Occurrence and influencing variables of knowledge barriers in knowledge-intense domains

Carolin A. Fiechter   **Christoph Kuderna**   **Eva-Maria Kern**

Chair for Knowledge Management and Business Process Engineering

University of the German Armed Forces in Munich

London, 2nd December 2009

Agenda

- **Background and intention of the study**
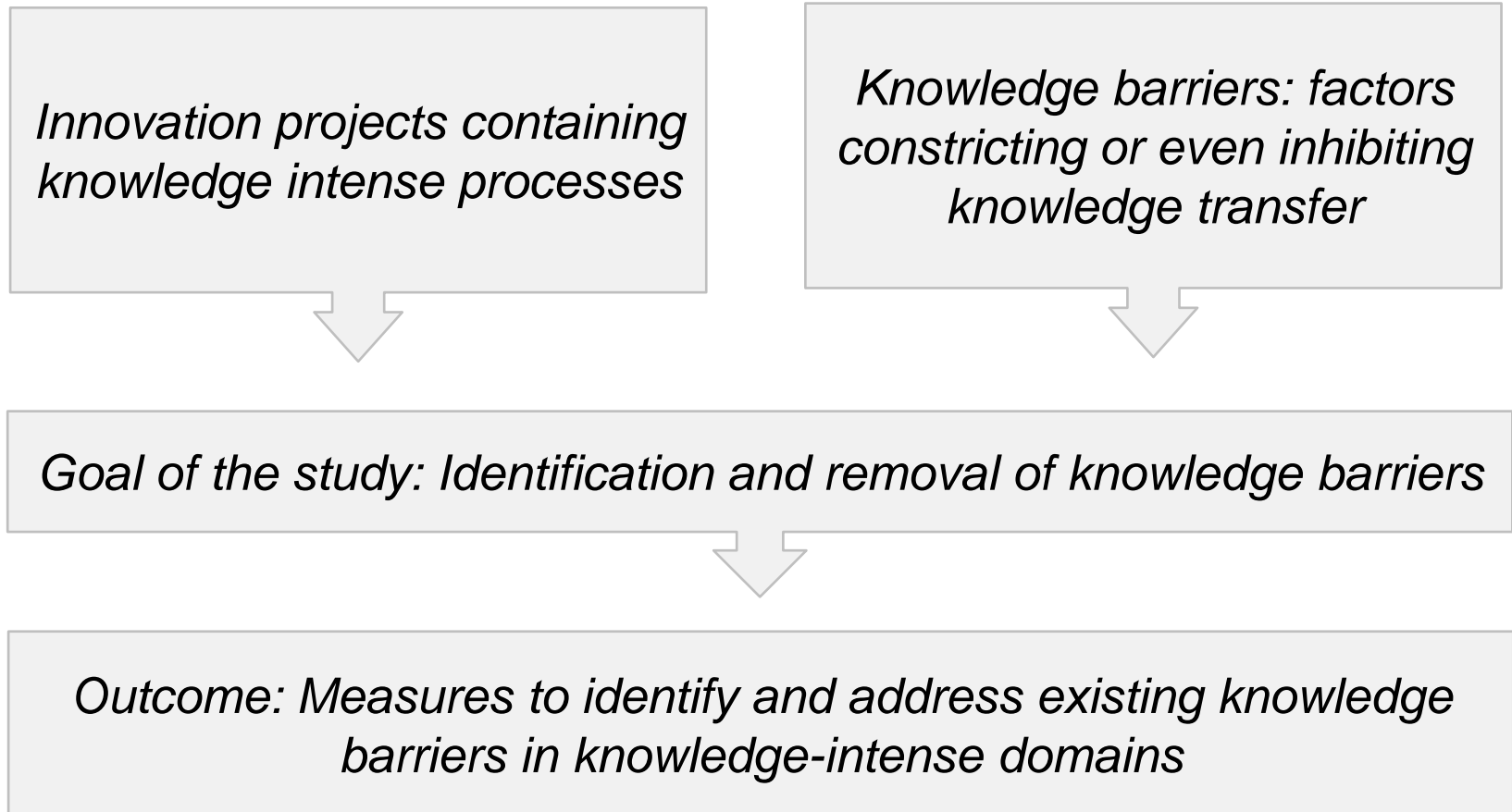
- **Study design**

