Hand-out Behavioural Operations Management

WS 2023/2024, version: 11 September 2023

Please note: This document reflects our planning before the term started; it will **not** be updated regularly. For short-term changes regarding rooms or times, see Campus. Changes regarding the content will be discussed in class and, if appropriate, communicated via Ilias.

Technicalities

One semester course, taught every second semester in the winter term.

Six credit points; on average, four contact hours per week. Taught in English.

Course coordinator and lecturer: Prof Dr Andreas Größler; tutorials: Julian Wiesner and Julia Horn

Part of the MSc study programme in (technically oriented) business administration.

Learning objectives

After successfully finishing the course, students can:

- name and identify managerial decision-making biases on the individual and group level;
- discuss relevant experiments in the behavioural operations management literature;
- understand and evaluate improvement guidelines for operations' decision-making;
- evaluate experiments in the realm of dynamic decision making.

Content

The course discusses managerial decision-making, cognition, and biases from an operations point of view, i.e. not only decision-making in high-level management teams are considered but also decision-making on the shop floor. The effects of behavioural factors on organisational value creation processes are in the centre of interest. Experiments on the topic are presented. Students learn about simple experiments to investigate dynamic decision-making.

Timetable

Lectures will take place on Mondays (as indicated in the timetable) at 3:45 pm in lecture hall **M 17.91**.

Date	**Topic**	**Reading assignment**
Conceptual and methodological foundations		
23/10/2023	Introduction to department and course; foundations of behavioural operations management	Bendoly et al., 2015, ch. 1
30/10/2023	Laboratory and field experiments as primary investigation methods	Bendoly et al., 2015, ch. 2
06/11/2023	Agent-based simulation to explore decision-making and behaviour	Wilensky&Rand, 2015, ch. 1

Decision-making and behaviour in systems		
13/11/2023	Constraints and variability: design and effects of production lines and queuing systems	Gupta&Boyd, 2008
20/11/2023	Randomness and deterministic chaos in operations performance	Franco-Santos& Otley, 2018
27/11/2023	Complexity: adapting operations strategies and endogenous demand	Huang&Liu, 2015
Individual decisions and behaviour		
04/12/2023	Cognition: the Newsvendor task and other inventory settings	Schweitzer&Cachon, 2000
11/12/2023	Intuition: demand forecasting, problem-solving, and entrepreneurship	Belvedere&Goodwin, 2017
18/12/2023	Personality: controlling complex inventory systems and "positive" psychology	Strohhecker&Größler, 2013
Nested decisions and behaviour		
08/01/2024	Group decision-making, e. g. in improvement projects	Riccobono et al., 2016
15/01/2024	Fairness and trust: management of supply networks	Jokela&Söderman, 2017
22/01/2024	Societal and cultural embedding of operations, sustainability	Price&Sun, 2017
Interventions and conclusion		
29/01/2024	*Guest lecture:* *Dr Ivan Đula, Teaching and Learning with Intelligent Systems, University of Stuttgart*	
05/02/2024	Change management and organizational interventions; outlook	Bendoly et al., 2015, ch. 19

Please read the chapter/article indicated *before* the lecture.

Plan of tutorials

Tutorials will take place on Mondays (as indicated in the timetable) at 11:30 am in lecture hall **M 17.24**.

Date	**Topic**	**Laptop needed?**
30/10/2023	Stanford Prison Experiment (Experiments) L2	No
06/11/2023	Netlogo (ABM) L3	Yes
13/11/2023	Jewelry restoration (Constraints) L4	No
20/11/2023	Statapult competition (Randomness) L5	No
27/11/2023	Furniture manufacturing case (Complexity) L6	No
04/12/2023	Experience the Newsvendor (Cognition) L7	Yes
11/12/2023	Five Easy Pieces (Problem-solving) L8	No
18/12/2023	Individual Differences Tests (Personality) L9	No
08/01/2024	Stickle Bricks production line (Group DM) L10	No
15/01/2024	Coffee value chain (Fairness) L11	Yes
22/01/2024	Fish Banks Game (Societal and cultural embedding) L12	No
29/01/2024	Q&A	No

Examination

Assessment will be carried out by means of a written exam. In total, 50% of all points are necessary to pass the course with 6 credit points. The content of the exam comprises all topics discussed in class or in

the required reading assignments (see timetable). Participating in the tutorials is expected from all students and at least one exam question will cover a topic from the tutorials.

