

Competitive Advantage IC-Management

IC & KM Practices in German Companies (SME's)

**Conference on the role of Intellectual Capital in
strengthening SME performance**

LUX IC

**Chambre de Commerce du Grand-Duché de Luxembourg
Luxembourg, 17th March 2014**

**Univ.-Prof. Dr. Peter Pawlowsky, Aylin Gözalan , MA
Institute for Personnel Management and Leadership Studies
Chemnitz University of Technology**





1. Relevance of Intellectual Capital Management (ICM)
2. Objectives, research design & methodology of the study
3. Results
4. Conclusions

AUTUMN 1973



Riding bycle on a German Autobahn 1973

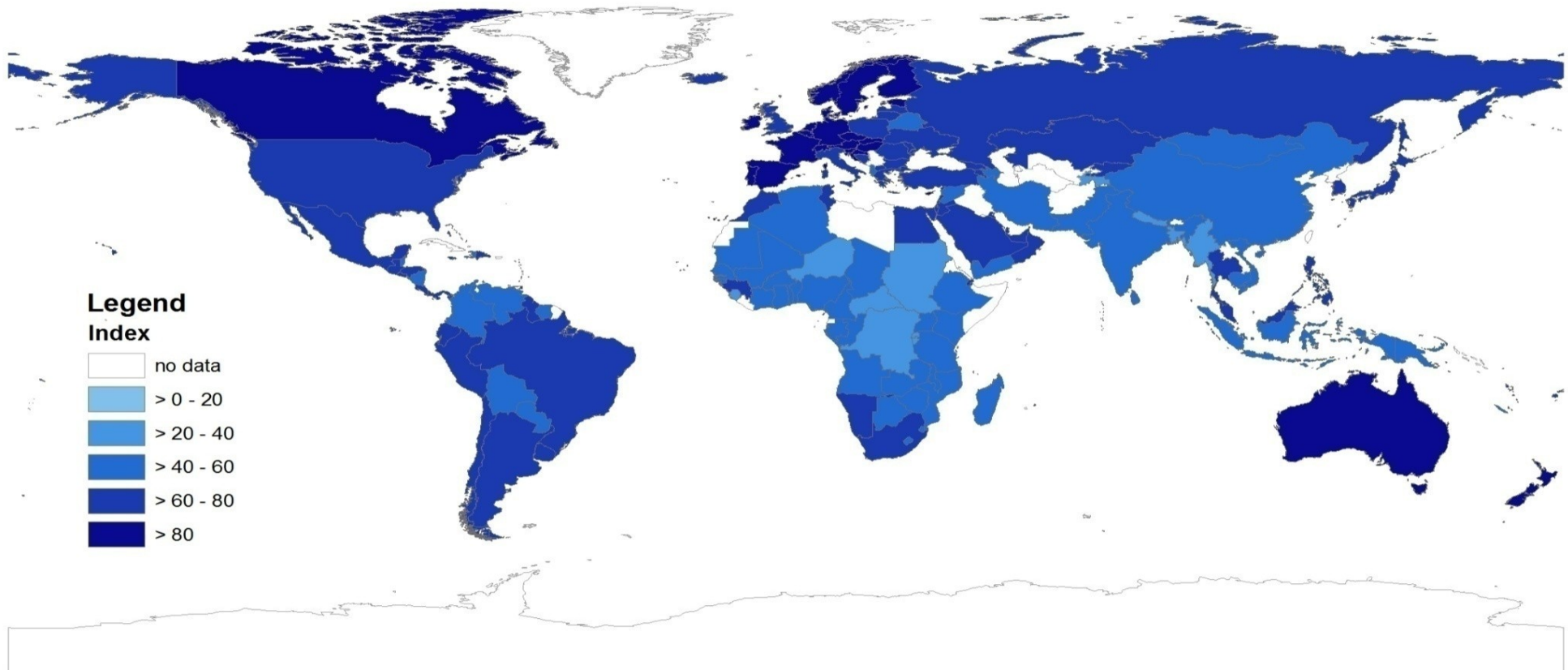
Quelle: Spiegel Archiv „einestages.spiegel.de/hund-images/2007/11/23/...



„The ability to learn faster than your competitors may be the only sustainable competitive advantage“

DeGeus (1988); Corporate Planning Director in charge of business and scenario planning with the Royal Dutch Shell

KOF GLOBALIZATIONINDEX 2006



© 2008 KOF, ETH Zürich

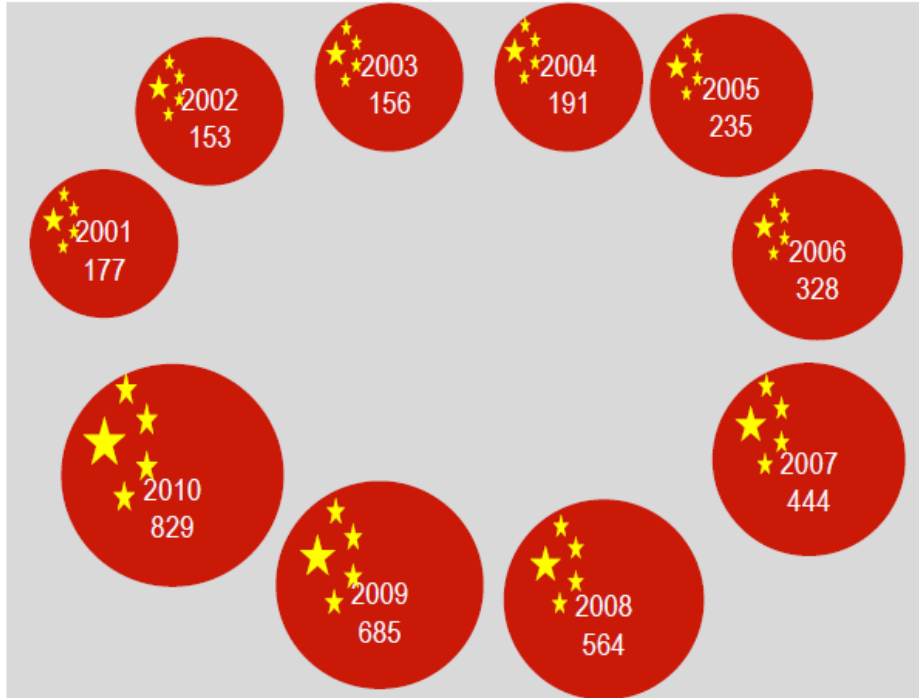
„CHINA IS SHOPPING“



Sold to China in the last 12 month

Deutsches Unternehmen	Produkt	Chinesischer Käufer
Putzmeister	Betonpumpen	Sany
Schwing	Betonpumpen	XCMG
Medion	Computer	Lenovo
Kiekert	Autotürschlösser	Hebei
Preh	Autoelektronik	Joyson

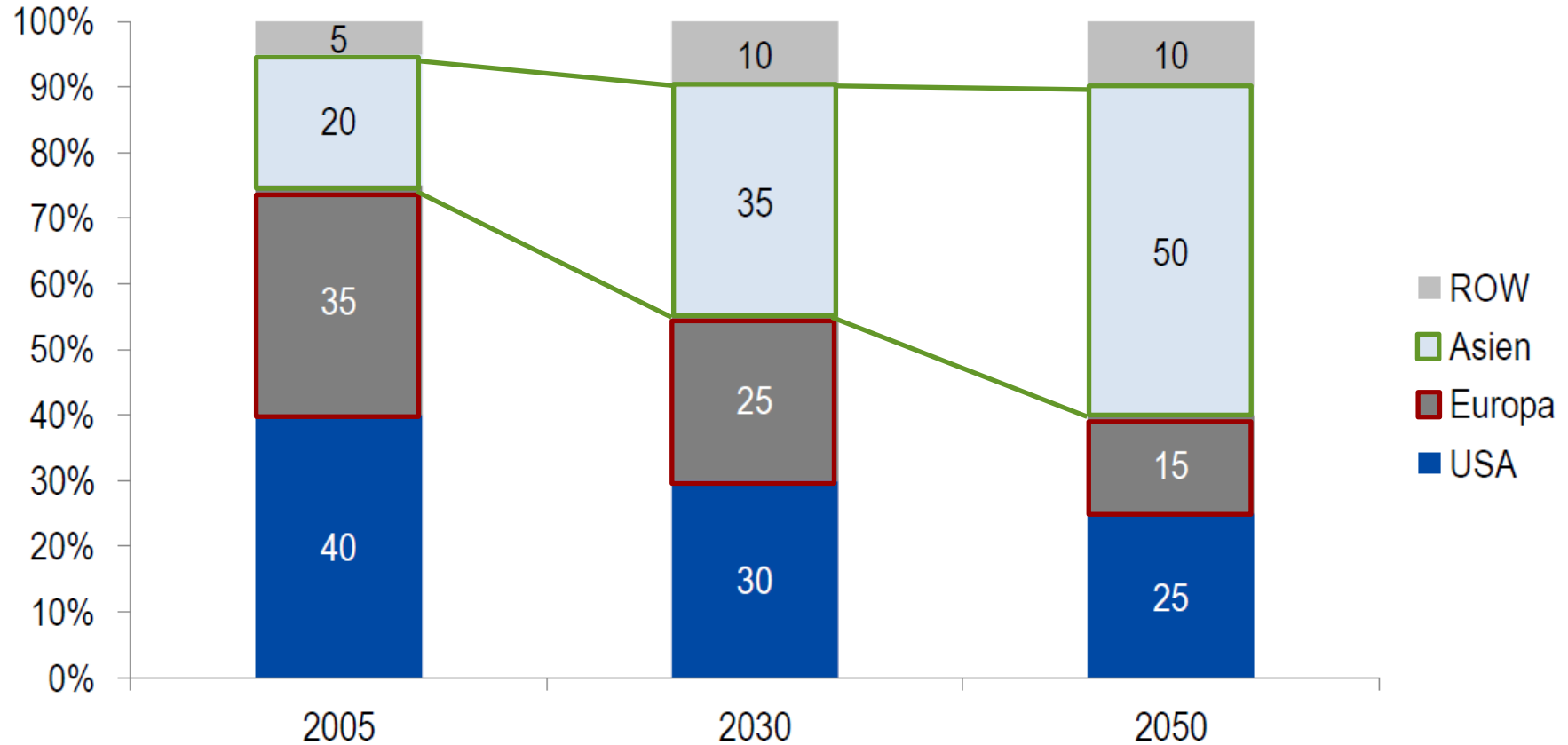
Chinese directinvest. in Germany (in Mio. €)



