



# The Transition from School to University: The Role of Interests and Abilities in Choice Behavior

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## Theoretical Background

Abilities and interests are important determinants of individuals' educational choices. Previous research has shown that that individual configurations of academic abilities and interests are strong predictors of high school course choices (Nagy et al., in press; Nagy et al., 2006). The present study expands on previous research conducted by the BIJU/TOSCA group by examining the role of abilities and interests in students' choices of university majors. We focus on individual configurations of abilities and vocational interests as defined by John Holland in his RIASEC model (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional). Holland's model postulates a circular arrangement of interests that has implications for the patterning of interests within persons (Nagy, Trautwein, & Lüdtke, in press).

## Research Questions

- Do abilities and interests discriminate between students' choices of major?
- Do abilities and interests make a unique contribution in predicting choices?
- To what degree does the self-selection process result in an accumulation of distinct interest and ability profiles at the level of university majors?

## Method

### Sample

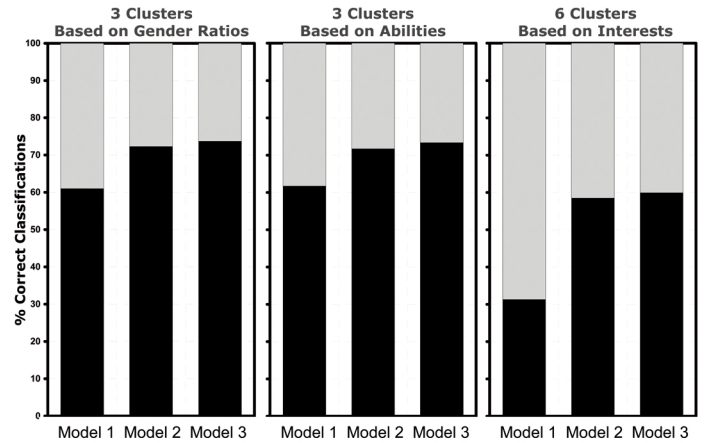
N = 3697 students (55% female) in their final year of *Gymnasium* schooling.

### Measures

- Vocational Interests (6 scales;  $\alpha = .74 - .87$ )
- TIMSS Math Assessment (3 subtests; KR-20 = .80)
- Test of English as a Foreign Language (3 subtests; KR-20 = .92)
- Test of Basic Cognitive Abilities (2 subtests; KR-20 = .91)
- Choices of University Majors

## Results II: Prediction of University Major Choices

- Prediction of students' choices of major by multinomial regression models
- Examination of alternative classifications of university majors determined by means of cluster analysis
- *Model 1*: Ability factors as predictors
- *Model 2*: Interest factors as predictors
- *Model 3*: Ability and interest factors, school type, and gender as predictors

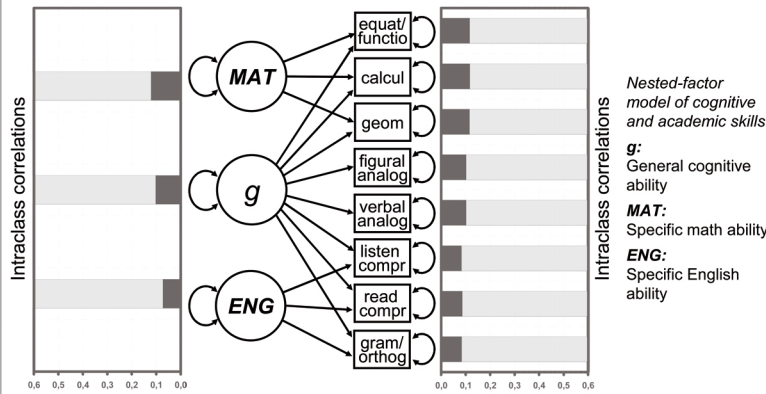


- Interest profiles are the best predictors of students' aspirations
- The accuracy of prediction by interests alone could not be improved by considering other characteristics, irrespective of the grouping of majors

