

# Determining Business Model Operations using Business Processes

**Citation for published version (APA):**

Lara Machado, P., van de Ven, M., Athanasopoulou, A., Aysolmaz, B., & Türetken, O. (2022). *Determining Business Model Operations using Business Processes: a Systematic Review*. Business Model Conference 2022, Lille, France.

**Document license:**

CC BY

**Document status and date:**

Published: 23/06/2022

**Document Version:**

Accepted manuscript including changes made at the peer-review stage

**Please check the document version of this publication:**

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

**General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.tue.nl/taverne](http://www.tue.nl/taverne)

**Take down policy**

If you believe that this document breaches copyright please contact us at:

[openaccess@tue.nl](mailto:openaccess@tue.nl)

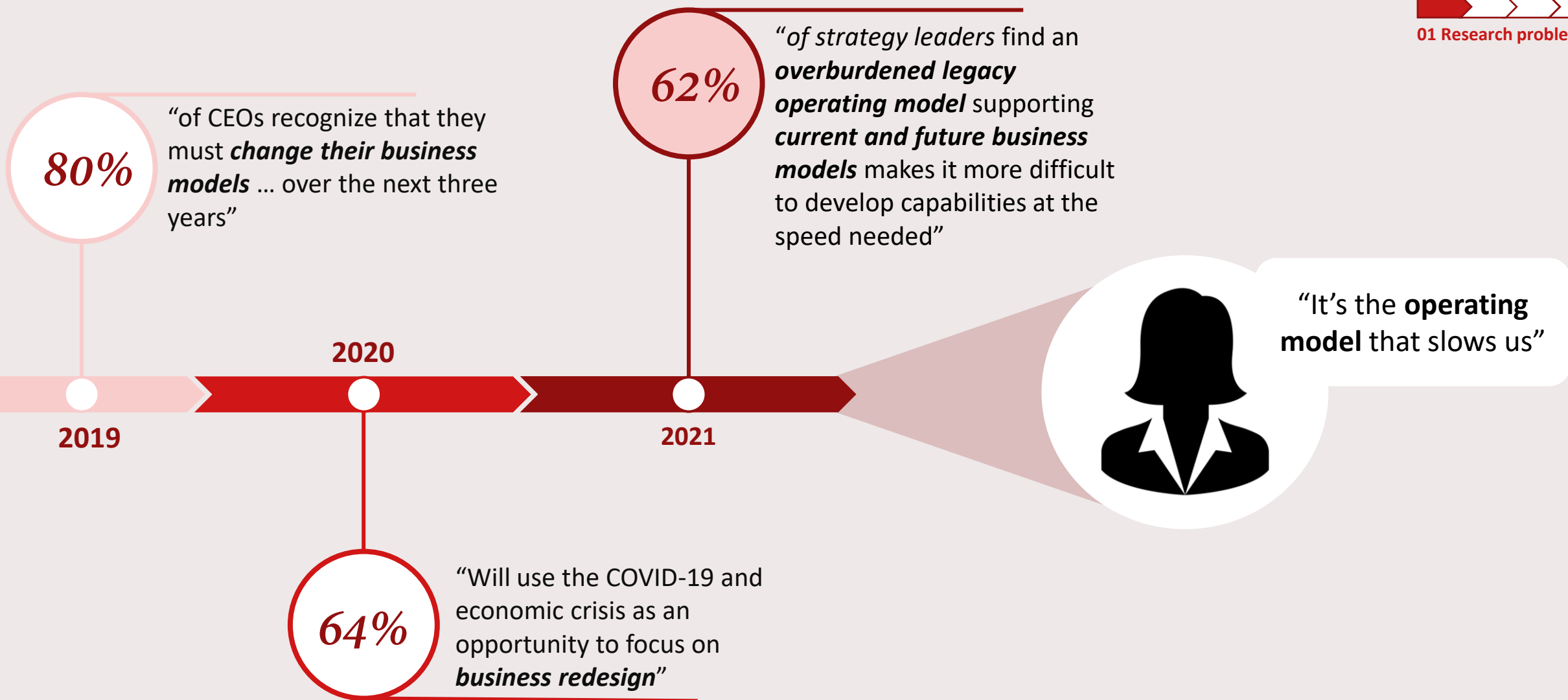
providing details and we will investigate your claim.



# Determining Business Model Operations using Business Processes: a Systematic Review

BUSINESS MODEL CONFERENCE, 22-23 JUNE 2022

Paola Lara Machado, Montijn van de Ven, Alexia Athanasopoulou, Banu Aysolmaz, Oktay Türetken



Source: Gartner surveys (2019), (2021), (2022)

# Research overview

## Issues



- **Risk of failure & implementation inefficiency** when adopting business model innovations
- Practitioners **lack guidelines** that provide support **during the implementation** and **operation**



- **Focus** on the early **ideation & design phase** of the business model innovation process
- Knowledge about the **implementation** of the business model is **scarce**

## Contributions

- Repository of **methods** that can be used during the **implementation** of a business model

- **Overview of business model implementation** through the design and execution of **business processes**
- **Future research avenues to develop methods** related to business model implementation using business processes

Sources: Rumble and Mangematin (2015), Solaimani et al. (2018), Suratno et al. (2018), Geissdoerfer et al. (2018)