Quelle: FAZ (2012); Bundesbank

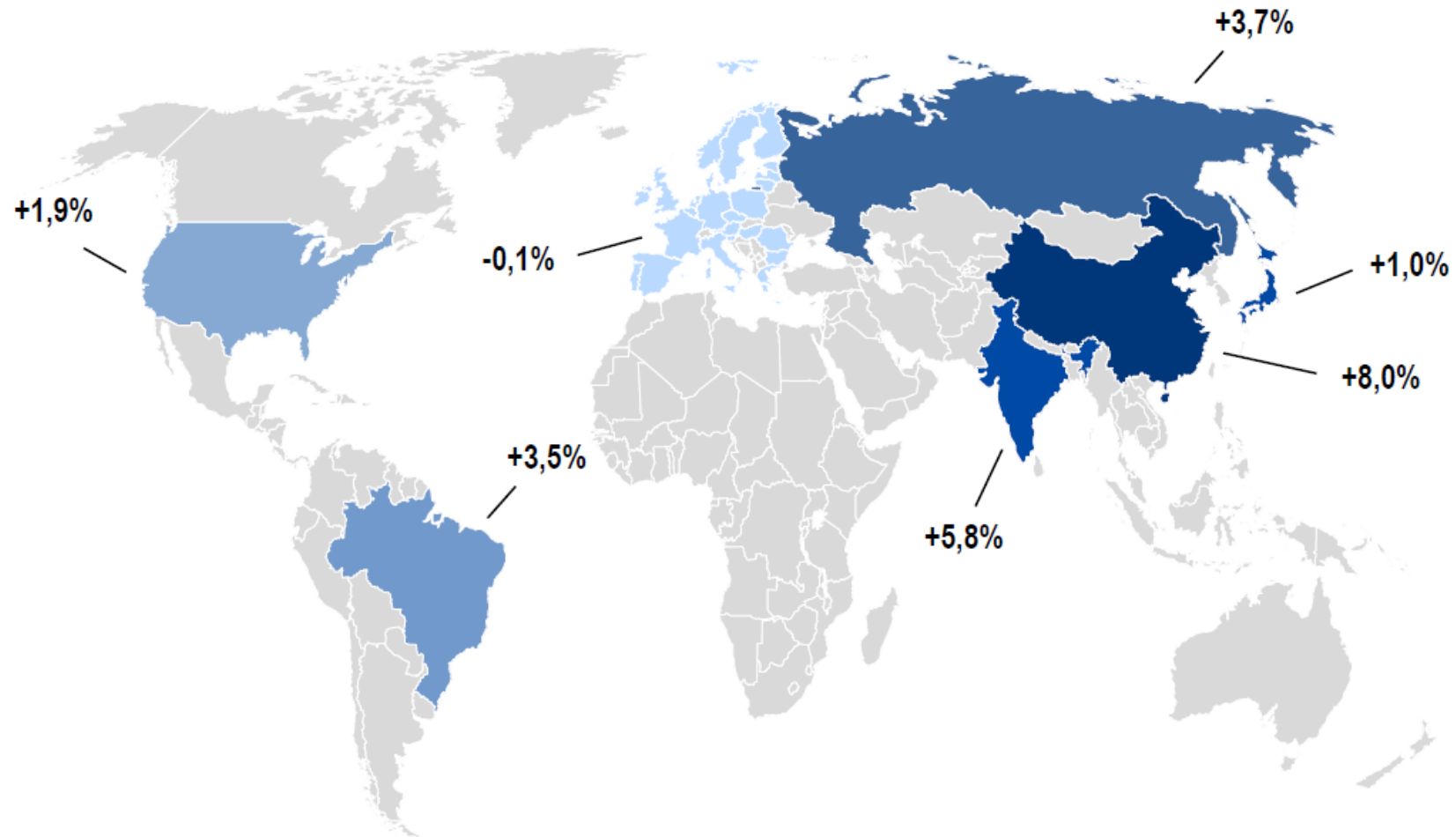
Quelle: Jochmann, W: HR Management reloaded , Ehreshoven 24.5.2012

WORLD ECONOMY – GROSS DOMESTIC PRODUCT (2005-2050)



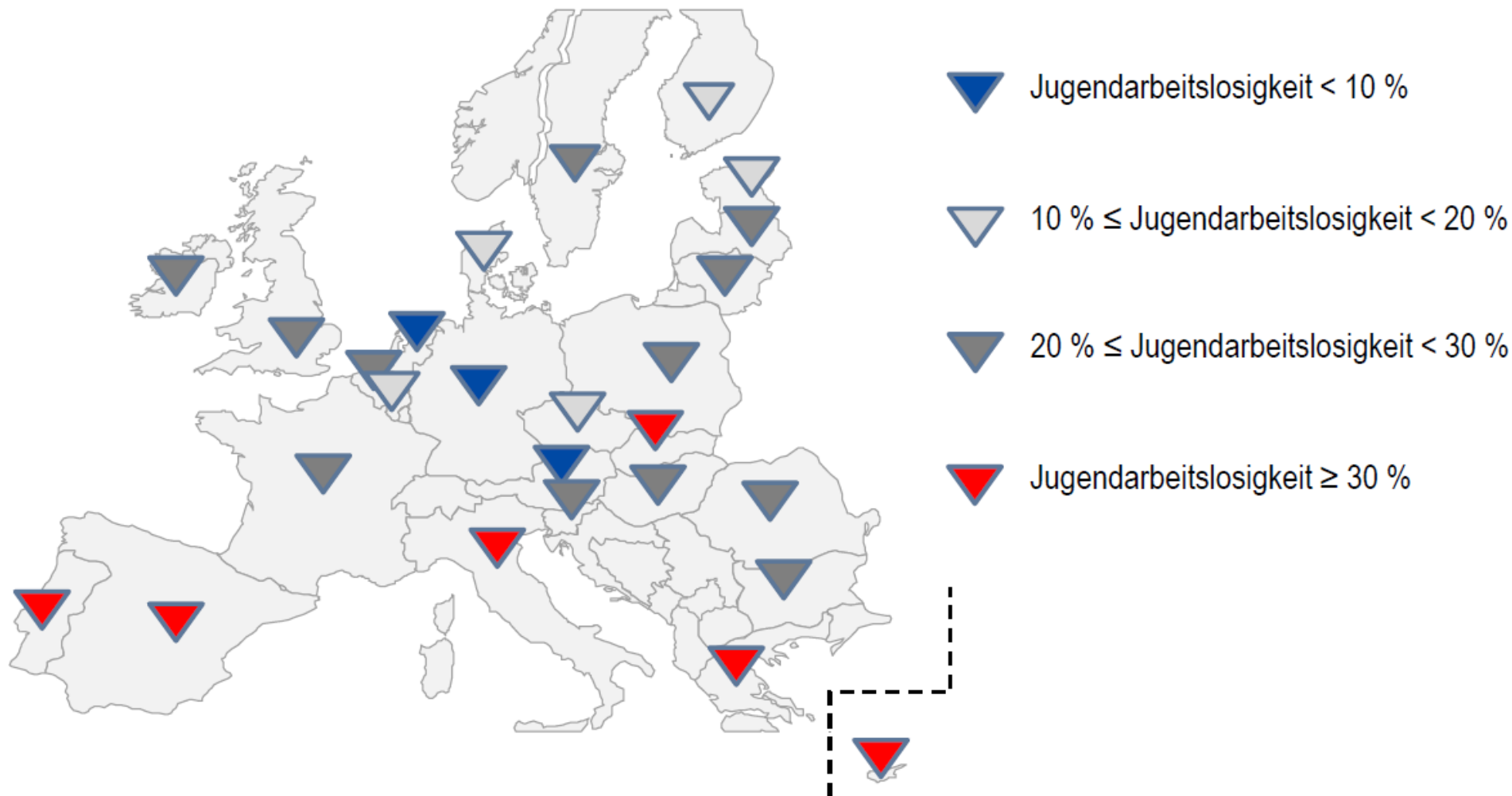
Quelle: Jochmann, W: HR Management reloaded , Ehreshoven 24.5.2012

ECONOMIC GROWTH CHINA (CHANGE: 2012-2013)



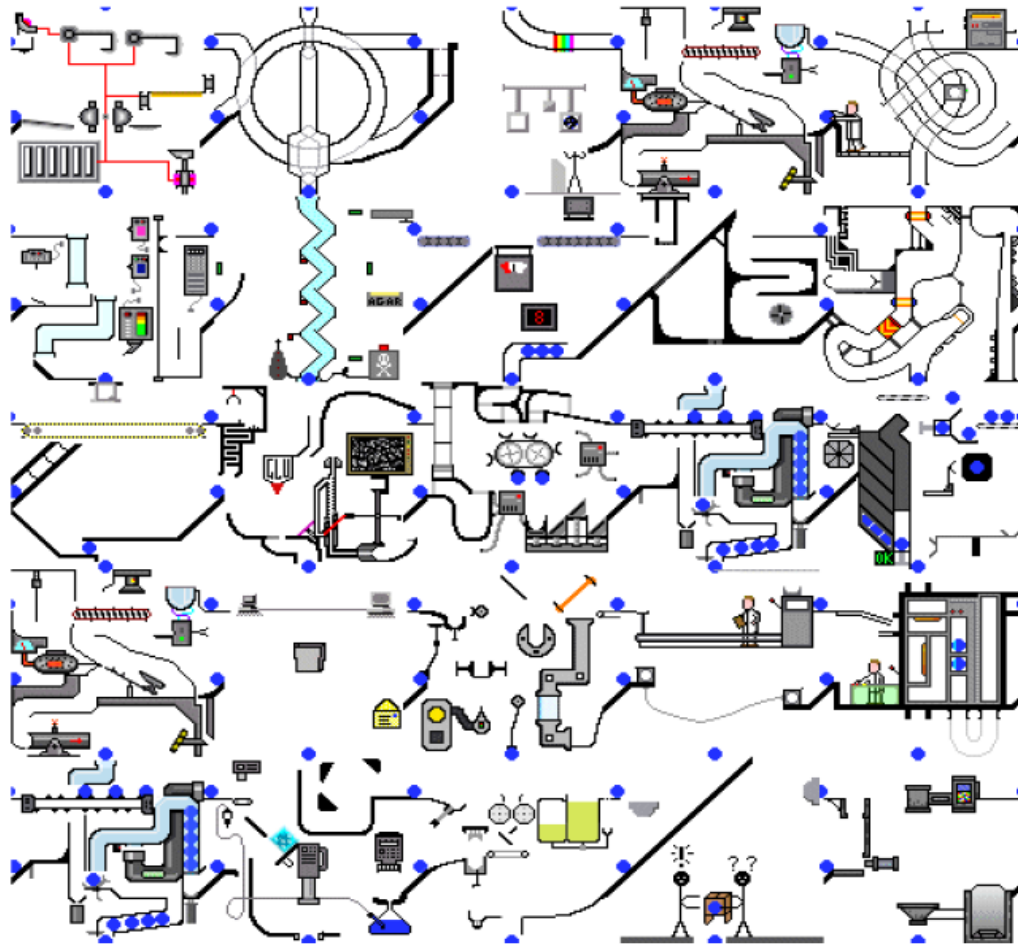
Quelle: EU (2013), Bertelsmann Stiftung/Prognos, nach Jochmann 2013

YOUTH UNEMPLOYMENT IN EUROPE 2012



...ARE WE USING INTELLIGENCE AND ENERGY IN A PROPER WAY?