- **Selected empirical results and conclusions**

- **Practical impacts and implications for further research**

1. Background and intention of the study (1)

■ Preceding study: Knowledge barriers in innovation projects

Innovation projects containing knowledge intense processes	*Knowledge barriers: factors constricting or even inhibiting knowledge transfer*

Goal of the study: Identification and removal of knowledge barriers

Outcome: Measures to identify and address existing knowledge barriers in knowledge-intense domains
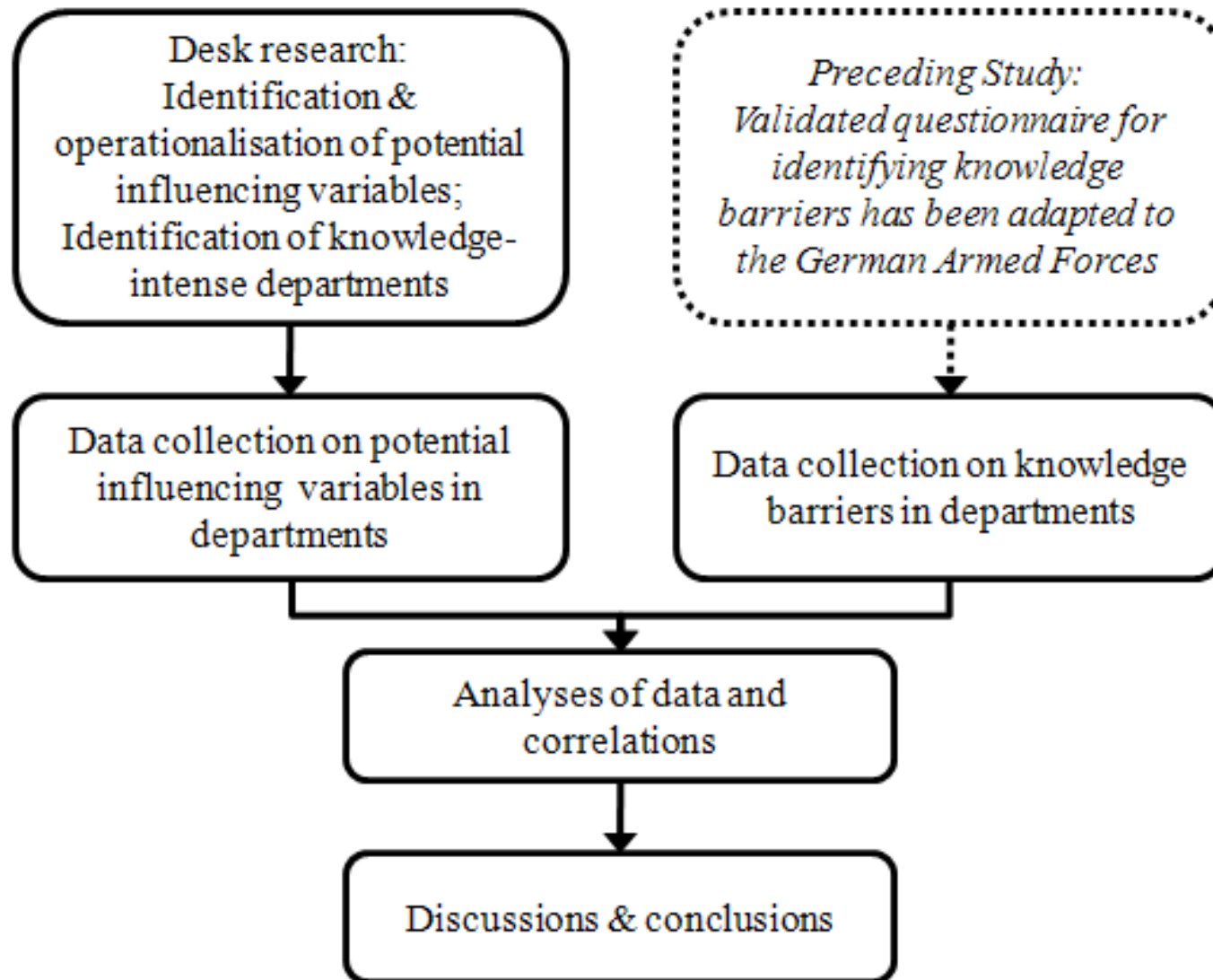
1. Background and intention of the study (2)