# AGENDA

**1**

**Introduction**

**2**

**Research Process**

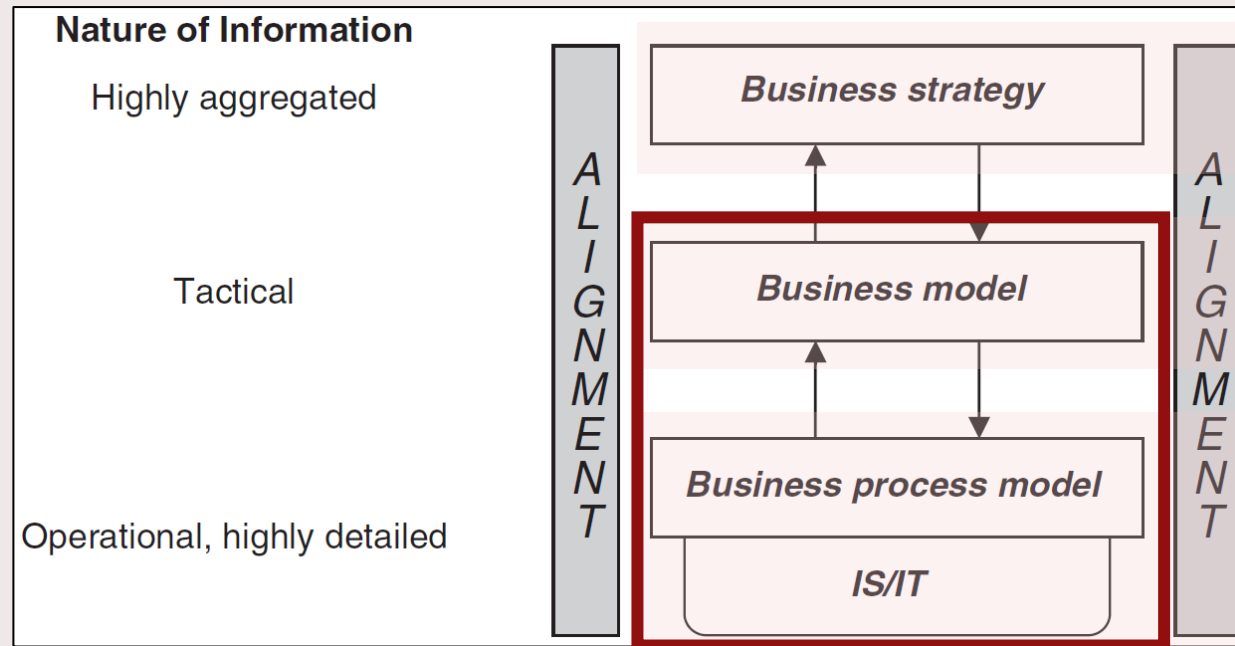
**3**

**Results**

**4**

**Research Directions and  
Conclusions**

# What is the relationship between business models and business processes?



**how** a company *positions* itself in a certain industry

**what** is offered by **who**

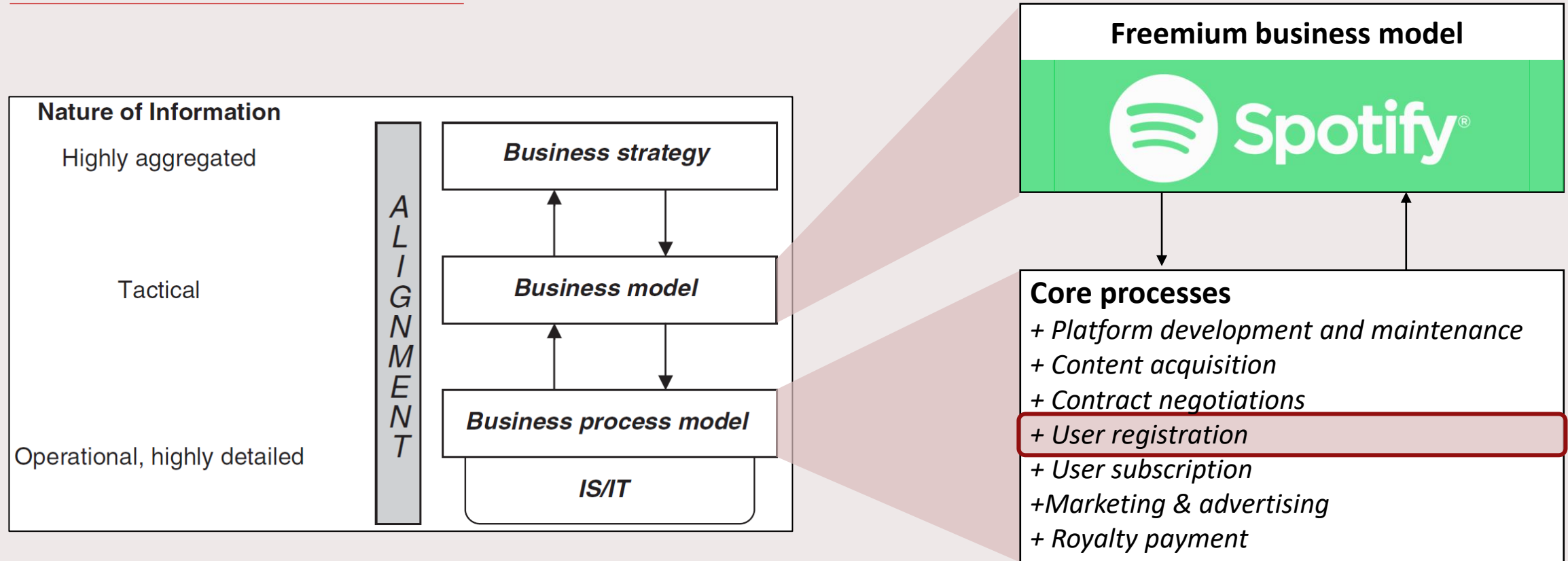
- Specific configuration of BM elements
- Resource configuration for BM operations