THE WORLD IS BECOMING MORE COMPLEX...

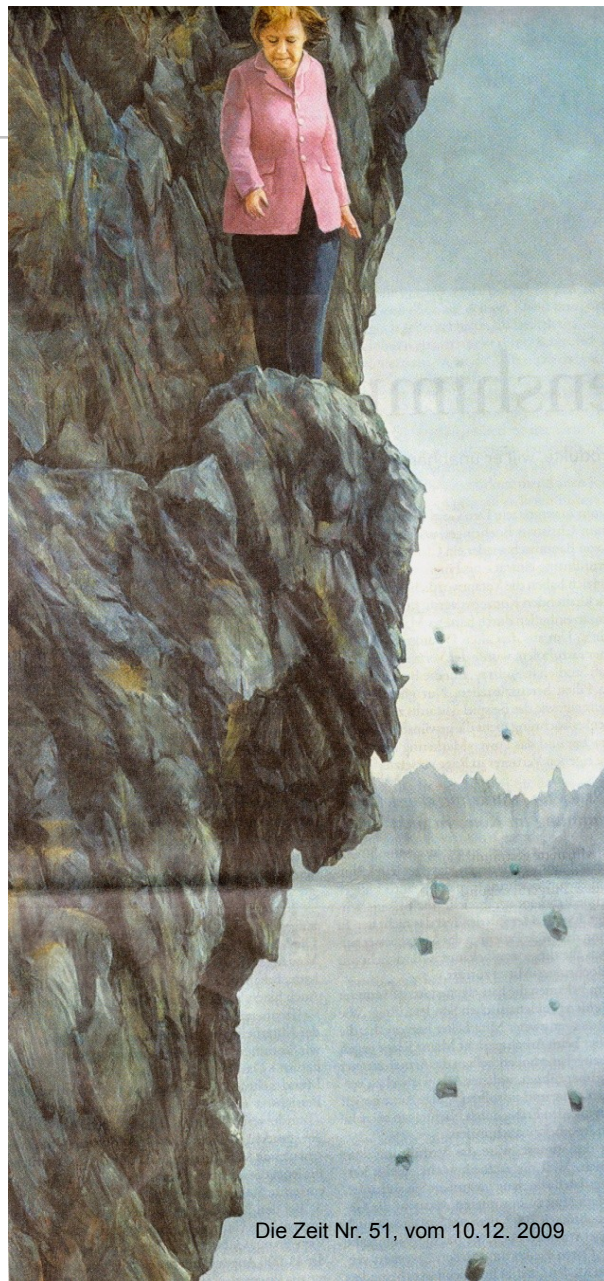


...DYNAMIC...



Quelle: in Anlehnung an Done (2011). Global Trends - Facing Up to a Changing World

...AND RISKIER



Die Zeit Nr. 51, vom 10.12. 2009

...the economy is facing a long phase of extreme **risk**...



Dynamic capabilities



Dynamic capability:

"the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (1)

Resilience



Resilience:

The property of a material that enables it to resume its original shape or position after being bent, stretched, or compressed; elasticity (2)

Absorptive capacity



Absorptive capacity:

"the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends is critical to its innovative capabilities" (3)

Agility



Agility:

Business agility allows organizations to adjust rapidly to changing market conditions and capitalize on emergent business opportunities (4)

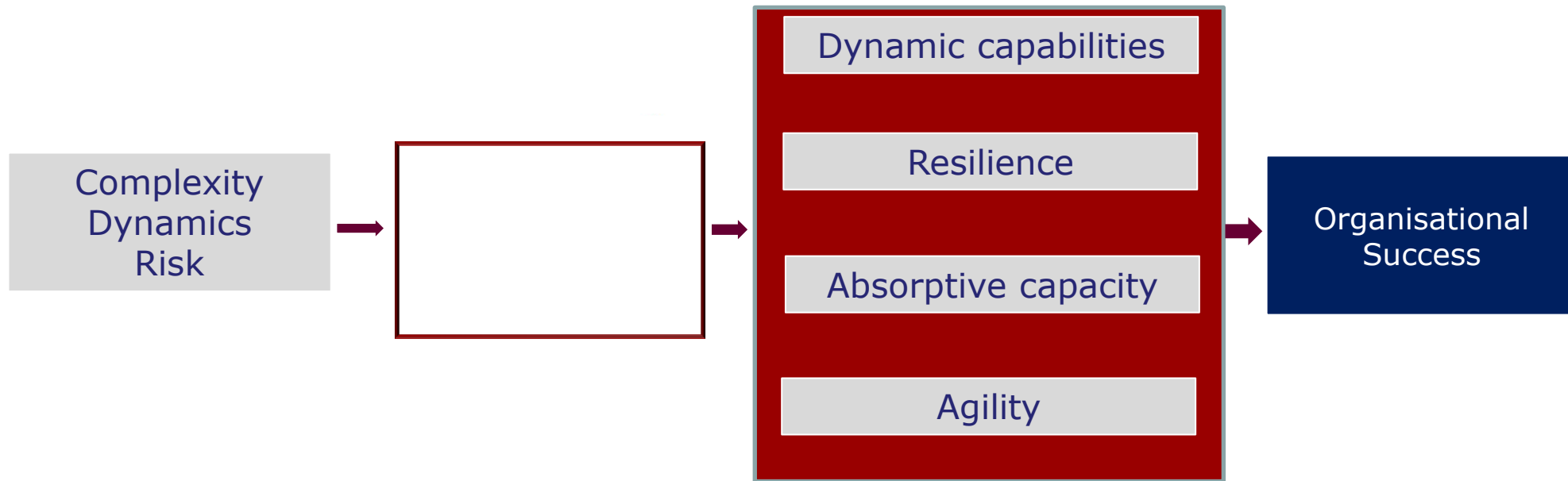
(1) Teece, D., G. Pisano and A. Shuen, 1997, (18:7)

(2) Hollnagel et al. 2006

(3) Cohen et. al. (1990)

(4) Yusuf et al., 1999, S. 37 , nach Förster, Wendler (2012), S.9 ; Übers. PP).

CONTEXT OF ARGUMENTATION



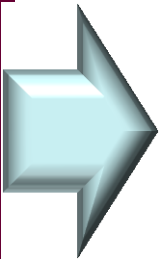


1. Relevance of Intellectual Capital Management (ICM)
2. Objectives, research design & methodology of the study
3. Results
4. Conclusions





RESULTS
Representative Survey
German companies





1. Relevance of Intellectual Capital Management (ICM)
2. Objectives, research design & methodology of the study
- 3. Results**
4. Conclusions

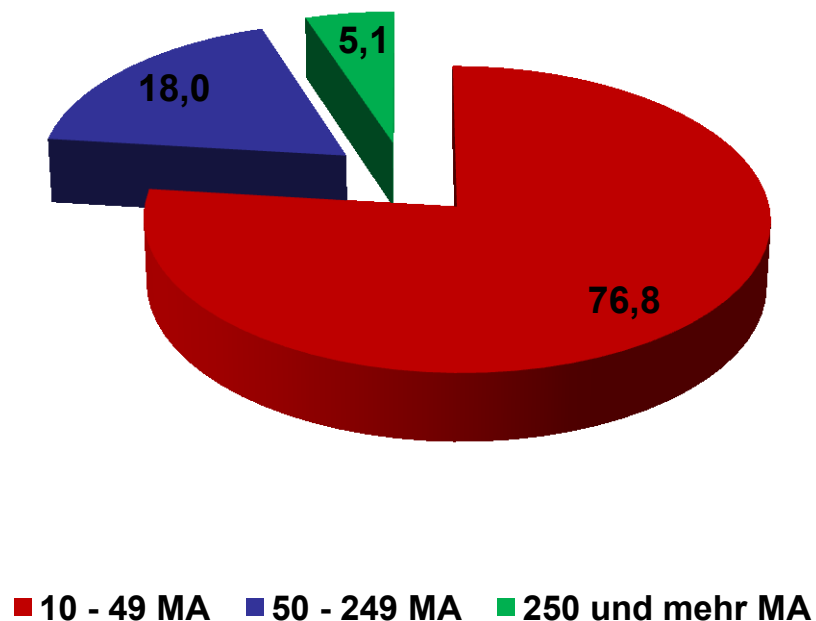
SAMPLE



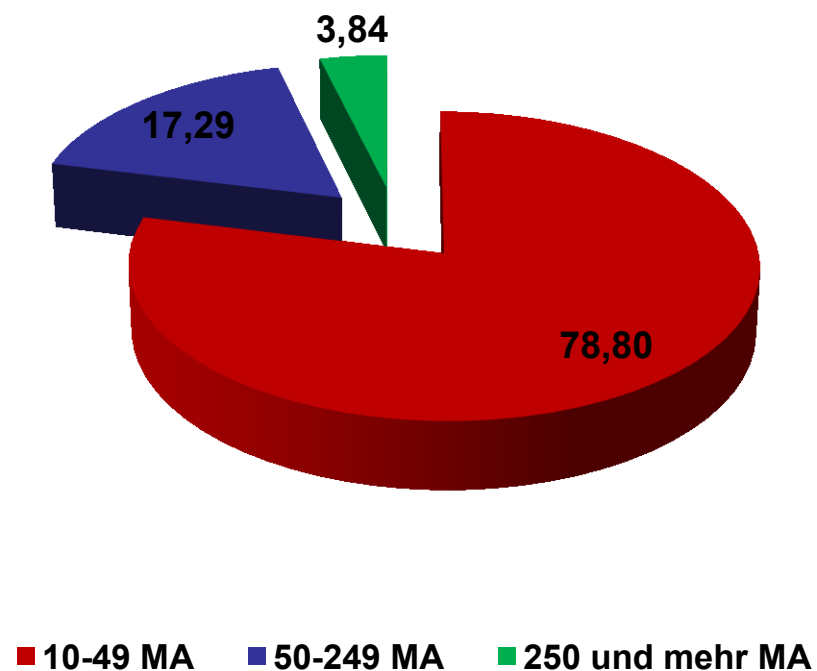
Representative sample 15.000 companies in Germany
Valid interviews = 3401

