

# Boosting the H-Index: The Role of Self-Citation in Gender Differences Among Professors

## 1 INTRODUCTION

- **Scientific visibility** and **recognition** are often measured by bibliometric indicators such as the **h-index**, which combines both publication quantity and citation frequency [1].
- Research indicates that **female scientists have lower citation rate** [2], and also a **lower h-index** [3] than male scientists.
- Studies suggest that one can **influence** your own **h-index through self-citations** [4] or by sharing research on **social media platforms** [5].

## 2 DATA & METHODS

- We conducted an online survey of professors at universities and universities of applied sciences (UAS) across Germany from November 2023 – February 2024
- 1.839 cases remain after data cleaning
- IBM SPSS Statistics 29 was used to analyse the data. For the mediation analysis, Hayes' Process macro version 4.2 was applied [6].

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Do self-citations and social media activities mediate the impact of gender on the h-index?

## 3 FINDINGS

- **female professors** have a **lower h-index** than male professors
- The effect is still significant when adding covariates, and almost significant on a 5%-level when adding mediators
- **Self-citations have a positive effect on h-index** and **male professors cite themselves more often** than their female colleagues
- Social media posts show no significant effect

Table 1. Linear regression analyses on h-index

	model 1	model 2 with covariates <sup>4</sup>	model 3 with covariates and mediators
female <sup>1</sup>	-5.755***	-2.493*	-2.004 <sup>a</sup>
self-citations <sup>2</sup>	-	-	1.445**
social media posts <sup>3</sup>	-	-	.470
N respondents	1144	1.086	1.035
R <sup>2</sup>	0.17	0.44	.45

\*p<.05; \*\*p<.01; \*\*\*p<.001 (two-tailed tests); <sup>1</sup>1=yes; <sup>2</sup>selfcitation: "I frequently cite myself. (1 = don't agree, 4 = agree)"; <sup>3</sup>social media posts: "How often do you typically share your own work/research contributions on one or more online platforms? (0 = never, 4 = several times per week)"; <sup>4</sup>covariates used are: age, type of university, discipline