**how** the offering is operationally fulfilled

- Definition of business processes and operational infrastructure
- Execution of business processes

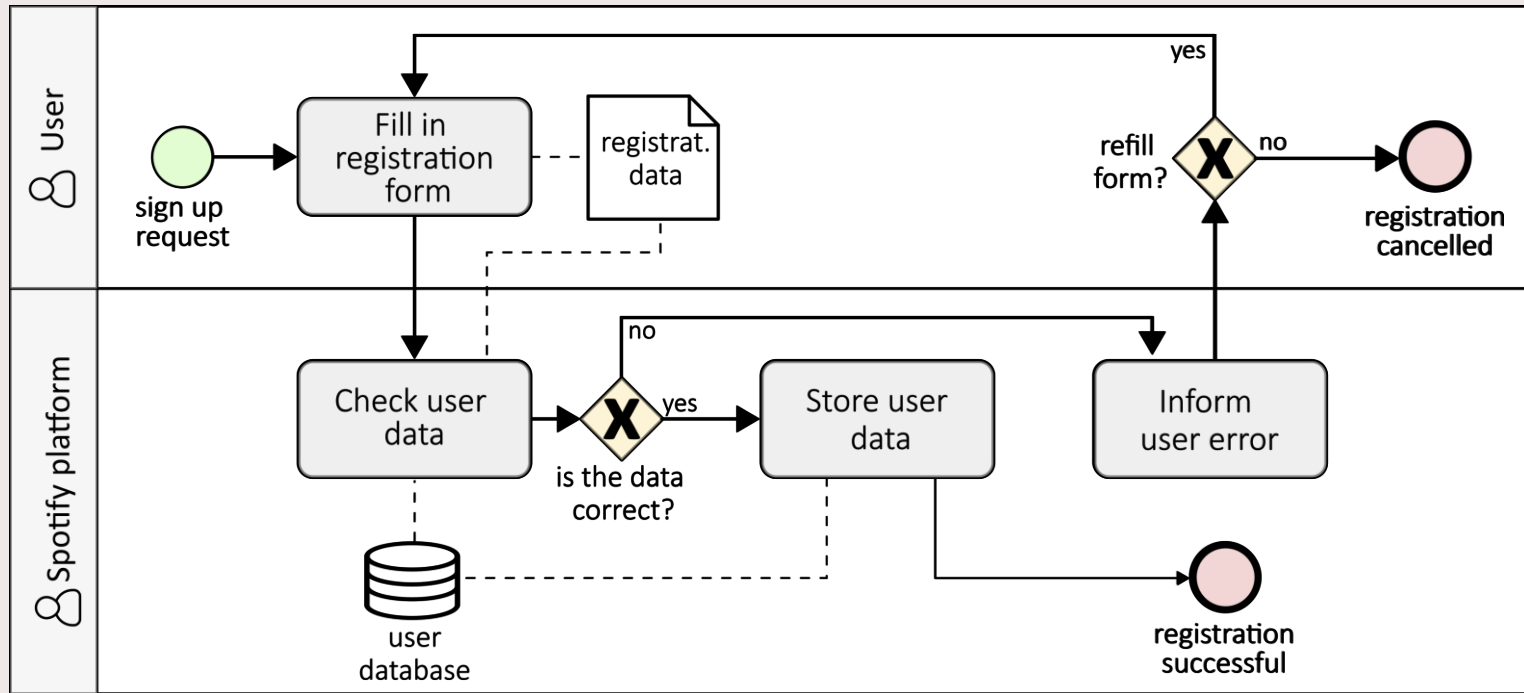
Sources: Gordijn et al. (2000), Osterwalder et al. (2005), Al-Debei & Avison (2010), Globocnik et al. (2020)

# What is the relationship between business models and business processes?



# What is a business process?

## User registration



- 1 Which **activities** are performed?  
*(Functional perspective)*
- 2 How are the activities **sequenced**?  
*(Behavioral perspective)*
- 3 What **data and artifacts** are produced?  
*(Informational perspective)*
- 4 Which **participants, roles, and systems**?  
*(Organizational perspective)*

Sources: Curtis et al. (1992), Dumas et al. (2018)

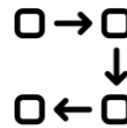


# Research objective



## Objective

To **provide an overview** of the current state of knowledge regarding the **methods that bridge business models and business processes**



## Research process

### Systematic literature review (SLR)

- following guidelines by Okoli (2015) and Webster and Watson (2002)



## Results

### Classification of methods:

- 1 Method characteristics
- 2 Use in the business model management lifecycle

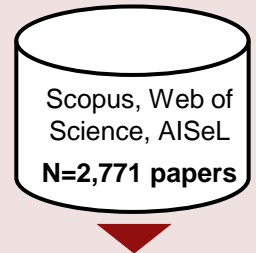
# Research process

## 1 Literature search

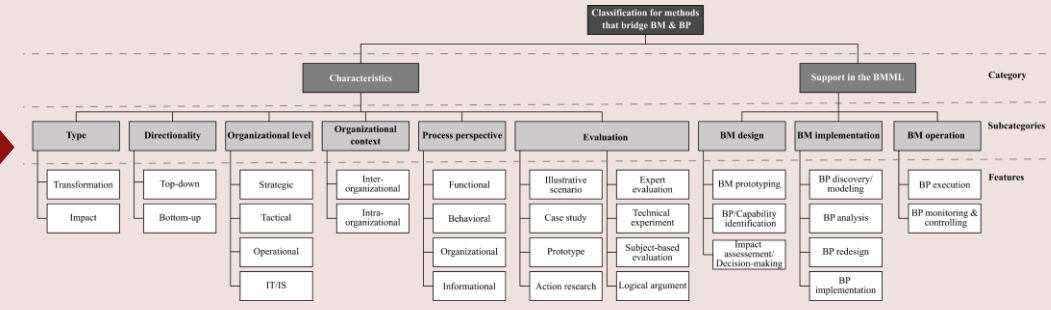
## 2 Development of classification model