COMPANY SIZE IN SAMPLE AND NATIONAL DISTRIBUTION

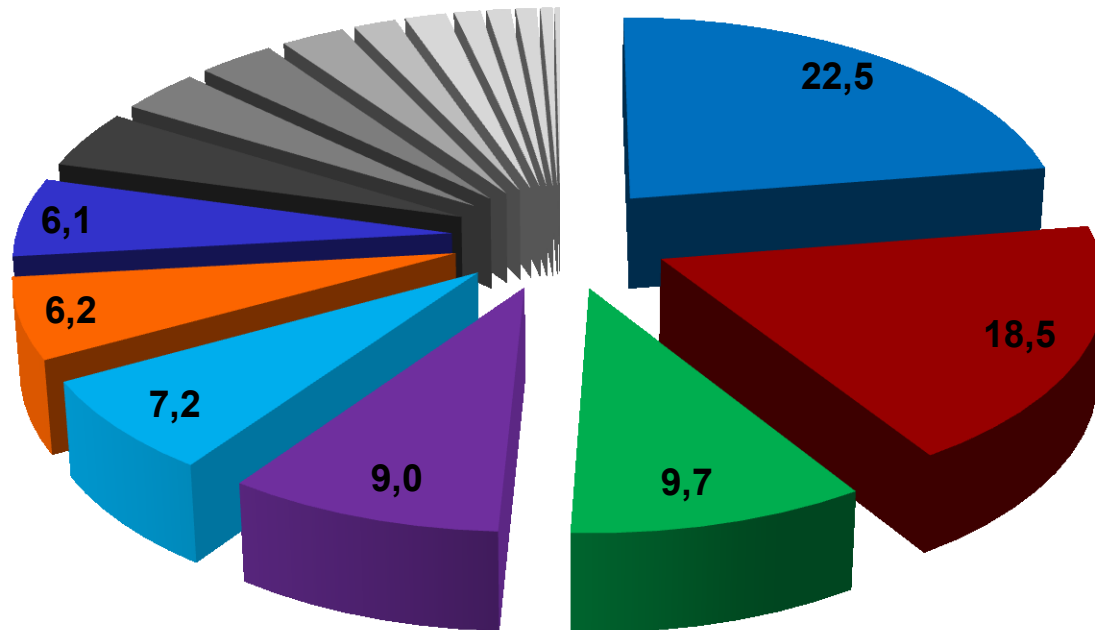
Sample: company size



Distribution of company size in Germany:

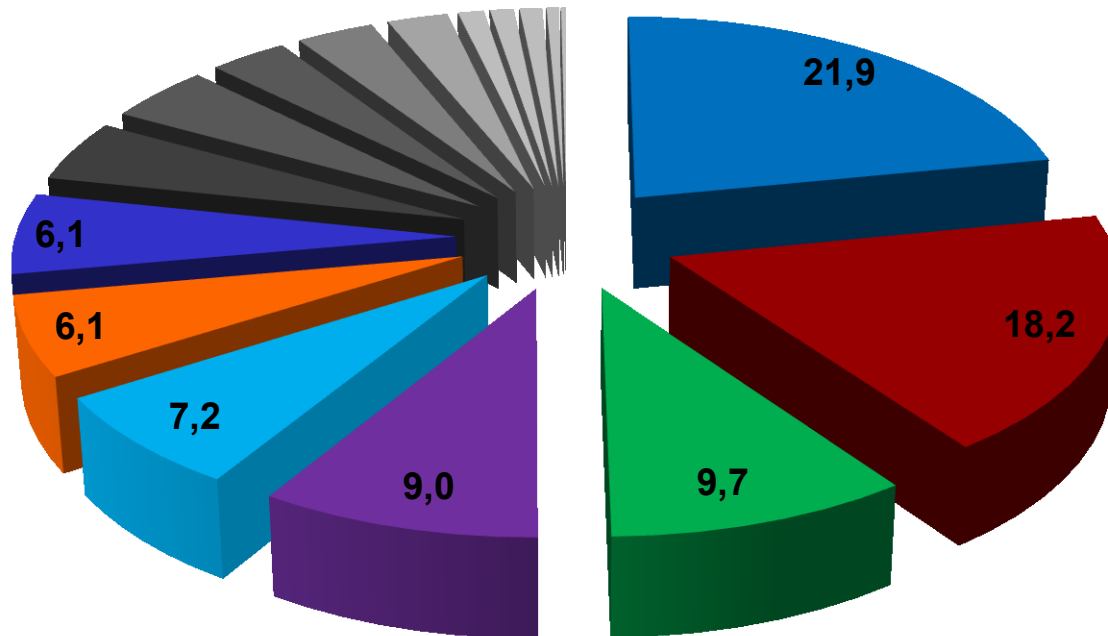


SAMPLE: LINE OF BUSINESS



- Handel; Instandhaltung und Reparatur von Kraftfahrzeugen
- Verarbeitendes Gewerbe
- Gesundheits- und Sozialwesen
- Baugewerbe
- Erbringung von freiberuflichen, wissenschaftlichen und technischen Dienstleistungen
- Verkehr und Lagerei
- Erbringung von sonstigen wirtschaftlichen Dienstleistungen
- Gastgewerbe
- Information und Kommunikation
- Erbringung von sonstigen Dienstleistungen
- Erbringung von Finanz- und Versicherungsdienstleistungen
- Land- und Forstwirtschaft, Fischerei
- Erziehung und Unterricht
- Wasserversorgung etc.
- Grundstücks- und Wohnungswesen
- Kunst, Unterhaltung und Erholung
- Energieversorgung
- Bergbau und Gewinnung von Steinen und Erden

LINE OF BUSINESS IN NATIONAL DISTRIBUTION (GERMANY)



- Handel; Instandhaltung und Reparatur von Kfz.
- Verarbeitendes Gewerbe
- Gesundheits- und Sozialwesen
- Baugewerbe
- Erbringung von freiberuflichen, wissenschaftlichen
- Verkehr und Lagerei
- Erbringung von sonstigen wirtschaftlichen Dienstleistungen
- Erziehung und Unterricht
- Gastgewerbe
- Erbringung von sonstigen Dienstleistungen
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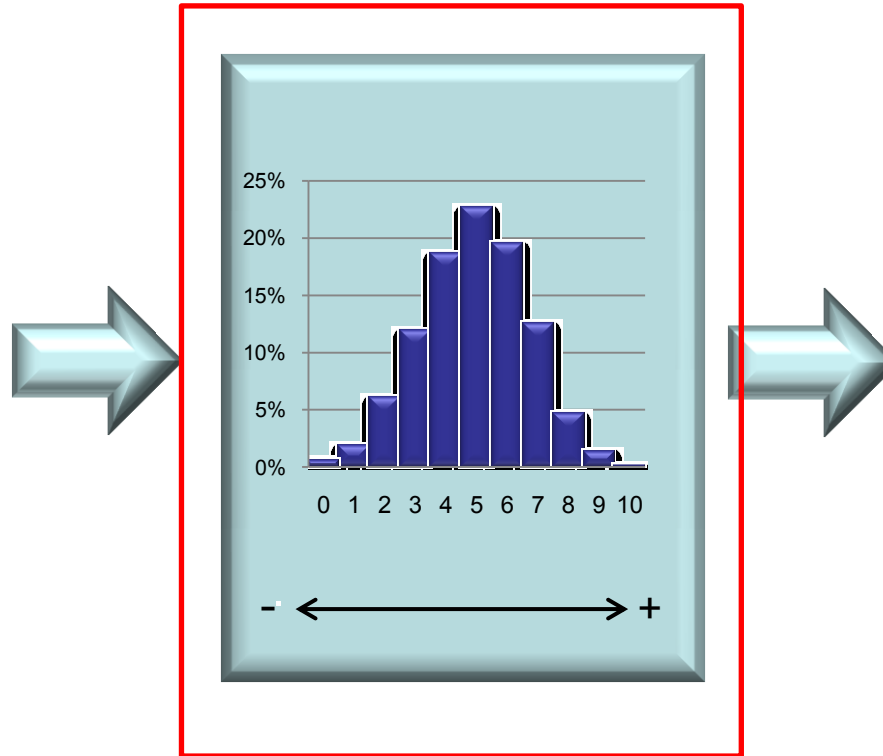
IC-MANAGEMENT RESEARCH MODEL