Figure 1. Distribution of the h-index by gender

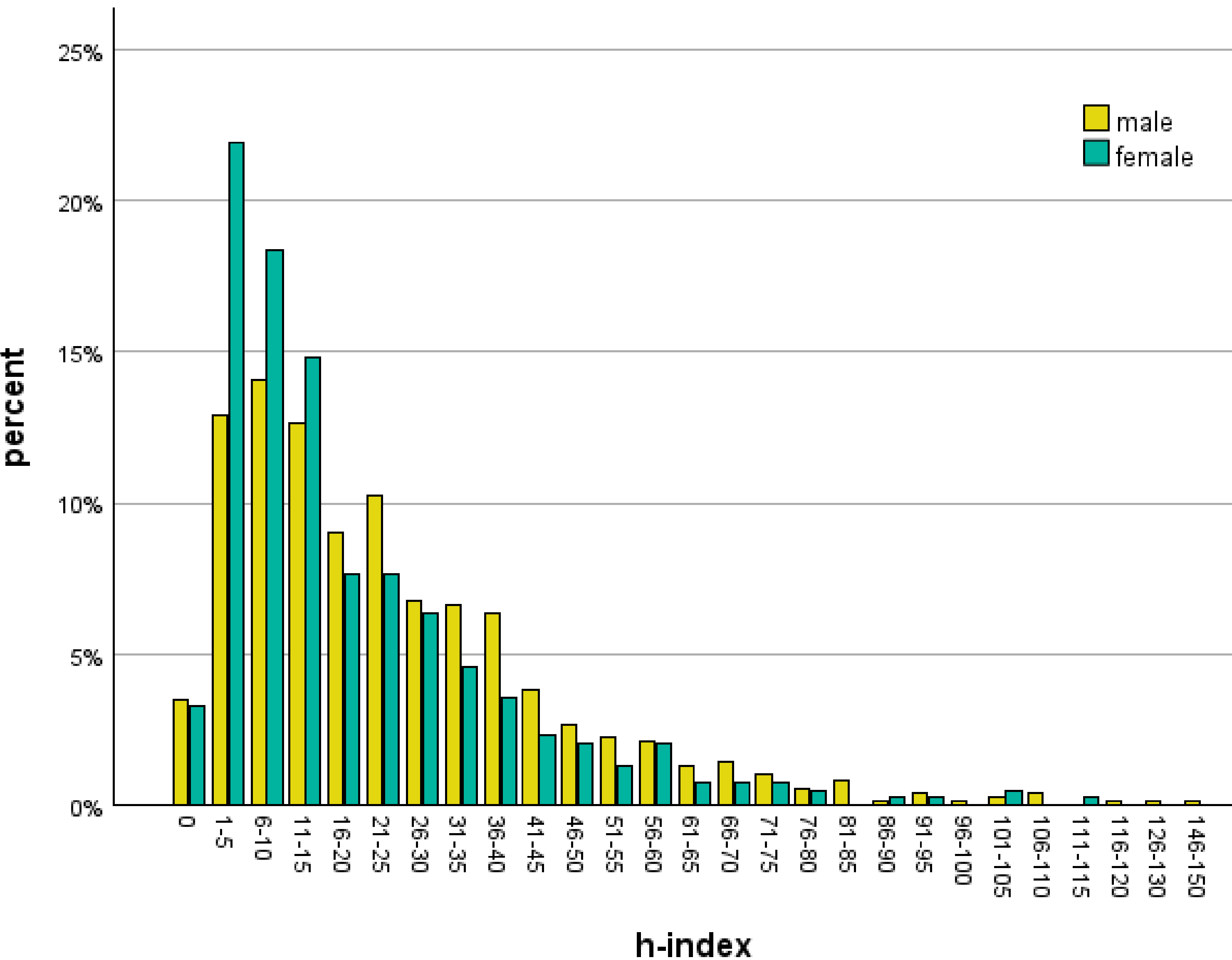
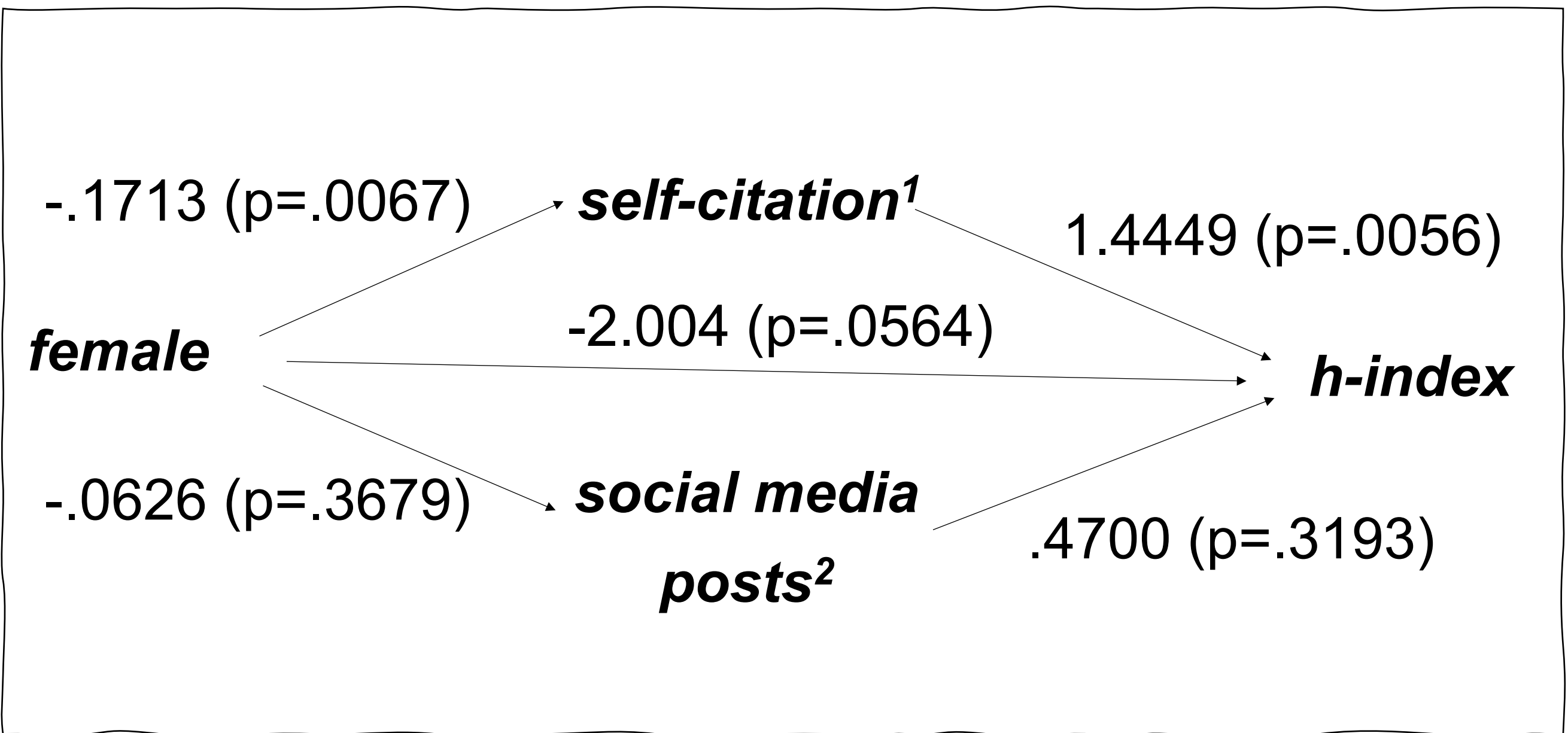


Figure 2. Mediation model: Influence of female gender on h-index, mediated by self-citations and social media posts



## 4 CONCLUSION

- The gender difference in the h-index in our sample can be partially explained by different attitudes to self-citation, while social media posts neither differ by gender nor have any impact on the h-index.
- To close the gender gap it is possible that encouraging women to cite themselves more frequently and restricting excessive self-citation could mitigate the gender differences in h-index.

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