

# Latent Variable Effect Forests

## Gesis Workshop Contribution

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# Latent Variable Modeling

## Definition:

Latent Variables are **unobservable phenomena** like

- creativity (Jauk et al., 2014)
- extraversion, neuroticism
- social anxiety, depression (Prenoveau et al., 2011)
- psychopathic personality (Drislane & Patrick, 2017)
- self-leadership (Furtner et al., 2015)

**measured** as theoretical **constructs** through research tools like a questionnaire in a survey.

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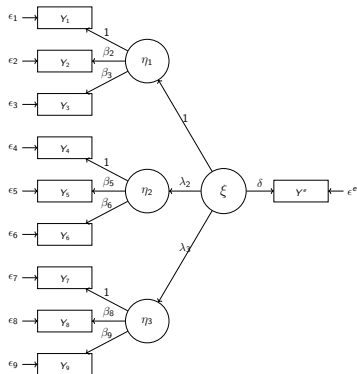
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## Example:



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*“...the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests.”*

*(APA, 2014)*

Need for researchers to find **evidence to support proposed interpretation** of item responses.

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- 3 Estimate latent variable scores for subgroups that fulfill requirements



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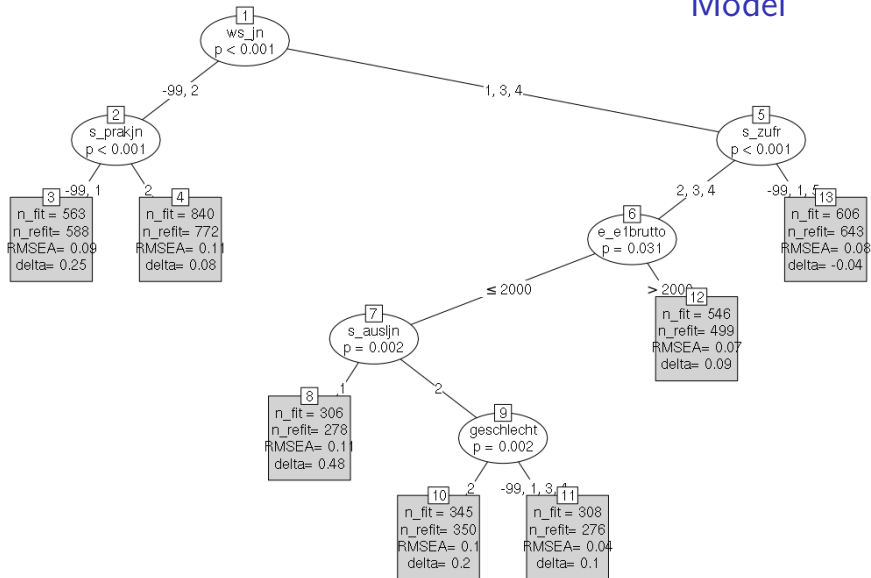
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- 5 Compile results across all iterations



# Tree in LVE Forest for Self-Leadership Model



## Conclusion

LVE Forest detects and controls for:

- Heterogeneity of response styles/understanding (control for DIF)
- Heterogeneity of internal structure (RMSEA-cutoff)
- Heterogeneity of relation to other constructs (control for effect heterogeneity & effect parameter-cutoff)

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→ Predicted latent variable scores fulfill criteria for validity  
although construct may not generally be valid

# References



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## Any questions?

- Contact: [classe@ihf.bayern.de](mailto:classe@ihf.bayern.de)
- Want to try the method?: `scforest` on github (coming soon)