Determinants



KM/IC activities

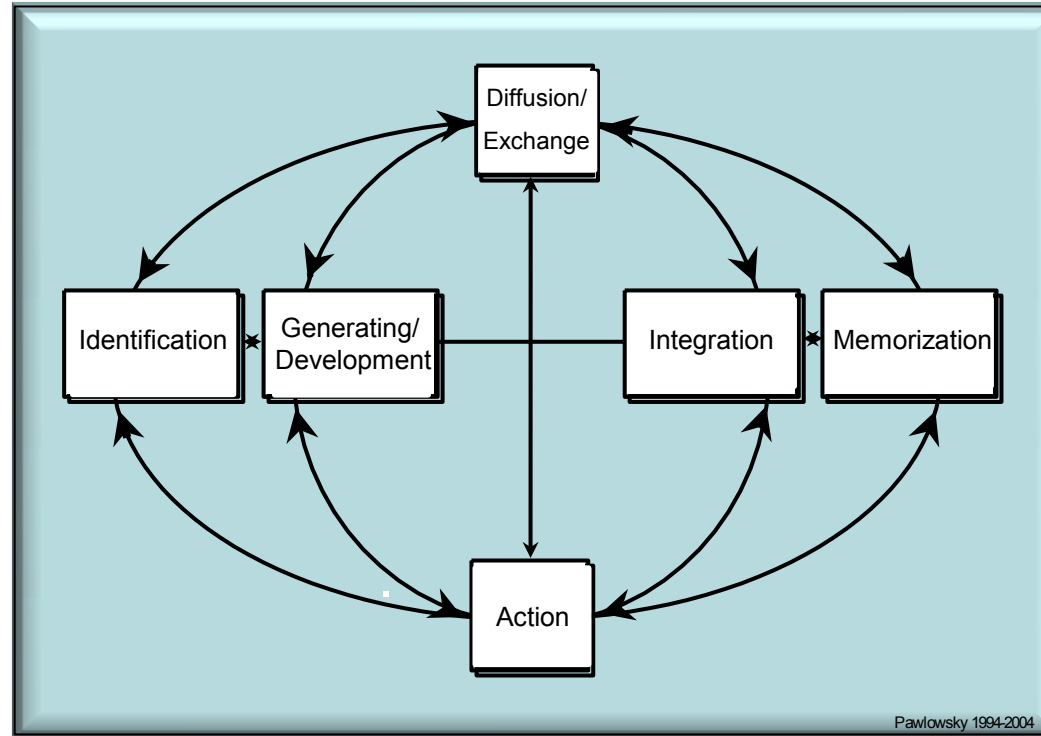


Performance/Success Factors

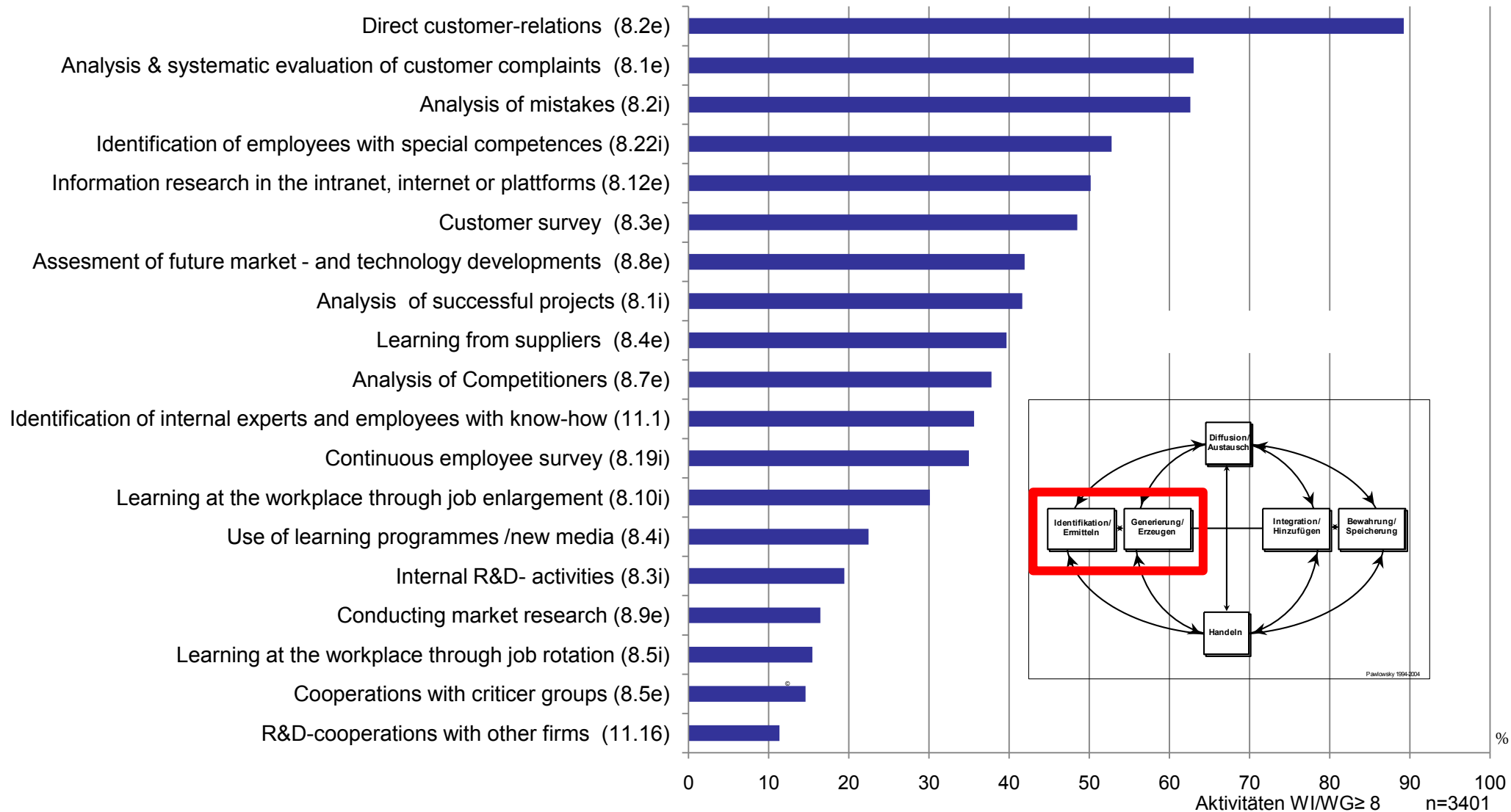


IC-MANAGEMENT RESEARCH MODEL

KM/IC activities

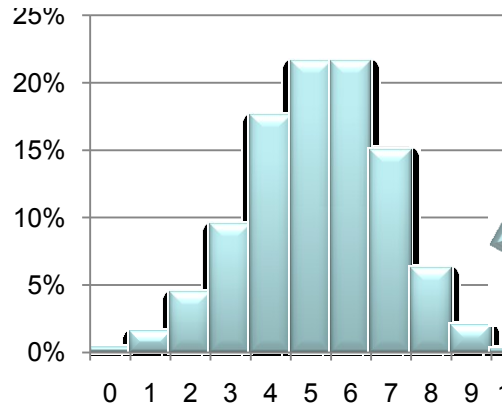


KM-ACTIVITIES: KNOWLEDGE IDENTIFICATION & DEVELOPMENT

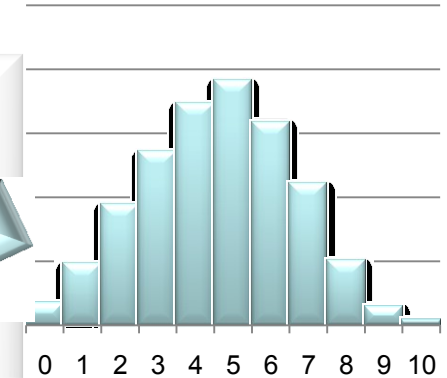


OVERALL KM/IC-ACTIVITIES (INDEX)

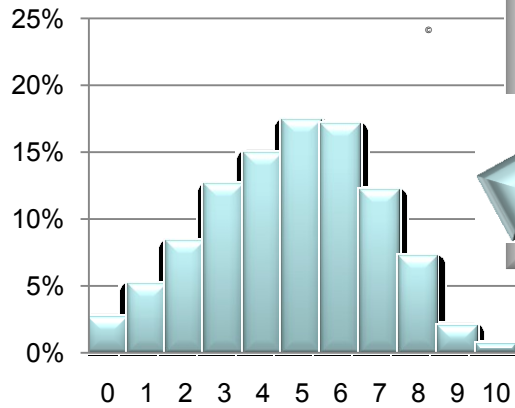
Knowledge- Identifikation



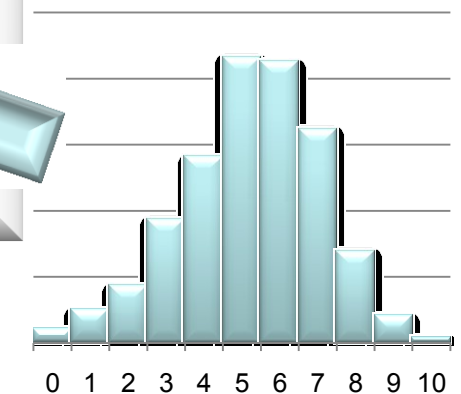
Knowledge- Diffusion



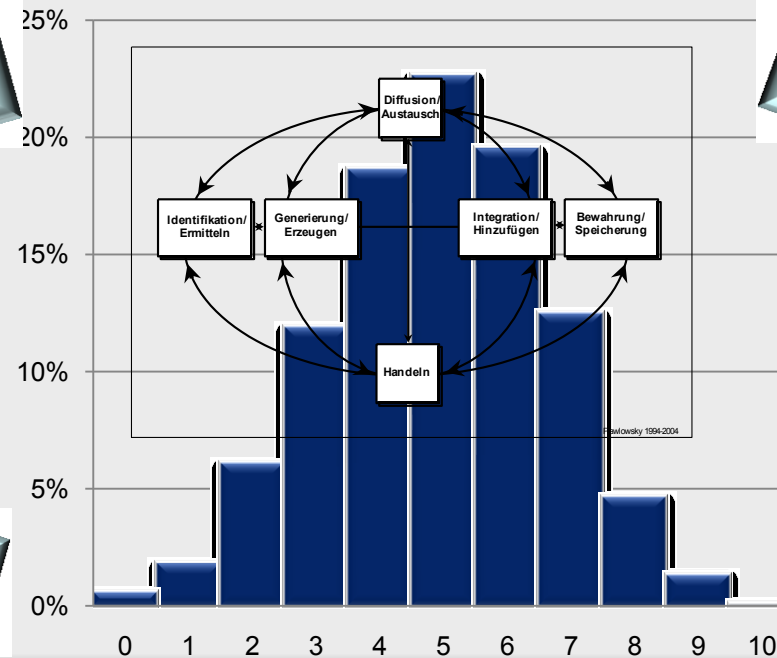
Knowledge- Integration



Knowledge- Action Impl.



