The perceived role fit of women and men academics:

Evidence from sports economics, management, and sociology

Lara Lesch | Katrin Scharfenkamp | Pamela Wicker

Department of Sports Science
Bielefeld University, Germany

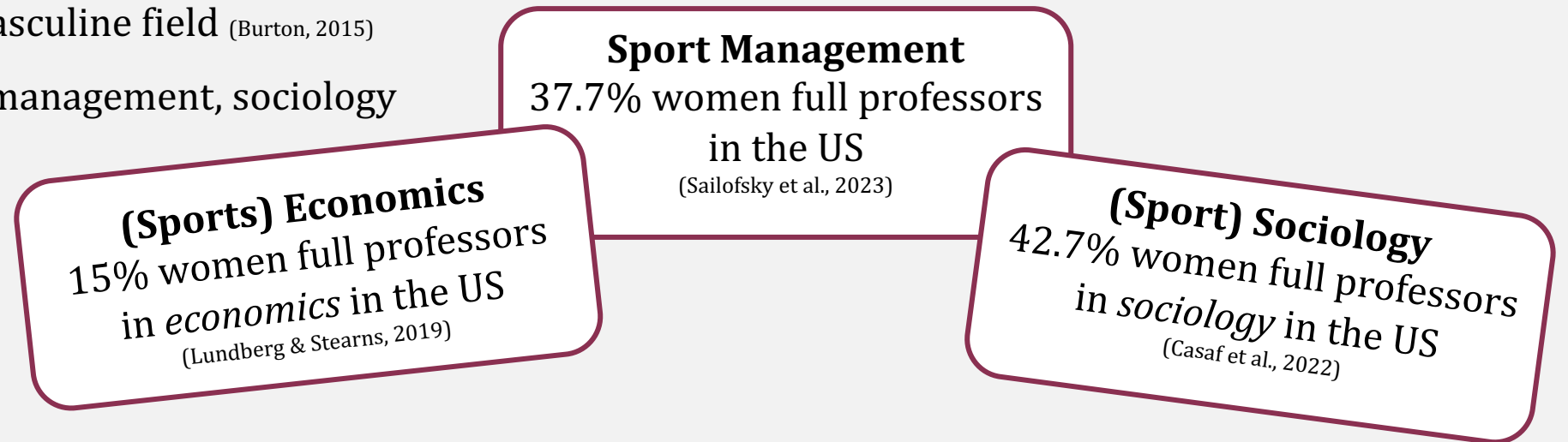ESEA Conference 2023 – Cork, Ireland

Introduction

- More women than men are enrolled in under- and postgraduate programs in the European Union (Eurostat, 2020)

- Women occupy only 26.2% of professor positions in the European Union (European Commission, 2021

SOCIAL SPORTS SCIENCES

- Sport is perceived as a masculine field (Burton, 2015)

- Here: Sports economics, management, sociology (SEMS)

Sport Management
37.7% women full professors in the US
(Sailofsky et al., 2023)

(Sports) Economics
15% women full professors in *economics* in the US
(Lundberg & Stearns, 2019)

(Sport) Sociology
42.7% women full professors in *sociology* in the US
(Casaf et al., 2022)

"Women do not have what it takes" because "science is male"

(Van Veelen & Derks, 2022, p. 750; Smyth & Nosek, 215, p. 1)

Introduction

- Explanation: Presence of gender-science stereotypes and lack-of-fit between the job role/relevant job attributes (Heilman, 2012) and women's social gender role (Eagly, 1987)

- Gender-science stereotypes are based on historically grown gender stereotypes (Branchefsky & Park, 2018) and shape the perception of role fit (Carli et al., 2016)

- Different levels of gender-science stereotypes exist in different disciplines (Leslie et al., 2015)

- Research focused on STEM disciplines, resulting in a research gap for the social sciences (Johnson et al., 2022)