- Present study: Identification of variables influencing the occurrence of knowledge barriers

Influencing variables do not cause knowledge barriers directly, but shift the probability of their occurrence
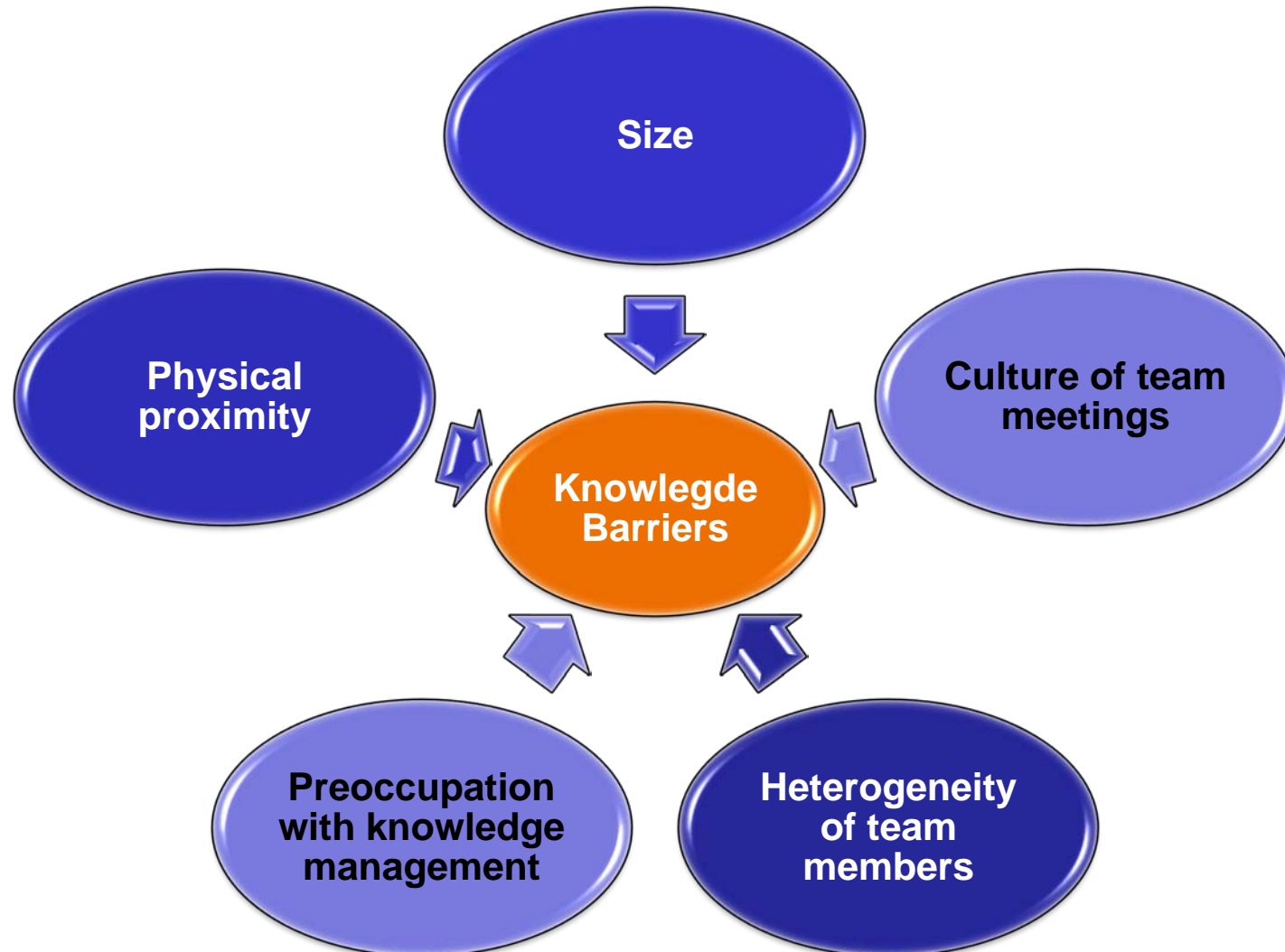
Goal of the study: Verifying the impact of theoretically derived influencing factors
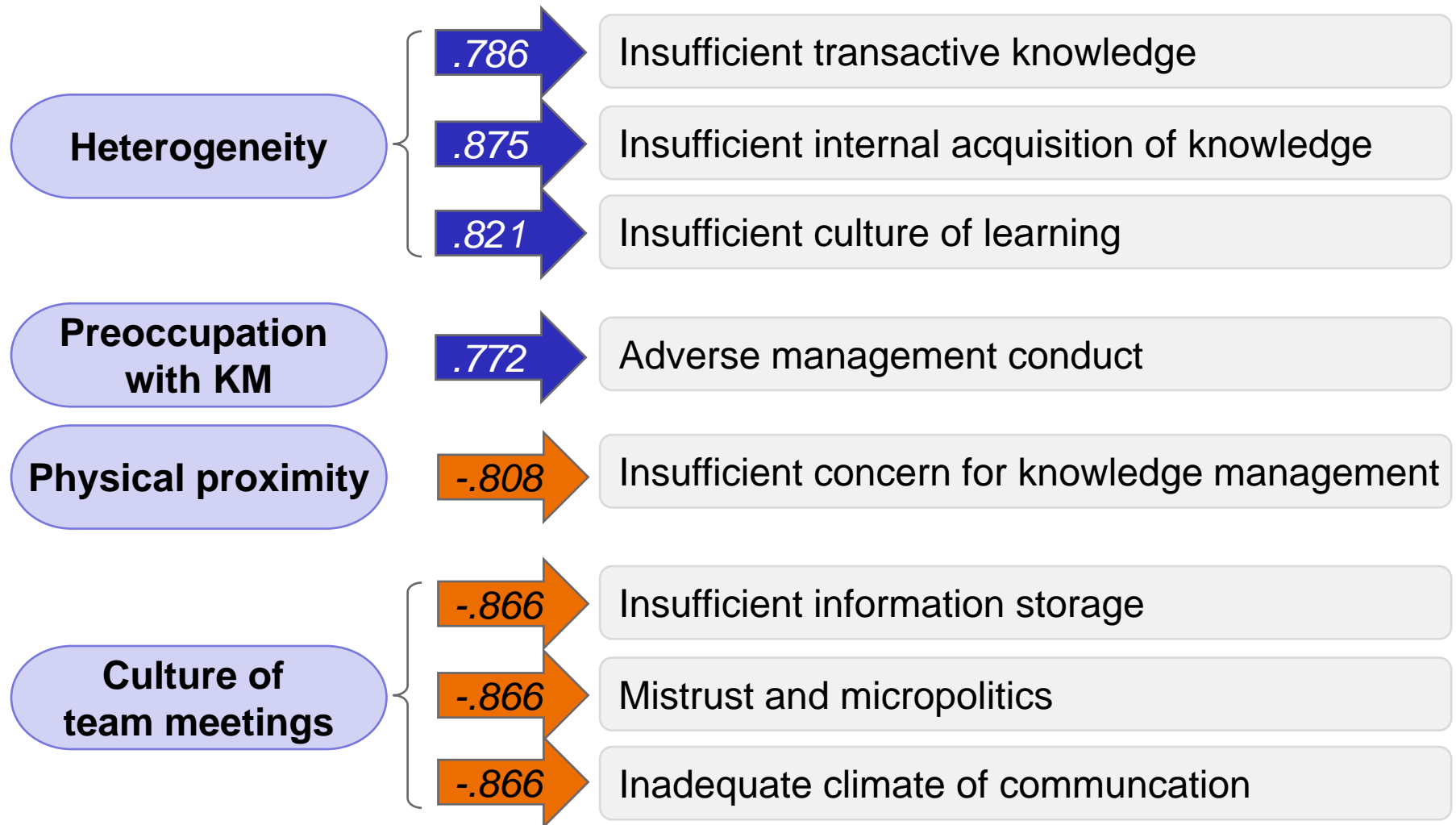
3. Selected empirical results and conclusions (1)