Distribution of KM/IC activities in representative sample



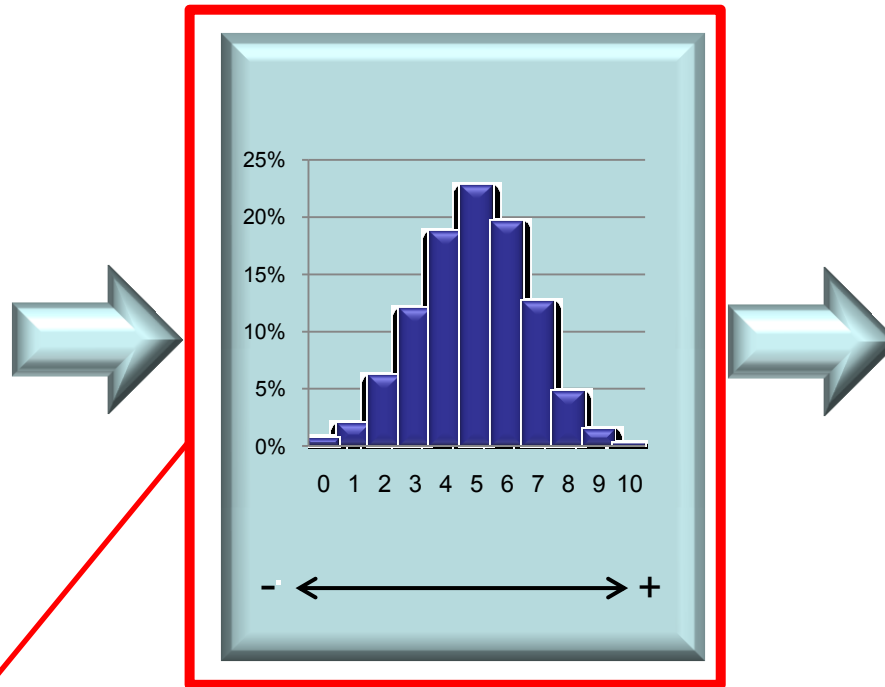
IC-MANAGEMENT RESEARCH MODEL



Determinants



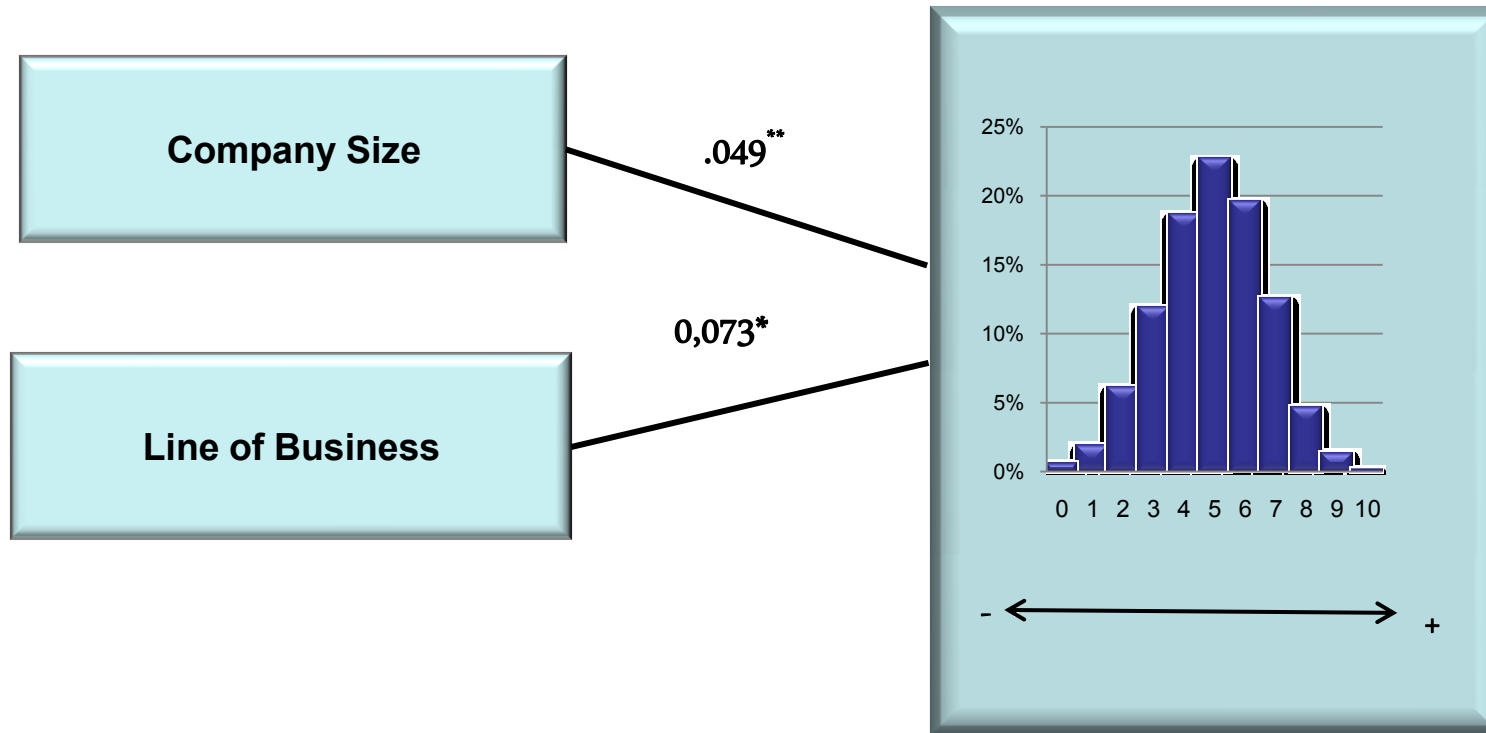
KM/IC Activities



Performance/Success Factors



KM-ACTIVITIES AND COMPANY SIZE/LINE OF BUSINESS



n = 3401 korr R²: .072

IC-MANAGEMENT RESEARCH MODEL



Determinants

Personnel- / HR
management

Market
challenges

Environmental-/Market
dynamics

Business
strategy

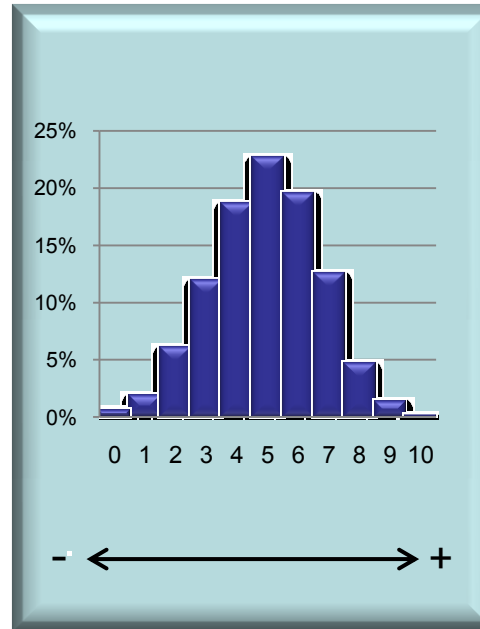
Perceived KM
Instrumentality

Holistic
KM-Strategy

Company size/
Line of business

Quality-management

KM/IC Activities



Performance/Success Factors

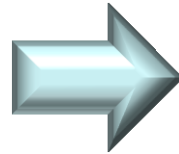
Employee motivation

Innovative capabilities

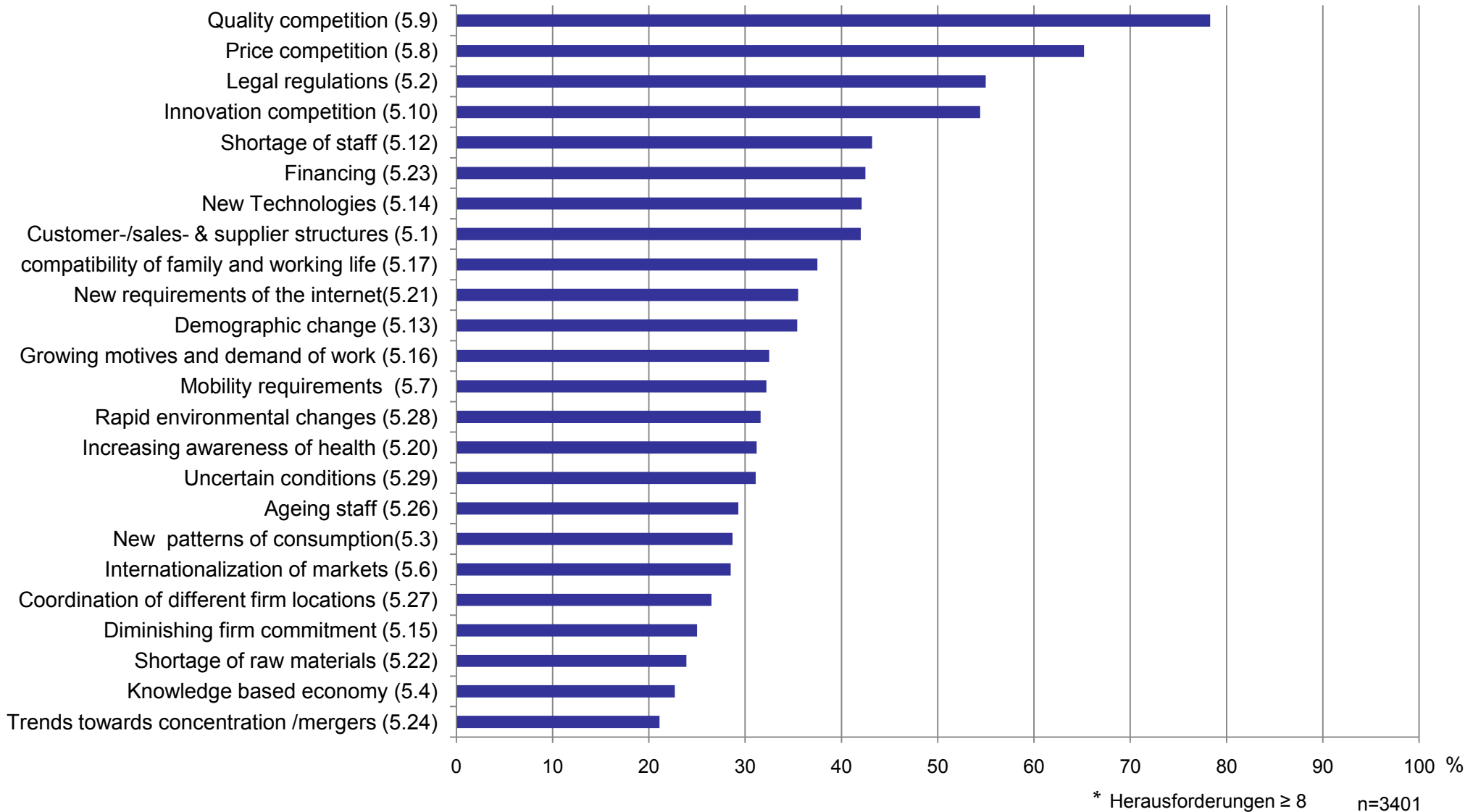
Competitiveness

Economic performance

Basel II ratings/
credibility ratings



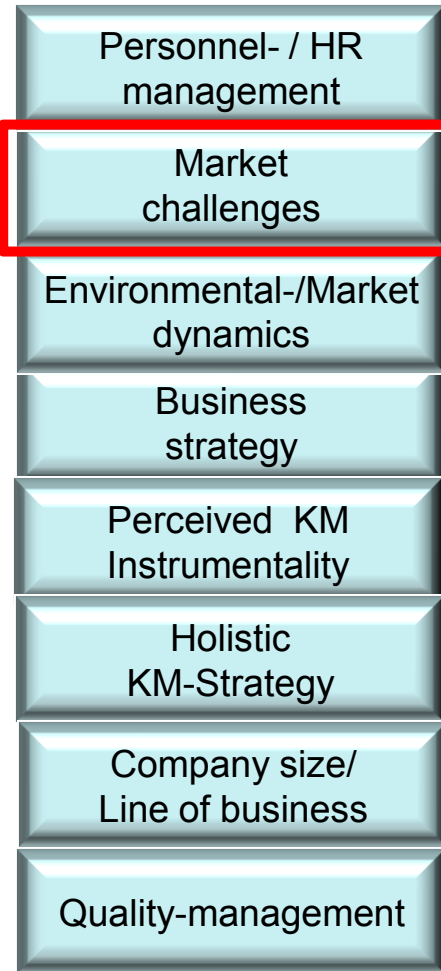
PERCEIVED MARKET CHALLENGES (GERMAN COMPANIES)