## 3 Classification of studies

TITLE-ABS-KEY( "business model\*" AND "business process\*")



34 papers containing methods that bridge business models and business processes



Study	Type	Direction	Organizational level	Characteristics				Evaluation				Support in the BMMIL cycle																
				Process	Process	Process	Process	BM design	BM implementation	BM operation																		
M1 (Anderson et al., 2006)	Transformation	Impact	Top-down	Strategic	Inter-organizational	Functional	Illustrative scenario	Expert evaluation	BM prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M2 (Azam et al., 2007)	Transformation	Impact	Bottom-up	Tactical	Intra-organizational	Behavioral	Case study	Technical experiment	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M3 (Bergholz et al., 2005)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M4 (Bergholz et al., 2002)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M5 (Bodenstaff et al., 2007)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M6 (Boshuier et al., 2017)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M7 (Bracchi, 2010)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M8 (de Castro et al., 2011)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M9 (de Valentin et al., 2015)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M10 (de Valentin et al., 2012)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M11 (Elschnor and Pflaum, 2006)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M12 (Favouri and Loucopoulos, 2016)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M13 (Favouri and Loucopoulos, 2016)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M14 (Hofmeier et al., 2012)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M15 (Hofmeier et al., 2009)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M16 (Hofmeier et al., 2012)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M17 (Hofmeier and Grottel, 2015)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M18 (Hofmeier et al., 2009)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M19 (Janssen et al., 2001)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M20 (Khalil et al., 2009)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M21 (O'Donnell, 2005)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M22 (Pijpers and Goedje, 2007)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M23 (Rohde et al., 2017)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M24 (Rohde et al., 2014)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M25 (Sillado et al., 2014)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M26 (Siller and Bissman, 2012)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M27 (Schuster et al., 2010)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M28 (da Silva Torres et al., 2021)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M29 (Suzuki et al., 2016)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M30 (Weigand et al., 2007)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M31 (Wieringa et al., 2008)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M32 (Wieringa and Grottel, 2005)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M33 (Zanoni et al., 2016)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
M34 (Zhu and Wambacher, 2005)	Transformation	Impact	Strategic	Operational	Inter-organizational	Organizational	Case study	Subject-based evaluation	BP prototyping	BP discovery/modelling	BP execution	BP monitoring & controlling																
Total = 34 studies	14	28	5	4	24	34	9	22	15	20	30	22	19	8	4	3	2	1	0	17	7	13	21	1	23	8	0	10

Sources: Webster and Watson (2002), Wohlin (2014), Okoli (2015)