Heterogeneity

- **.786** → Insufficient transactive knowledge
- **.875** → Insufficient internal acquisition of knowledge
- **.821** → Insufficient culture of learning

Preoccupation with KM

- **.772** → Adverse management conduct

Physical proximity

- **-.808** → Insufficient concern for knowledge management

Culture of team meetings

- **-.866** → Insufficient information storage
- **-.866** → Mistrust and micropolitics
- **-.866** → Inadequate climate of communcation

Rank correlations (Spearman's Rho) between influencing variables and knowledge barriers on a 0.05 level of significance

Heterogeneity

.786 → Insufficient transactive knowledge

.875 → Insufficient internal acquisition of knowledge

.821 → Insufficient culture of learning

Preoccupation with KM

.772 ← Adverse management conduct

Physical proximity

-.808 → Insufficient concern for knowledge management

Culture of team meetings

-.866 ← Insufficient information storage

-.866 ← Mistrust and micropolitics

-.866 ← Inadequate climate of communcation
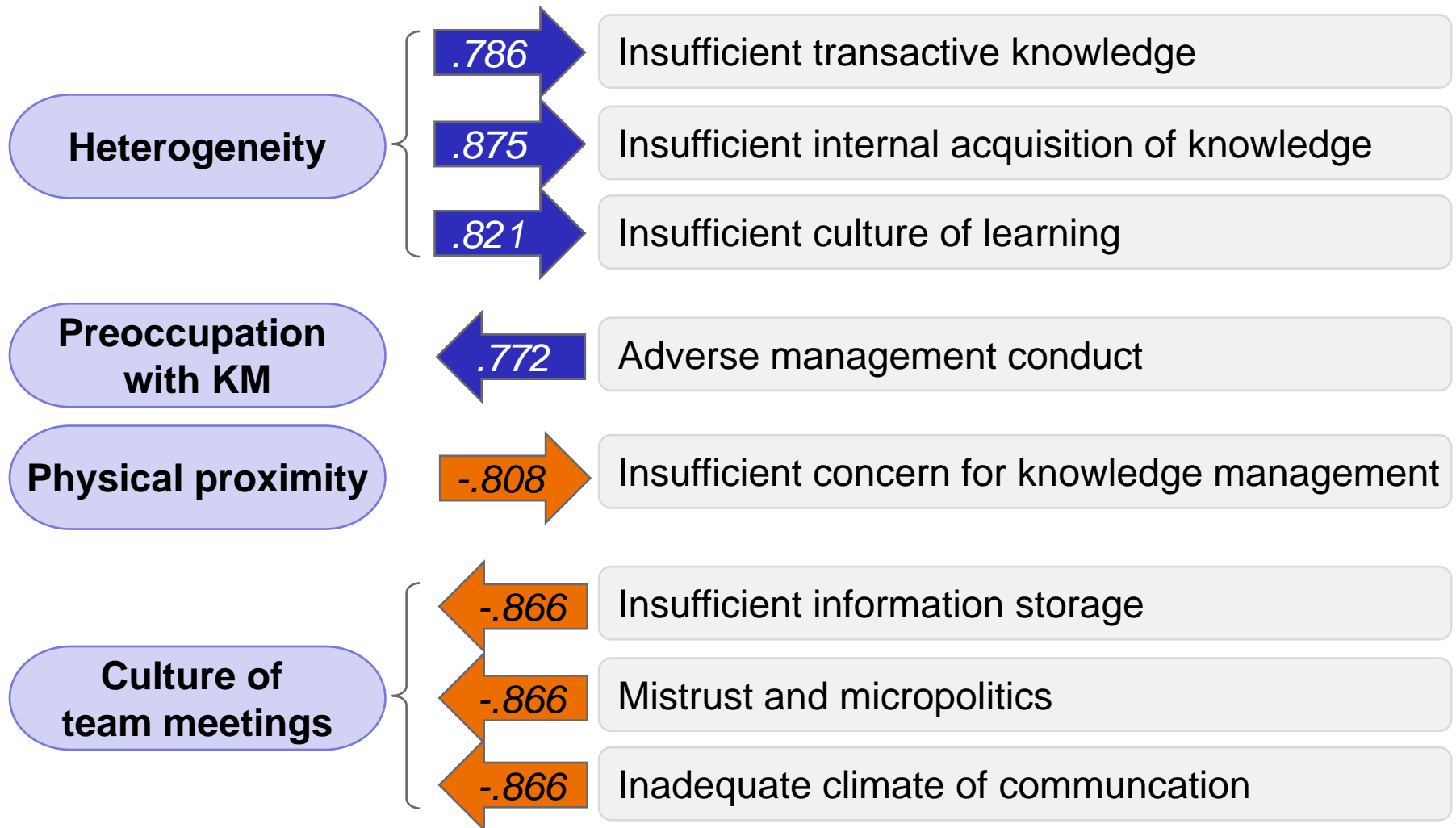
Main difficulty: attribution of causes and effects