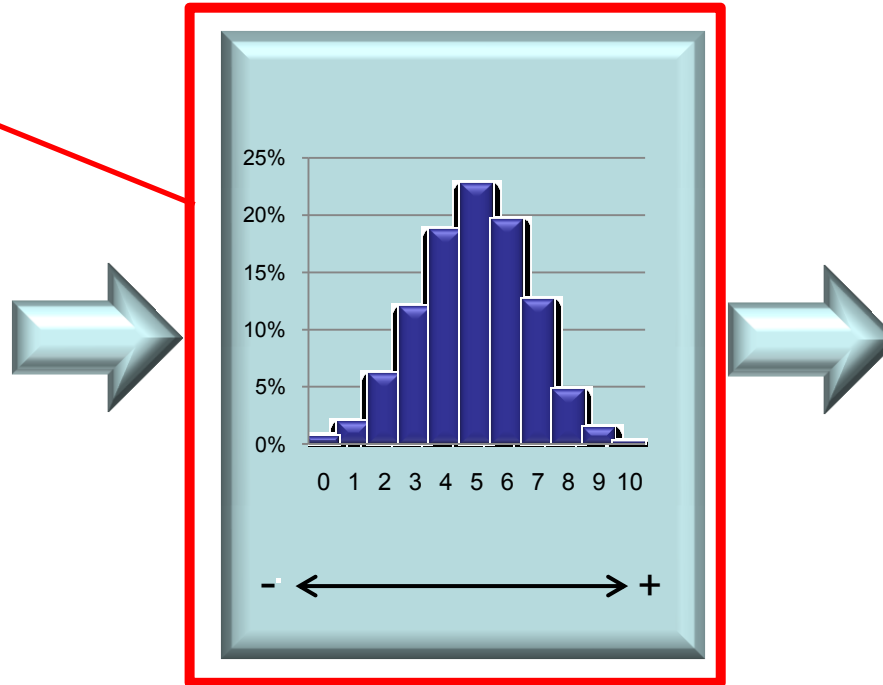
IC-MANAGEMENT RESEARCH MODEL



Determinants



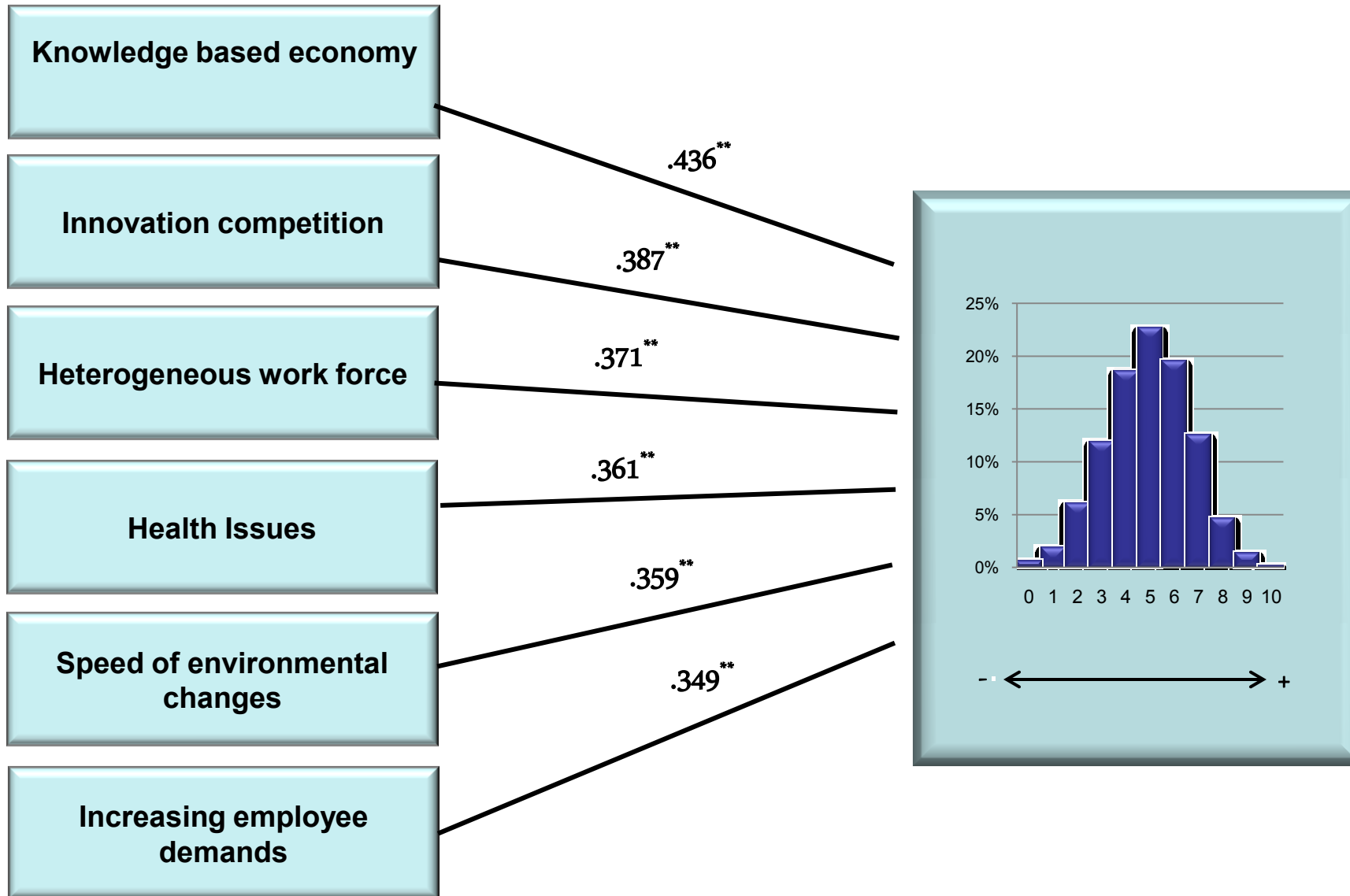
KM/IC Activities



Performance/Success Factors



PERCEIVED MARKET CHALLENGES AND KM ACTIVITIES



n=3401

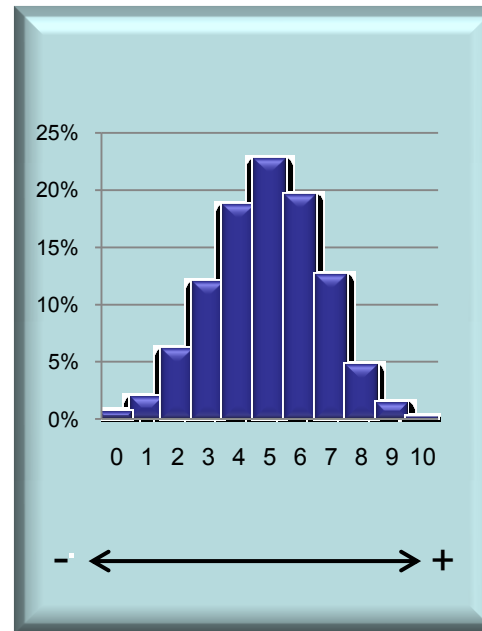
IC-MANAGEMENT RESEARCH MODEL



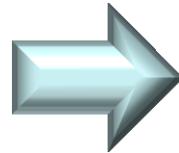
Determinants



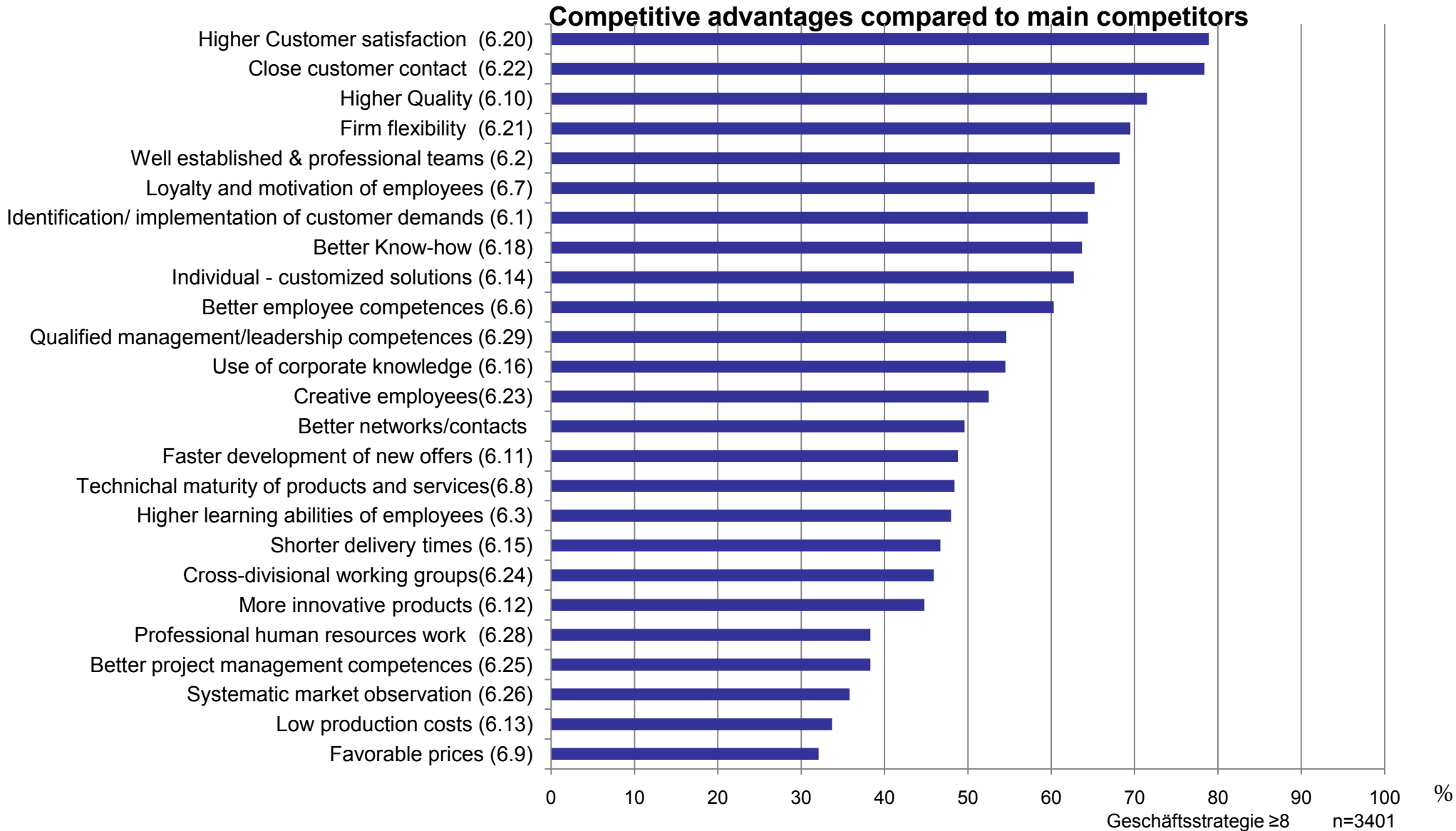
KM/IC activities



Performance/Success Factors



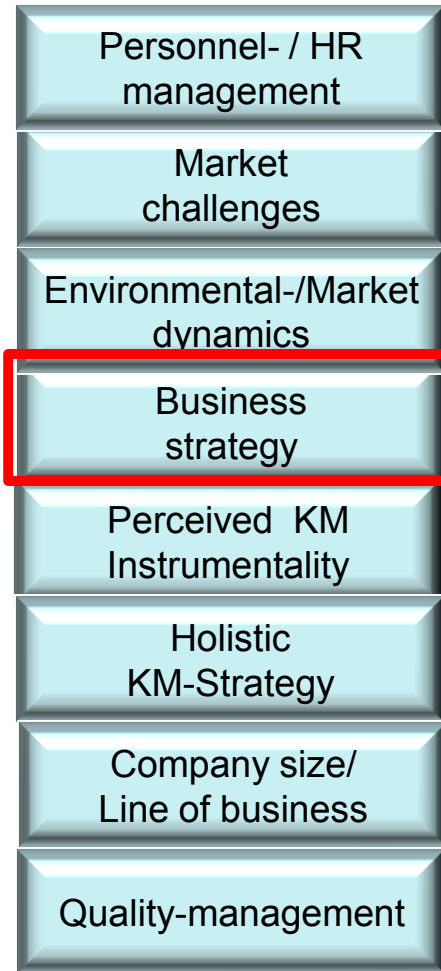