# Classification results

## Method characteristics

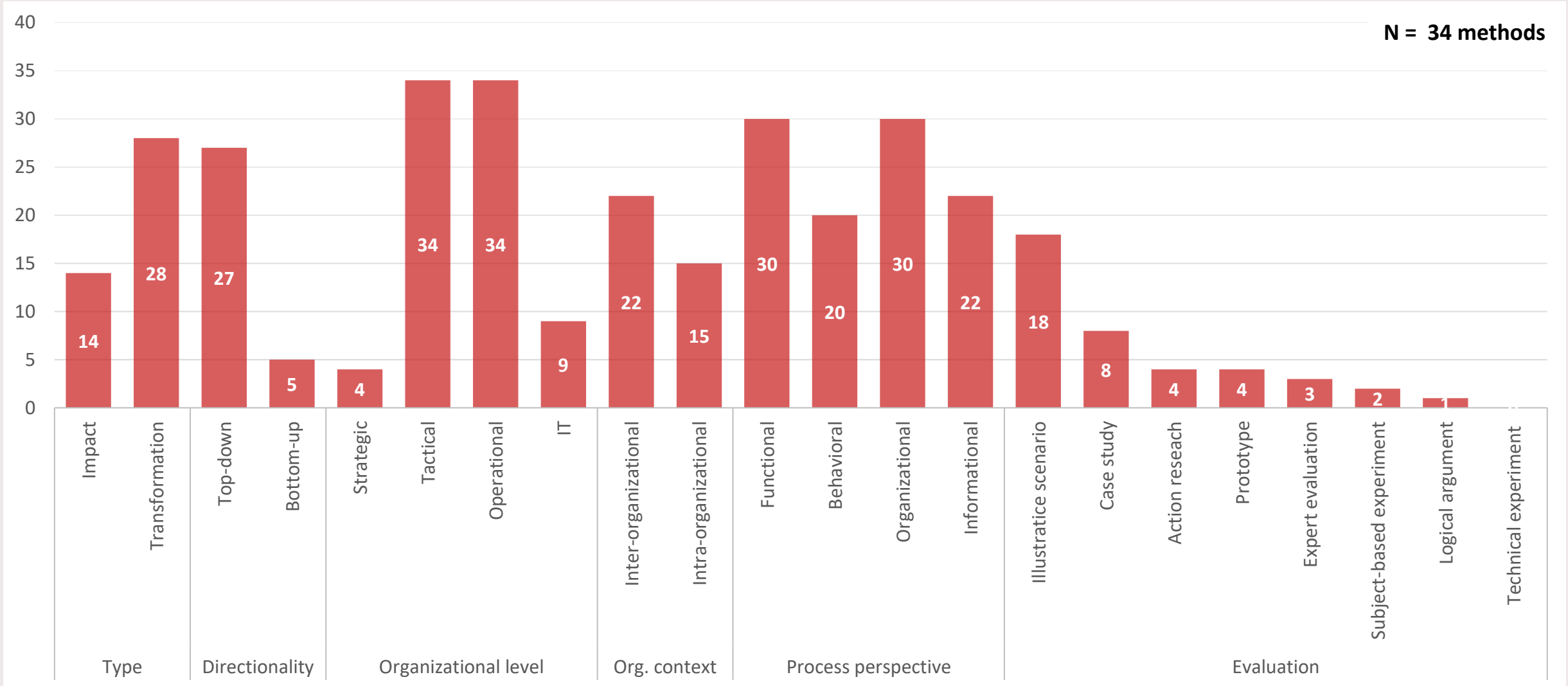


03 Results

(+) Focus on business processes	(-) Very few methods that use business processes as source of analysis for assessing the effect on business models	(+) Focus on value added	(-) Focus on inter capabilities required to operate the system	(+) Focus on which activities and participants/roles are needed	(-) Focus on how activities can be sequenced and identification of information elements
---------------------------------	--------------------------------------------------------------------------------------------------------------------	--------------------------	----------------------------------------------------------------	-----------------------------------------------------------------	-----------------------------------------------------------------------------------------