Mandatory literature

Belvedere, V., P. Goodwin (2017): The influence of product involvement and emotion on short-term product demand forecasting. *International Journal of Forecasting* **33**(3), 652–661.

Bendoly, E., W. van Wezel, D.G. Bachrach (eds.)(2015): *Handbook of Behavioral Operations Management*, Oxford University [chs. 1, 2, 19].

Franco-Santos, M., D. Otley (2018): Reviewing and theorizing the unintended consequences of performance management systems. *International Journal of Management Reviews* **20**(3), 696–730.

Gupta, M.C., L.H. Boyd (2008): Theory of Constraints: a theory for operations management. *International Journal of Operations & Production Management* **28**(10), 991–1012.

Huang, T., Q. Liu (2015). Strategic Capacity Management when Customers have Boundedly Rational Expectations. *Production and Operations Management* **24**(12), 867–879.

Jokela, P., A. Söderman (2017): Re-examining the link between fairness and commitment in buyer-supplier relationships. *Journal of Purchasing and Supply Management* **23**(4), 268–279.

Price, J. M., W. Sun (2017): Doing good and doing bad: The impact of corporate social responsibility and irresponsibility on firm performance. *Journal of Business Research* **80**, 82–97.

Riccobono, F., M. Bruccoleri, A. Größler (2016): Groupthink and Project Performance: the influence of personal traits and interpersonal ties. *Production and Operations Management* **25**(4), 609–629.

Schweitzer, M.E., G.P. Cachon (2000): Decision Bias in the Newsvendor Problem with a Known Demand Distribution: Experimental evidence. *Management Science* **46**(3), 404–420.

Strohhecker, J. and A. Größler (2013): Do Personal Traits Influence Inventory Management Performance? – The case of intelligence, personality, interest and knowledge. International Journal of Production Economics 142(3), 37–50.

Wilensky, U. and W. Rand (2015): An Introduction to Agend-based Modeling, MIT Press [ch. 1].

Additional Literature

Baines, T., S. Mason, P.O. Siebers, J. Ladbrook (2004): Humans: the missing link in manufacturing simulation? *Simulation Modelling Practice and Theory* **12**(7), 515–526.

Bhattacharya, C.B., S. Sen (2004): Doing Better at Doing Good: When, why, and how consumers respond to corporate social initiatives. California Management Review 47(1), 9–24.

Boudreau, J., W. Hopp, J.O. McClain, L.J. Thomas (2003): On the Interface between Operations and Human Resources Management. *Manufacturing & Service Operations Management* **5**(3), 179–202.

Donohue, K., E. Katok, S. Leider (eds.)(2019): *The Handbook of Behavioral Operations*, Wiley.

Forsythe, R., J.L. Horowitz, N.E. Savin, M. Sefton (1994). Fairness in Simple Bargaining Experiments. Games and Economic Behavior 6, 347–369.

Frederick, S. (2005): Cognitive Reflection and Decision Making. Journal of Economic Perspectives 19(4), 25–42.

Jackson, S., J.R. Wilson, B.L. MacCarthy (2004): A New Model of Scheduling in Manufacturing: Tasks, roles, and monitoring. Human factors 46(3), 533–550.

Langer, E.J. (1975): The Illusion of Control. Journal of Personality and Social Psychology 32(2), 311–328.

Pasin, F., H. Giroux (2011): The Impact of a Simulation Game on Operations Management Education. *Computers & Education* **57**(1), 1240–1254.

Zuffo, R.G. (2011): Taylor is Dead, Hurray Taylor! The" Human Factor" in Scientific Management: Between ethics, scientific psychology and common sense. *Journal of Business and Management* **17**(1), 23–41.