- Role fit has not been empirically calculated yet

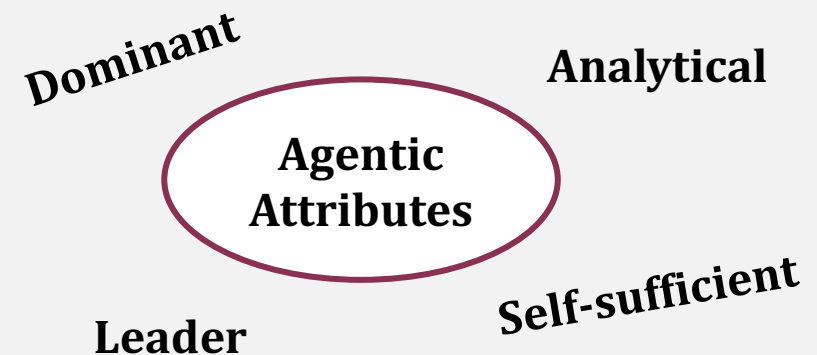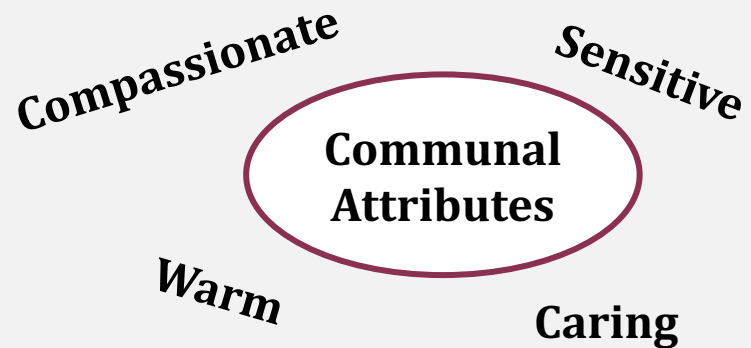**RQ1:** What is the perceived role fit of women and men academics in SEMS?

RQ2: Which individual characteristics are related to the perceived role fit?

Theory & Literature

Social Role Theory (Eagly, 1987; Eagly et al., 2000)

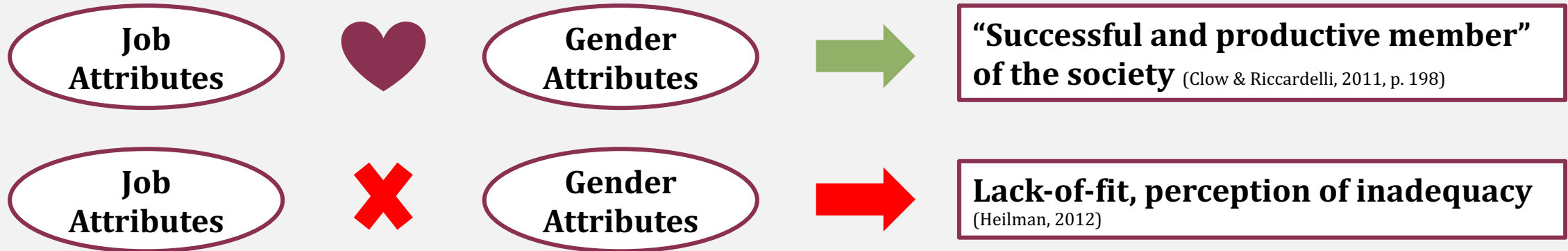| Gender stereotypes… |
| --- |
| • are linked to traditional roles which women and men should fulfill in the society |
| • reflect attributes and qualities women and men have and should have |
| • result in expectations about appropriate and desired behavior |

Historically, men participated in the labor force while women focused on homemaker and childcare work (Eagly et al., 2000)

Compassionate   Sensitive

Communal Attributes

Warm   Caring

Dominant   Analytical

Agentic Attributes

Leader   Self-sufficient

(Eagly & Karau, 2002; Prentice & Carranza, 2002)

Theory & Literature

Role Congruity Theory (Eagly & Karau, 2002)

Prejudices get relevant when the social role is not congruent with the attributes and requirements of a job position

| Job Attributes | ❤️ | Gender Attributes | ➡️ | **"Successful and productive member" of the society** (Clow & Riccardelli, 2011, p. 198) |
| Job Attributes | ❌ | Gender Attributes | ➡️ | **Lack-of-fit, perception of inadequacy** (Heilman, 2012) |

Role Fit & Gender Stereotypes in Academia

- Importance of agentic attributes for academics (Van Veelen & Derks, 2022)
- Men-dominated disciplines are related to stronger and more negative stereotypes about women's fit to the discipline (Branchefsky & Park, 2018)
- Perceived role fit might be related to presence of women within a discipline (Carli et al., 2016)

Theory & Literature

Role Attributes: Relevant Dimensions

Leadership

- „Think manager – think male" (O'Connor, 2014, p. 109)
- Women prefer democratic and participative leadership, men directive and top-down (Eagly & Johnson, 1990; Eagly & Johannesen-Schmidt, 2001)

Research Methods

- Stereotype: Women have less mathematical, technical, and analytical skills (Calanca et al., 2019)
- Women are minorities in disciplines in which quantitative research is performed (Bettinger & Long, 2005)