# Classification results

## Method characteristics

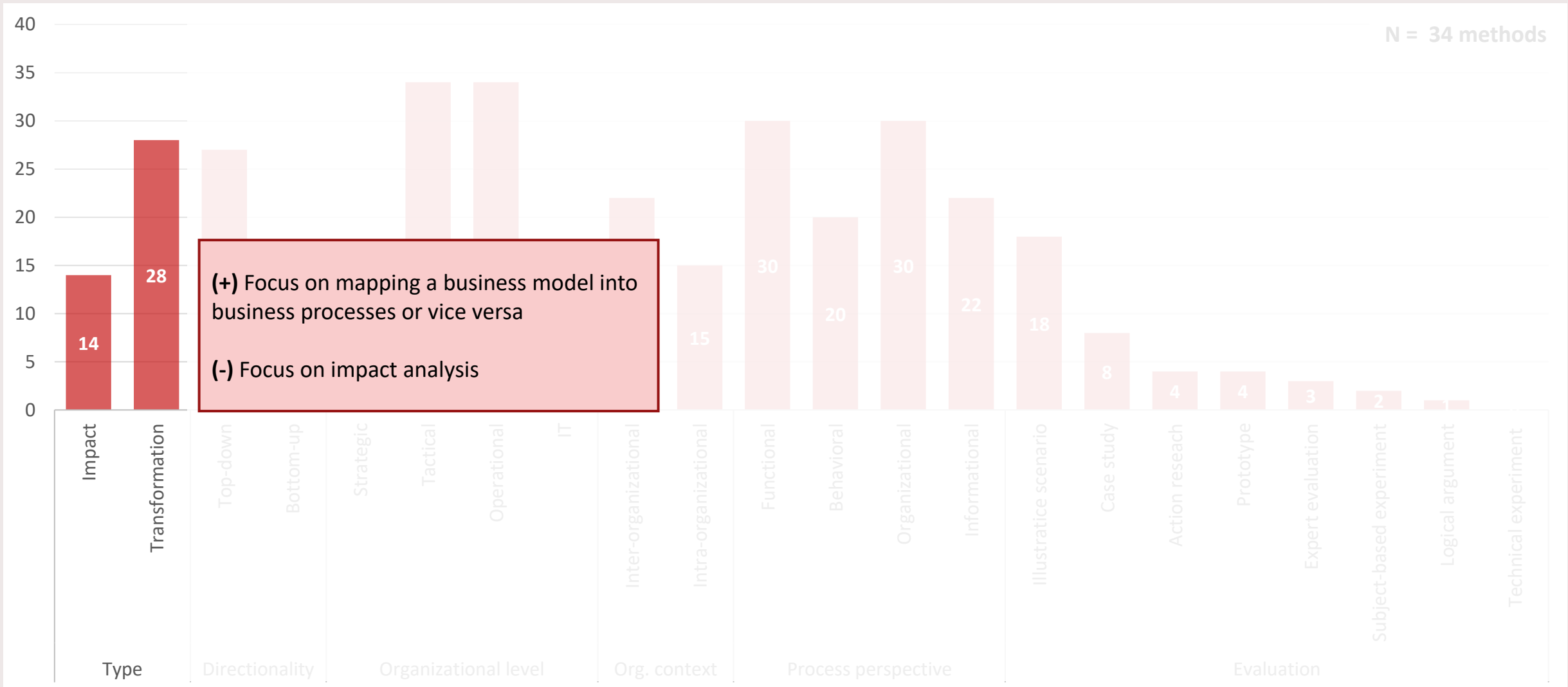


# Classification results



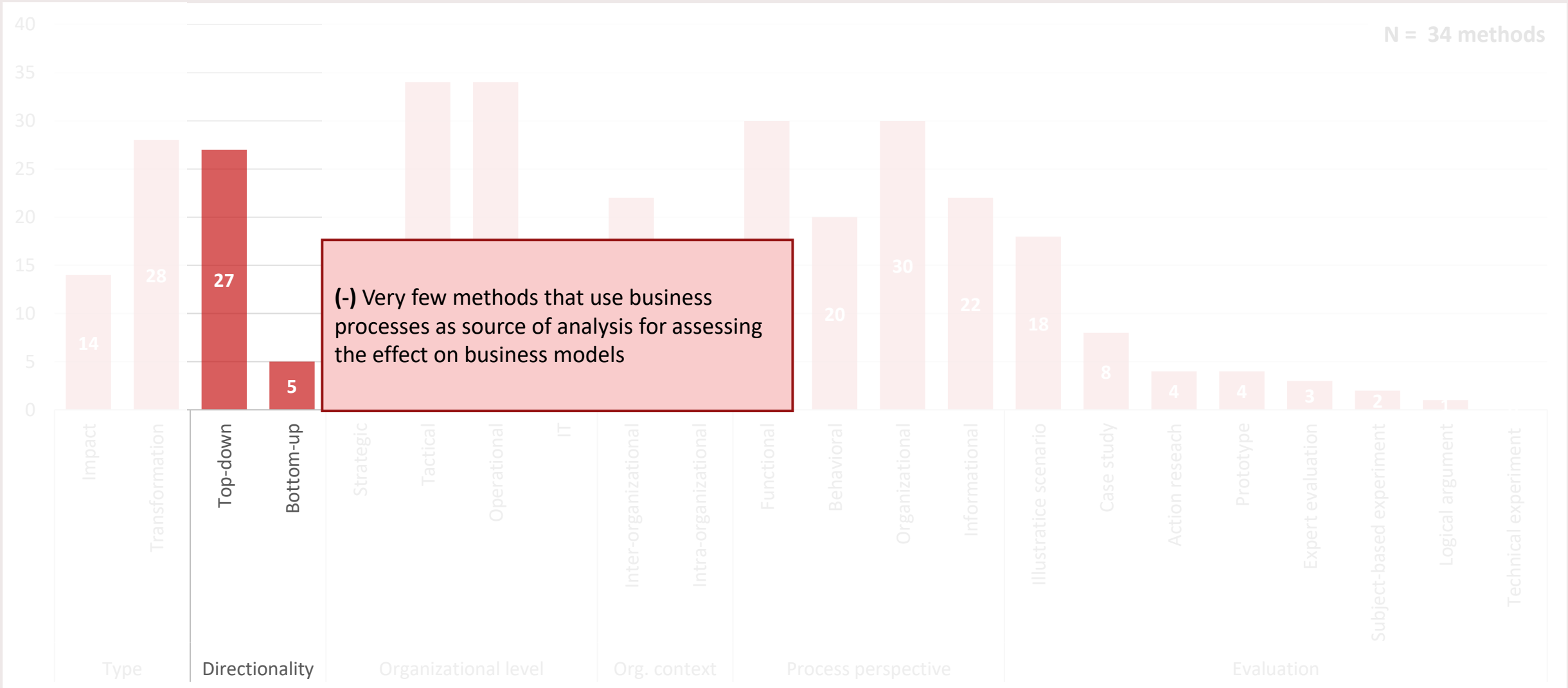
03 Results

## Method characteristics



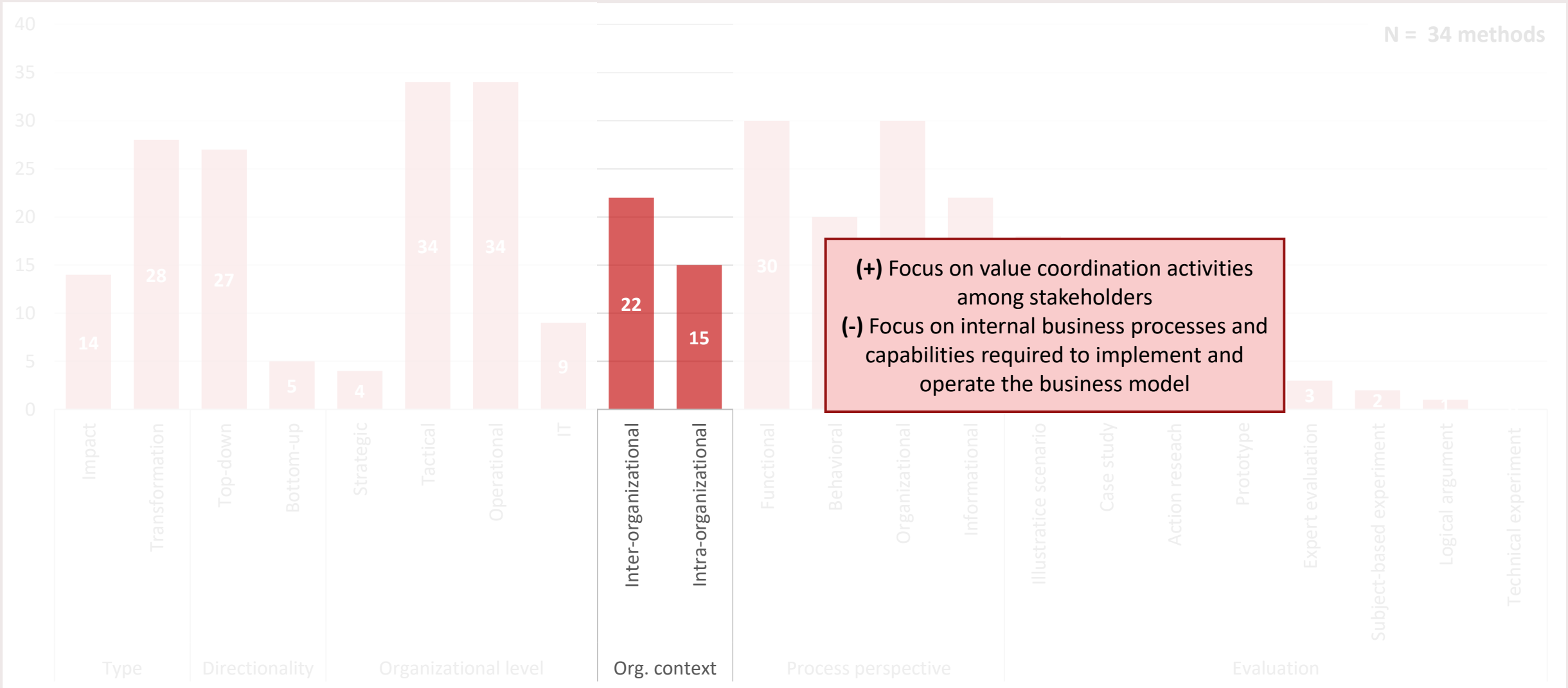
# Classification results

## Method characteristics



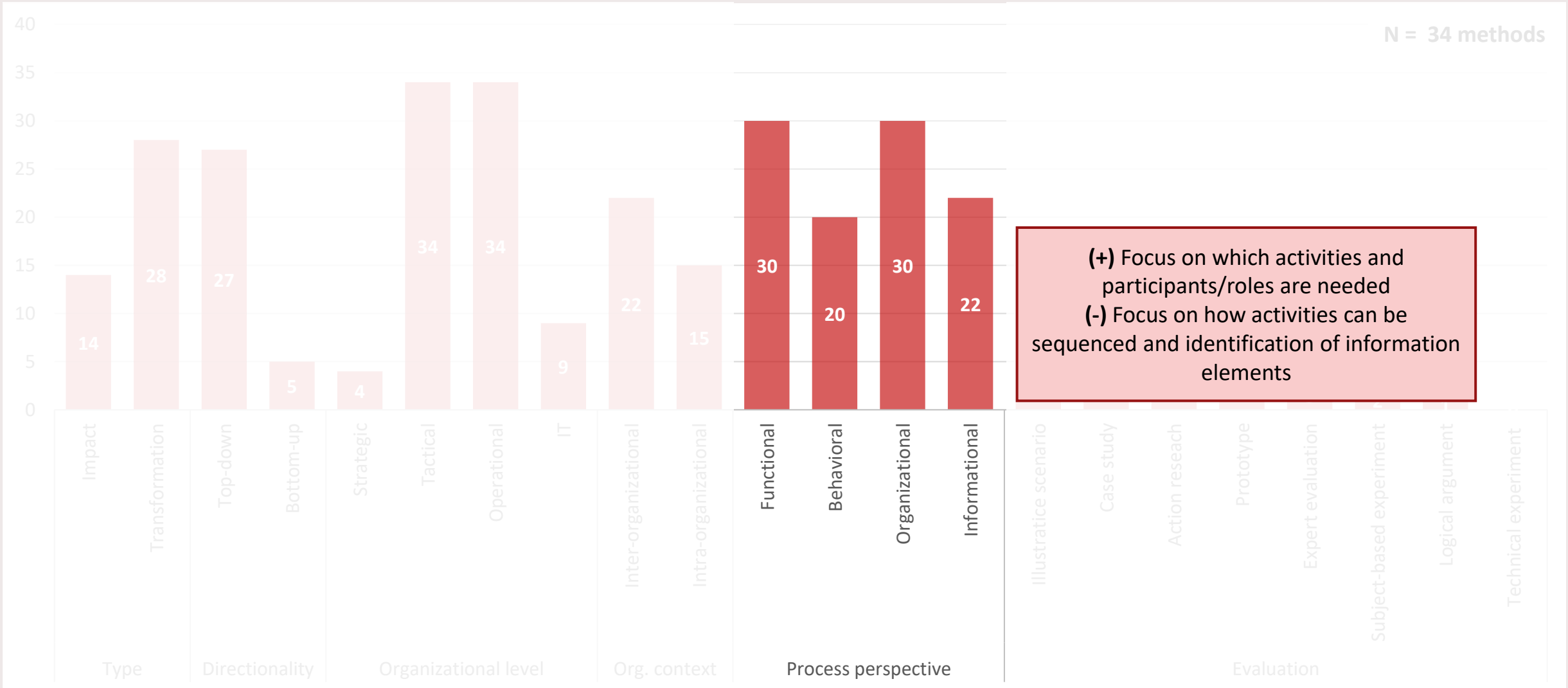
# Classification results

## Method characteristics



# Classification results

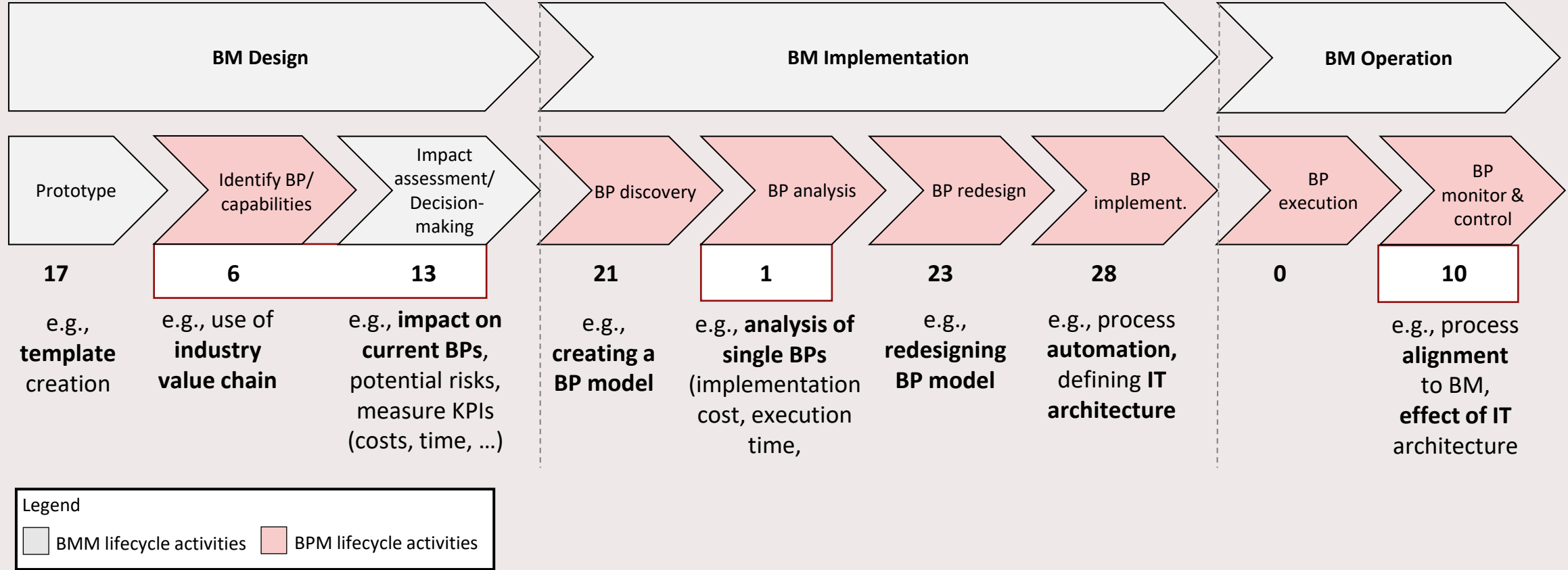
## Method characteristics





# Classification results

## Support in the BMM lifecycle



Sources: Wirtz (2020), Dumas et al. (2018)



- **Develop structured methods** that provide guidelines for *identifying processes and capabilities* to design and implement a business model



- Develop structured methods** that focus on:
- Both **inter and intra organizational** processes
  - **Analyze impact** during the design and implementation of the business model (e.g., risk, costs, and benefits)
  - **All process perspectives**



- **Evaluating methods** to prove their effectiveness through rigorous evaluation techniques

## Summary

- We **systematically reviewed the academic literature** to identify methods that bridge business models and business processes
- We categorize the methods based on two main dimensions: characteristics and support in the business model management lifecycle
- The repository of **methods** that can be used during the **implementation** of a business model