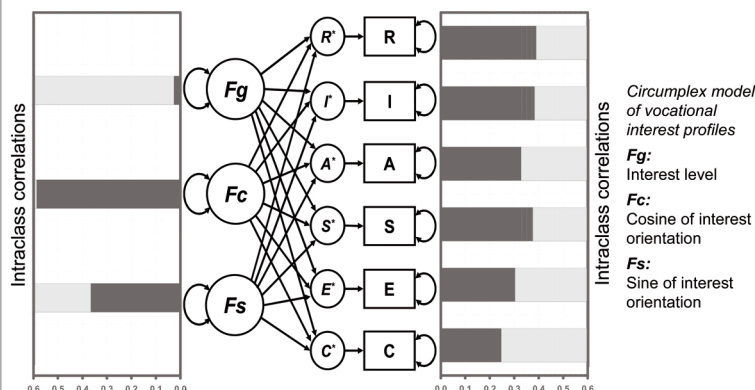
## Results I: Discrimination Between University Major Choices

- Examination of the potential of abilities and interests to discriminate between major choices (decomposition of variance between and within majors)
- Intraclass correlations of factor scores and indicator true scores

### Abilities

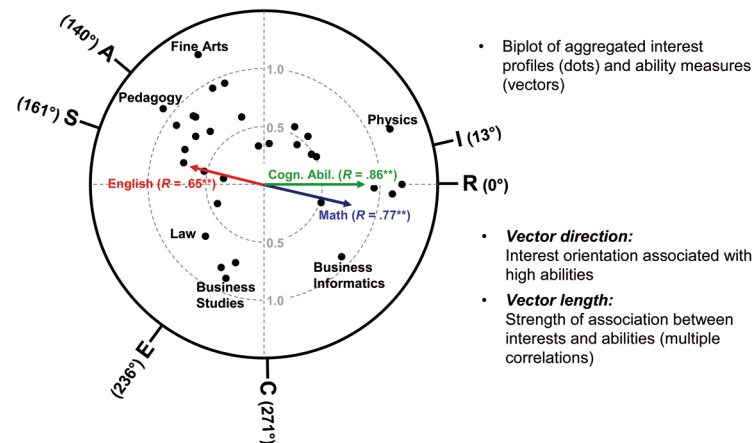


### Interests



## Results III: Concentration of Interest and Ability Profiles

- Examination of associations between aggregated interest profiles and abilities
- Linear-angular regression of aggregated ability scores on aggregated interest profile orientations



- Strong correlations of abilities and interest on the level of university majors
- Accumulation of individuals with similar interest and ability profiles

## Conclusions

- Abilities and vocational interests are both systematically related to students' career aspirations.
- Interest profiles discriminate best between their choices.
- Interest profiles are the most powerful predictors of individuals' aspirations, suggesting that they are the major driving force in self-selection into different career paths.
- The self-selection process outlined here is likely to result in profound differences in the social composition of educational and occupational environments characterized by a concentration of individuals with specific interest and ability profiles.

## Key References

Nagy, G., Garrett, J., Trautwein, U., Cortina, K. S., Baumert, J., & Eccles, J. (in press). Gendered high school course selection as a precursor of gendered occupational careers: The mediating role of self-concept and intrinsic value. In H. M. G. Watt & J. S. Eccles (Eds.), *Explaining gendered occupational outcomes: Examining individual and social explanations through school and beyond*. APA books.

Nagy, G., Trautwein, U., Köller, O., Baumert, J., & Garrett, J. (2006). Gender and course selection in upper secondary education: Effects of academic self-concept and intrinsic value. *Educational Research and Evaluation*, 12, 323-345.

Nagy, G., Trautwein, U., & Lüdtke, O. (in press). The structure of vocational interests in Germany: Different methodologies, different conclusions. *Journal of Vocational Behavior*.

- Both interests and abilities discriminate between students' choices of majors.
- Largest differences between majors were found for interest profiles.
- Preferences for working with people vs. things (*Fc*) discriminates best between students' choices.