- *Practical impacts:*

> Focus on **diversity of team members**
> to decrease the probability of knowledge barriers in innovation projects

> **Awareness for knowledge issues and knowledge management**
> may compensate unfavourable project preconditions

- *Implications for further research:*

> Use of a **systemic approach**

> Conduction of **longitudinal studies**

> Identification of **changes and interdependencies**
> in knowledge barriers and influencing variables

"We're drowning in information and starving for knowledge."

John Naisbitt

Backup: Study Design

Analysis of 7 departments of the German Armed Forces:

- Determining values for 15 knowledge barriers per department (based on data on 108 items)

- Translation of the values into ranks

- Collection of data on influencing factors per department

- Translation of the values into ranks

Backup: Knowledge barriers (ranks per department)

Department		A	B	C	D	E	F	G
# 1	Insufficient transactive knowledge	7	6	1	3	5	4	2
# 2	Loss of information	5	2	6	3	1	7	4
# 3	Insufficient internal acquisition of knowledge	6	3	1	2	7	5	4
# 4	Insufficient external acquisition of knowledge	7	5	6	2	3	1	4
# 5	Insufficient concern for knowledge management	5	7	4	2	6	1	3
# 6	Insufficient information storage	6	4	3	5	2	7	1
# 7	Being professionally blinkered / leaking awareness	7	5	1	6	4	2	3
# 8	Inadequate representation and misunderstandings	5	7	1	4	6	3	2
# 9	Mistrust and micropolitics	7	6	1	5	3	4	2
# 10	Inappropriate processes of handing over	6	5	7	3	4	1	2
# 11	Insufficient flow of information	7	4	5	3	6	1	2
# 12	Inadequate climate of communication	7	5	3	4	2	6	1
# 13	Insufficient culture of learning	6	7	1	2	5	4	3
# 14	Organisational culture of the department	7	5	2	6	4	1	3
# 15	Adverse management conduct	7	3	6	4	5	1	2
	Occurence of knowledge barriers: average rank	6,3	4,9	3,2	3,6	4,2	3,2	2,5
	Occurence of knowledge barriers: total rank	7	6	2,5	4	5	2,5	1

Backup: Correlations

Influencing variable	Knowledge barrier	Rho	Level of significance
Heterogeneity of the department personnel	#01 Insufficient transactive knowledge	0.786	0.036
Heterogeneity of the department personnel	#03 Insufficient internal acquisition of knowledge	0.857	0.014
Heterogeneity of the department personnel	#13 Insufficient culture of learning	0.821	0.023
Physical proximity of the working spaces	# 05 Insufficient concern for knowledge management	-0.808	0.028
Preoccupation with knowledge management	#15 Adverse management conduct	0.772	0.042
Culture of team meetings	#06 Insufficient information storage	-0.866	0.012
Culture of team meetings	#09 Mistrust and micropolitics	-0.866	0.012
Culture of team meetings	#12 Inadequate climate of communication	-0.866	0.012
Heterogeneity of the department personnel	#02 Loss of information	-0.571	0.180
Heterogeneity of the department personnel	#05 Insufficient concern for knowledge management	0.643	0.119
Heterogeneity of the department personnel	#08 Inadequate representation and misunderstandings	0.750	0.052
Size	#05 Insufficient concern for knowledge management	-0.559	0.192
Size	#07 Being professionally blinkered / leaking awareness	0.505	0.248
Preoccupation with knowledge management	#11 Insufficient flow of information	0.733	0.061