

# Introduction

Daniel Saggau

5/2/2021

## 1 History of Causal Models

There is no clear consensus on when exactly structural causal modelling originated. Judea Pearl argues that path analysis, a method proposed by Sewall Wright in the 1920s is the foundation of modern structural causal models. Sewall Wright, a Statistician and Geneticist, sparked the interest in causal modelling with his path analysis which subsequently was adopted by various other disciplines such as econometrics, psychometrics and sociology. This path analysis is a structural equation model with one variable per indicator.

Thereafter the Norwegian Economist Trygve Haavelmo (1944) provided a modelling framework for the field of economics in his paper ‘The Probability Approach in Econometrics.’ One could argue that this paper provided a new level of sophistication to the discipline of Econometrics as a distinct field. Haavelmo was awarded the Nobel Memorial Prize in Economic Science in 1989 for his work on this issue. His work focused on

Tjalling Koopmans

### 1.1 Bayesian Networks

### 1.2 SEMs

### 1.3 SCMs

## References

- Hoover, Kevin D. 2012. “On the Reception of Haavelmo’s Econometric Thought.”
- Pearl, Judea. 2009. *Causality*. Cambridge university press.
- . 2012. “The Causal Foundations of Structural Equation Modeling.” CALIFORNIA UNIV LOS ANGELES DEPT OF COMPUTER SCIENCE.
- Peters, Jonas, Dominik Janzing, and Bernhard Schölkopf. 2017. *Elements of Causal Inference: Foundations and Learning Algorithms*. Adaptive Computation and Machine Learning Series. Cambridge, Massachusetts: The MIT Press.
- Qin, Lianhui, Antoine Bosselut, Ari Holtzman, Chandra Bhagavatula, Elizabeth Clark, and Yejin Choi. 2019. “Counterfactual Story Reasoning and Generation.” *arXiv Preprint arXiv:1909.04076*.