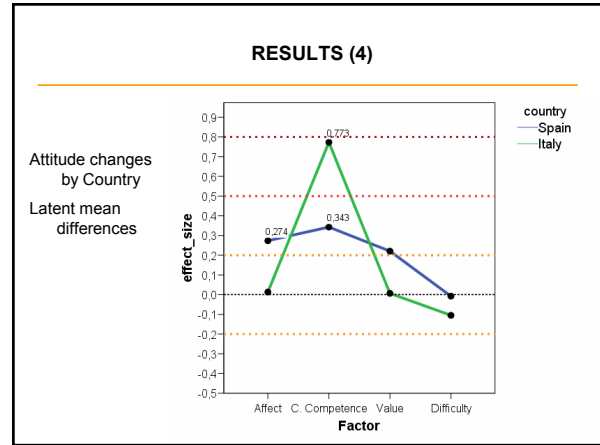
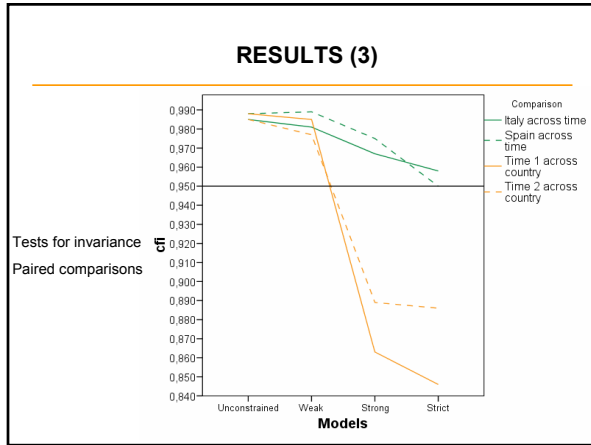
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RESULTS (2)

Measurement Invariant Models Fit Indices

	Chi-square	DF	TLI	CFI	RMSEA
Unconstrained model	121.187	84	.977	.987	.025
<hr/>					
	Chi-square▲	DF▲	TLI▼	CFI▼	RMSEA▲
Weak invariance	29.744	15	.004	.006	.002
Strong invariance	356.786	30	.144	.113	.041
Strict invariance	445.444	57	.133	.131	.039

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MAIN FINDINGS

Schau's Four Factor Model of Attitudes toward Statistics show an adequate fit to the data of Spanish and Italian Students.

Furthermore we found evidence of weak invariance across time and country.

Strong invariance across time has shown an acceptable fit.

However there is a lack of invariance in indicator intercepts when comparing spanish and italian students' data

A tentative explanation of this is the existence of a differential extreme response style

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