AOM Hackathon
Organizational Design and Computational Models
Harsh Ketkar (Bocconi University)

In this hackathon, we will try to extend the classic Sah and Stiglitz (1988) model of organizational evaluation, and thus explore new research questions. In a nutshell, the model specifies different organizational structures, namely polyarchies and hierarchies, and demonstrates differences in evaluation processes between the two. A significant body of later work has built upon this basic model to make important contributions using agent-based models (e.g. Csaszar, 2013; Csaszar and Eggers, 2013), as well as empirical and experimental methods (e.g. Csaszar, 2012; Keum and See, 2017; Piezunka and Schilke, 2023).

1. How can we extend the basic Sah and Stiglitz model to answer new questions? What restrictive assumptions could we relax?
2. How could we improve external validity of these models? What assumptions regarding organizational structure, and individual agents could we revisit in order to do so? For instance, Piezunka and Schilke (2023) explore how individual agents modify their evaluation and voting patterns in response to selection thresholds, something that the original model considers to be fixed.
3. Relatedly, what existing phenomena could we demystify by tweaking the basic model? For instance, Ketkar and Workiewicz (2022) draw upon the basic model to explain the boundary conditions and tradeoffs associated with open allocation.
4. How can we recombine the basic model with other families of models (e.g. NK-models, Bandit models, etc) to answer new questions?
5. Could we use new technologies (such as GPT-4) to explore the limits of the model, and possibly extend it? What are the different ways in which we could do so?
6. What could be interesting/ creative empirical contexts to test propositions from the model we develop? For instance, Csaszar (2012) uses the context of mutual fund teams to test the Sah and Stiglitz model.

Before the hackathon, I strongly recommend that you read Sah and Stiglitz (1988) and understand the key moving parts and starting assumptions of the model. Carefully think about the design choices, external validity and behavioral plausibility. In your opinion, what does the model fail to explain? What changes would you incorporate?

REFERENCES

Csaszar, F. A. (2012a). An Efficient Frontier in Organization Design: Organizational Structure as a Determinant of Exploration and Exploitation. *Organization Science*, *24*(4), 1083–1101. https://doi.org/10.1287/orsc.1120.0784

Csaszar, F. A. (2012b). Organizational structure as a determinant of performance: Evidence from mutual funds. *Strategic Management Journal*, *33*(6), 611–632. https://doi.org/10.1002/smj.1969

Csaszar, F. A., & Eggers, J. P. (2013). Organizational Decision Making: An Information Aggregation View. *Management Science*, *59*(10), 2257–2277. https://doi.org/10.1287/mnsc.1120.1698

Ketkar, H., & Workiewicz, M. (2022). Power to the people: The benefits and limits of employee self-selection in organizations. *Strategic Management Journal*, *43*(5), 935–963. https://doi.org/10.1002/smj.3349

Keum, D. D., & See, K. E. (2017). The Influence of Hierarchy on Idea Generation and Selection in the Innovation Process. *Organization Science*, *28*(4), 653–669. https://doi.org/10.1287/orsc.2017.1142

Piezunka, H., & Schilke, O. (2023). The Dual Function of Organizational Structure: Aggregating and Shaping Individuals' Votes. *Organization Science*, orsc.2023.1653. https://doi.org/10.1287/orsc.2023.1653

Sah, R. K., & Stiglitz, J. E. (1986). The Architecture of Economic Systems: Hierarchies and Polyarchies. *The American Economic Review*, *76*(4), 716–727.

AOM Hackathon
Organizational Design and Computational Models
Harsh Ketkar (Bocconi University)