Research Topics

- Major choice: Women work with people, men work with things (Su et al., 2009)
- Women do research focused on gender, health, education, men related to finances, econometrics, statistics (Conde-Ruiz et al., 2022; Thewall et al., 2019)

Media Visibility

- Men are more often invited as scientific experts in talk shows (Hetsroni & Loewenstein, 2014)
- Women are less visible in academic journals in SEMS (Gomez-Gonzalez etz al., 2021; Pitts et al., 2014; Wicker et al., 2022)

Theory & Literature

Individual Characteristics	Hypotheses
Academic Discipline (Branchefsky & Park, 2018; Smyth & Nosek, 2015; Leslie et al., 2015; Gomez-Gonzalez et al., 2021; Pitts et al., 2014; Jones et al., 2008; Sailfsky et al., 2023; Ginther & Kahn, 2004; Wicker et al., 2022; Casad et al., 2022, Su et al., 2009)	**1a:** Individuals in sport sociology perceive a higher role fit for women academics than individuals in sports economics and sport management. **1b:** Individuals in sports economics and sport management perceive a higher role fit for men academics than individuals in sport sociology.
Career Stage (van Veelen & Derks, 2022; Ollrogge et al., 2022; Rehbock et al., 2021)	**2a:** Individuals in early career stages perceive a higher role fit for men academics. **2b:** Individuals in early career stages perceive a lower role fit for women academics.
Gender (Carli et al., 2016; Smyth & Nosek, 2015; Eagly & Karau, 2002; Hentschel et al., 2019; Bye et al., 2022; Diekman et al., 2004)	**3a**: Women perceive a higher role fit for women academics. **3b**: Men perceive a higher role fit for men academics and a lower role fit for women academics.
Role Models (Schunk & Usher, 2019; Lockwood, 2006; Dasgupta & Asgari, 2004; Olsson & Martiny, 2018)	**4a:** Individuals with a woman role model perceive a higher role fit for women academics. **4b:** Individuals with a man role model perceive a higher role fit for men academics.
Country (Mòe et al., 2021; Hoyt, 2012, World Economic Forum, 2022)	**5a**: Individuals who study or work in the US or Canada perceive a higher role fit for women academics. **5b**: Individuals who study or work in Germany or Austria perceive a higher role fit for men academics.

Method

Data Collection

Research project „**Visibility and perception of female professors in sports economics, management, and sociology**"

- Online questionnaire targeted at students (under- and postgraduate, PhD), post-doc researchers, professors in SEMS
- June 2022 – January 2023
- Distribution with Twitter/email after 7 conferences in SEMS + more than 300 emails to academics in SEMS at universities in Australia, Austria, Canada, Germany, Switzerland, UK, US
- *n*=792

SPONSORED BY THE

Federal Ministry of Education and Research

Questionnaire

- Perception of 16 role attributes of ideal-typical / women / men academics in SEMS (5-point scale) in the four dimensions leadership, research methods, research topics, and media visibility
- Individual characteristics (Career stage, gender, role model, country of work/study)

Method

Dimensions and items of the role attribute scale (1=strongly disagree; 5=strongly agree; n=792)

"Academics in sport management/economics/sociology should have the following attributes:"	Mean	Cronbach's α
Leadership		0.704
authoritarian	2.69	
power-seeking	2.04	
cooperative	4.57	
solution-oriented in conflict situations	4.50	
Quantitative methods		0.834
analytical	4.27	
statistically competent	4.05	
good with numbers	3.82	
able to handle large data sets	3.83	
Research topics		0.861
knowledgeable in the field of professional sport leagues	3.86	
knowledgeable in the field of community sport	3.93	
knowledgeable in the field of sport performance and competition	3.89	
knowledgeable in the field of inclusion and diversity in sport	3.98	
Media visibility		0.819
visible in the media	2.77	
visible on social media platforms by sharing scientific content	2.78	
visible in scientific journals	3.54	
visible as experts on television	2.58	
All items		0.755

Method

Data Analysis

- Descriptive statistics

- Total role fit indices (RFI) and for the four dimensions based on Euclidian distance

    ⇒ Procedure described by Hallmann and Breuer (2010) and Musante et al. (1999); produces values between 0-1

$$RFI\,(x_i, y_i) = 1 - \sqrt{\sum_{i=1}^{n} (x_i - y_i)^2}$$

x_i attributes of women / men academics in SEMS
y_i attributes of an ideal-typical academic in SEMS

- Regression analyses to investigate relationship between perceived role fit indices and individual characteristics
  - Multicollinearity (correlation coefficients and variance inflation factors)
  - Linear and fractional response models (dependent variable is continuous but bounded between 0 and 1; Papke & Woolridge, 1996)
  - Heteroscedasticity robust standard erros
  - Significance level α = 0.05