  - The **specific context** and **needs of the organization** need to be considered when choosing the appropriate method

## Limitations

- **A certain degree of subjectivity** is involved in selecting papers and categorizing them
  - Included multiple authors in process
  - Developed coding protocol
  - Measured degree of agreement between authors (IRR: 90%; CK: 0.675)

# Thank you!

**Email:** [p.lara.machado@tue.nl](mailto:p.lara.machado@tue.nl)

# References

---

- Al-Debei M, Avison D (2010) Developing a unified framework of the business model concept. *European Journal of Information Systems* 19:359–376. <https://doi.org/10.1057/ejis.2010.21>
- Curtis, B., Kellner, M. I., & Over, J. (1992). Process modeling. *Communications of the ACM*, 35(9), 75-90.
- Dumas M, la Rosa M, Mendling J, Reijers HA (2018) *Fundamentals of business process management: Second Edition*. Springer Berlin Heidelberg
- Geissdoerfer M, Vladimirova D, Evans S (2018) Sustainable business model innovation: A review. *Journal of Cleaner Production* 198:401–416. <https://doi.org/10.1016/j.jclepro.2018.06.240>
- Globocnik, D., Faullant, R., & Parastuty, Z. (2020). Bridging strategic planning and business model management—A formal control framework to manage business model portfolios and dynamics. *European Management Journal*, 38(2), 231-243.
- Gordijn J, Akkermans H, van Vliet H (2000) Business Modelling Is Not Process Modelling. In: ER 2000. Springer, Berlin, Heidelberg, pp 40–51
- Howard C.(2021) 2021 CIO Agenda: A U.S. Perspective. Retrieved from *Gartner Research Portal*
- Kopcho J., Hill J., & Nielsen T. (2022) Infographic: Grow Business Through Modular Redesign of the Enterprise Operating Model. Retrieved from *Gartner Research Portal*
- Okoli, C. (2015). A guide to conducting a standalone systematic literature review. *Communications of the Association for Information Systems*, 37(1), 43.
- Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the association for Information Systems*, 16(1), 1.
- Solaimani S, Heikkilä M, Bouwman H (2018) Business Model Implementation within Networked Enterprises: A Case Study on a Finnish Pharmaceutical Project. *European Management Review* 15:79–96. <https://doi.org/10.1111/EMRE.12124>
- Sun D. & Popkin J. (2019) Demistify ‘New’ Businesses Through Business Model Innovation. Retrieved from *Gartner Research Portal*
- Suratno B, Ozkan B, Turetken O, Grefen P (2018) A Method for Operationalizing Service-Dominant Business Models into Conceptual Process Models. In: Shishkov B (ed) *BMSD 2018*. Springer, Cham, pp 133–148
- Wirtz BW (2020) *Business Model Management*, 2nd edn. Springer, Cham
- Wohlin, C. (2014). Guidelines for snowballing in systematic literature studies and a replication in software engineering. In *Proceedings of the 18th international conference on evaluation and assessment in software engineering* (pp. 1-10).