The perceived role fit of women and men academics in sport economics I management I sociology

Results

Overview of variables and summary statistics (n=792)

Variable	Description and codes	Mean	SD	Min	Max
Fit W_Total	Total role fit index for women academics (0=no fit; 1=perfect fit)	0.77	0.11	0.18	1
Fit M_Total	Total role fit index for men academics (0-1)	0.75	0.11	0.33	1
Fit Diff_Total	Absolute difference between Fit M_Total and Fit W_Total	-0.01	0.10	-0.38	0.65
Fit W_Leader	Leadership fit index for women academics (0-1)	0.79	0.15	0.12	1
Fit M_Leader	Leadership fit index for men academics (0-1)	0.72	0.19	0	1
Fit W_Methods	Research methods fit index for women academics (0-1)	0.81	0.15	0	1
Fit M_Methods	Research methods fit index for men academics (0-1)	0.82	0.13	0.12	1
Fit W_Research	Research topics fit index for women academics (0-1)	0.82	0.15	0.13	1
Fit M_Research	Research topics fit index for men academics (0-1)	0.81	0.14	0.25	1
Fit W_Media	Media visibility fit index for women academics (0-1)	0.76	0.15	0.10	1
Fit M_Media	Media visibility fit index for men academics (0-1)	0.77	0.15	0.13	1
Economics	Sports economics is part of respondent's study/work (1=yes)	0.388	---	0	1
Management	Sport management is part of respondent's study/work (1=yes)	0.663	---	0	1
Sociology	Sport sociology is part of respondent's study/work (1=yes)	0.503	---	0	1
Student	Respondent is a Bachelor or Master student (1=yes)	0.650	---	0	1
PhD student	Respondent is a PhD student (1=yes)	0.154	---	0	1
Post-doc	Respondent is a post-doc researcher (1=yes)	0.054	---	0	1
Professor	Respondent is a professor (1=yes)	0.141	---	0	1
Woman	Respondent is a woman (1=yes)	0.409	---	0	1
Woman_Prof_RM	Respondent has a woman professor as role model (1=yes)	0.324	---	0	1
Man_Prof_RM	Respondent has a man professor as role model (1=yes)	0.359	---	0	1
Germany	Respondent studies/works at a university in Germany (1=yes)	0.606	---	0	1
US	Respondent studies/works at a university in the USA (1=yes)	0.178	---	0	1
Canada	Respondent studies/works at a university in Canada (1=yes)	0.078	---	0	1
Australia	Respondent studies/works at a university in Australia (1=yes)	0.033	---	0	1
Austria	Respondent studies/works at a university in Austria (1=yes)	0.030	---	0	1
UK	Respondent studies/works at a university in UK (1=yes)	0.029	---	0	1
Other_Country	Respondent studies/works at a university in another country (1=yes)	0.045	---	0	1
Science Attitude	Science attitude index (1=low science attitude; 5=strong science attitude)	3.23	0.034	1	5

Results

Fractional response regression models (1a-1b) for the total role fit index and linear regression model (2) for the total fit difference between of women and men academics (n=792)

	1a: Fit W_Total	1b: Fit M_Total	2: Fit Diff_Total
Economics	0.007	0.014	0.006
Management	-0.022*	-0.024**	-0.002
Sociology	0.009	0.002	-0.007
Student	REF	REF	REF
PhD student	-0.036**	-0.043**	-0.007
Post-doc	-0.050**	-0.079***	-0.031
Professor	-0.078***	-0.085***	-0.007
Woman	7.310	-0.028**	-0.028***
Woman_Prof_RM	0.025	-0.015	-0.042**
Man_Prof_RM	-0.021	0.036*	0.059***
Germany	REF	REF	REF
USA	0.027	0.006	-0.022
Canada	0.028*	-0.013	-0.041**
Australia	0.006	-0.005	-0.012
Austria	-0.001	-0.010	-0.008
UK	0.031	-0.008	-0.041
Other_Country	0.055*	0.035	-0.021
Science Attitude	0.006	0.005	-0.008
(Pseudo) R^2	0.004	0.007	0.073
χ^2 / F	54.65***	101.87***	3.22***

Note: Displayed are the average marginal effects; *$p<0.05$; **$p<0.01$; ***$p<0.001$; all models estimated with heteroscedasticity robust standard errors.

Results

Fractional response regression models for the role fit indices of women and men academics by dimension (n=792)

	3a: Fit W_Leader	3b: Fit M_Leader	4a: Fit W_Methods	4b: Fit M_Methods	6a: Fit W_Research	6b: Fit M_Research	5a: Fit W_Media	5b: Fit M_Media
Economics	0.023	0.038**	0.008	0.018	0.014	0.006	-0.006	-0.002
Management	-0.028*	-0.033*	-0.019	-0.012	-0.012	-0.010	-0.023	-0.038**
Sociology	0.022	0.014	0.001	-0.006	0.014	-0.003	0.004	0.006
Student	REF	REF	REF	REF	REF	REF	REF	REF
PhD student	-0.038*	-0.053*	-0.028	-0.022	-0.044*	-0.075***	-0.036*	-0.027
Post-doc	-0.042	-0.146***	-0.058*	-0.038	-0.024	-0.088***	-0.039	-0.036
Professor	-0.095***	-0.143***	-0.064*	-0.058**	-0.065**	-0.066**	-0.069**	-0.055**
Woman	0.002	-0.055***	0.001	-0.009	0.010	-0.033**	-0.005	-0.012
Woman_Prof_RM	0.038*	-0.041	0.014	-0.015	0.002	0.009	0.028	-0.005
Man_Prof_RM	-0.008	0.061*	-0.009	0.048*	-0.009	0.008	-0.031	0.029
Germany	REF	REF	REF	REF	REF	REF	REF	REF
USA	0.035	-0.013	0.010	0.001	0.041*	0.040*	0.030	0.021
Canada	0.041	-0.030	0.008	-0.019	0.057**	0.009	0.008	-0.002
Australia	0.005	-0.001	-0.041	-0.042	0.037	0.058*	0.007	-0.018
Austria	0.029	-0.020	-0.010	-0.016	-0.001	0.035	-0.042	-0.040
UK	0.024	-0.041	0.002	0.007	-0.007	-0.014	0.105**	0.032
Other_Country	0.092**	0.063	0.039	0.029	0.040	0.048	0.046	0.014
Science Attitude	0.009	0.009	0.012	0.006	-0.001	0.005	0.005	0.001
Pseudo R²	0.009	0.027	0.004	0.006	0.006	0.007	0.004	0.004
χ^2	50.67***	133.15***	26.81*	34.82**	33.59**	53.18***	32.53**	33.54**

Note: Displayed are the average marginal effects; *p*<0.05; **p*<0.01; ***p*<0.001; all models estimated with heteroscedasticity robust standard errors.

Results

Individual Characteristics	Hypotheses	Results
Academic Discipline	**1a:** Individuals in sport sociology perceive a higher role fit for women academics than individuals in sports economics and sport management.	✗
	1b: Individuals in sports economics and sport management perceive a higher role fit for men academics than individuals in sport sociology.	✓ Sport economics (leadership fit)
Career Stage	**2a:** Individuals in early career stages perceive a higher role fit for men academics.	✓ For women, too
	2b: Individuals in early career stages perceive a lower role fit for women academics.	✗
Gender	**3a**: Women perceive a higher role fit for women academics.	✓ (Difference)
	3b: Men perceive a higher role fit for men academics and a lower role fit for women academics.	✓
Role Models	**4a:** Individuals with a woman role model perceive a higher role fit for women academics.	✓
	4b: Individuals with a man role model perceive a higher role fit for men academics.	✓
Country	**5a**: Individuals who study or work in the US or Canada perceive a higher role fit for women academics.	✓
	5b: Individuals who study or work in Germany or Austria perceive a higher role fit for men academics.	✗

Conclusion

Contribution

- Gender stereotypes in SEMS; three disciplines which are considered more or less typical for women (Conde-Ruiz et al., 2022; Su et al., 2009)
- Previous studies were focused on STEM disciplines
- Calculation of role fit indices; four dimensions revealed a more nuanced look
- Enhances our understanding about the relationship between individual characteristics and perception of gender stereotypes

Implications

- Not possible to generalize findings from other (men-dominated) disciplines
- Increase the communication between SEMS disciplines might help to tackle gender stereoypes
- Women role models are helpful because they showcase that they have had the skillset to become a full professors

Limitations

- Cross-sectional data
- Potential bias between peception and actual behaviors
- Selection bias: People who were interested in topics like gender diversity or who supports efforts to increase the share of women
- Binary gender considerations

WISEMS – Women professors in sport economics, sport management, and sport sociology

Thanks for your attention!

More about the project:

Website: www.wisems.org
Twitter: @WISEMS_BI

Contact:

Lara Lesch
Dept. of Sports Science
Chair III: Sport and Society
lara.lesch@uni-bielefeld.de