BUSINESS STRATEGY (CORE COMPETENCIES) IN GERMAN COMPANIES



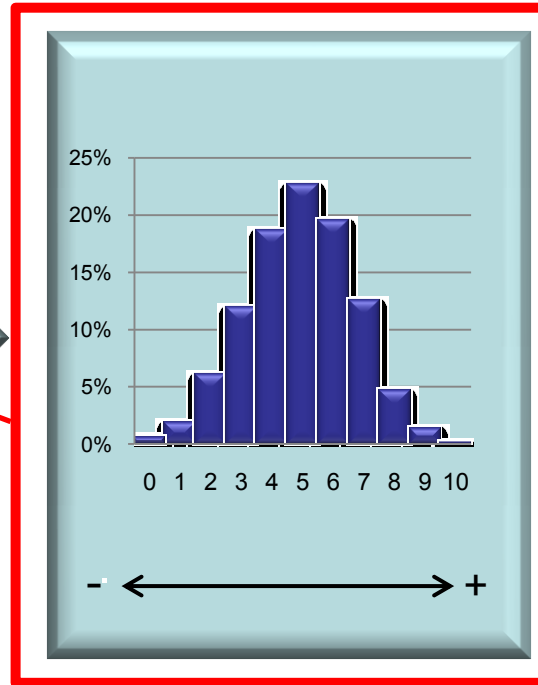
IC-MANAGEMENT RESEARCH MODEL



Determinants



KM/IC activities



Performance/Success Factors

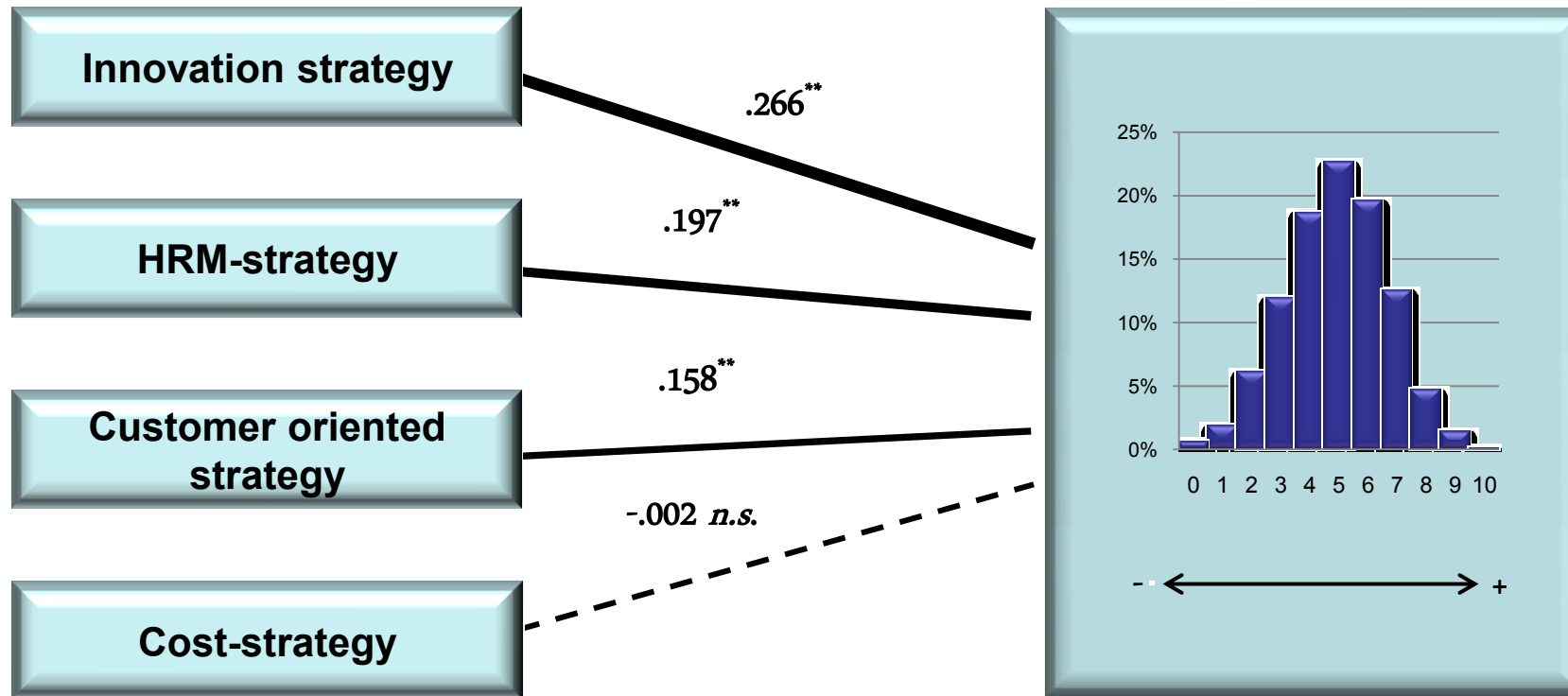


KM/IC ACTIVITIES AND BUSINESS STRATEGY (REGRESSION)



Business strategy

KM/IC Activities

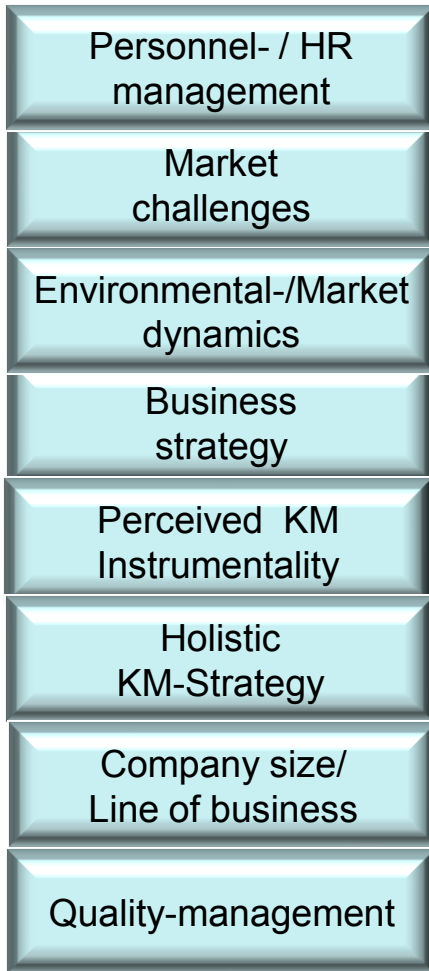


n = 3401 korr. $R^2 = .259$

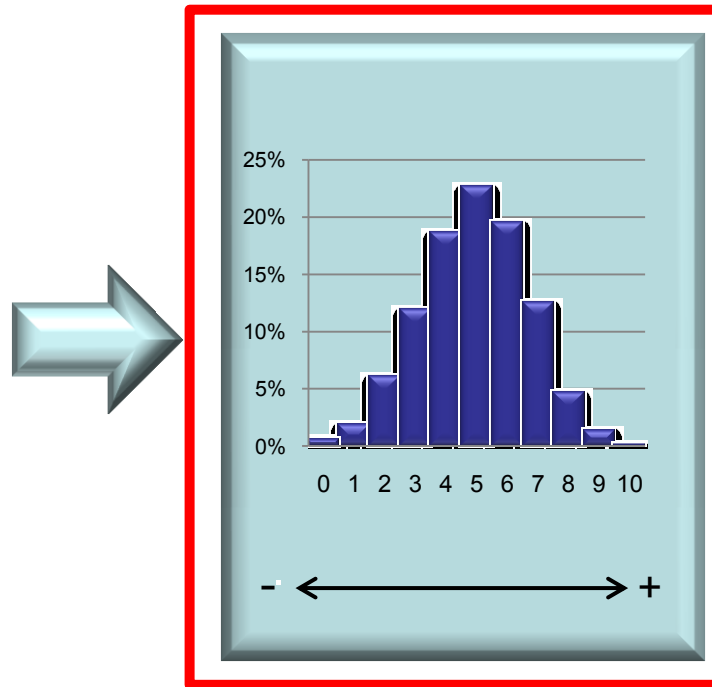
IC-MANAGEMENT RESEARCH MODEL



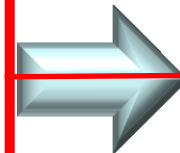
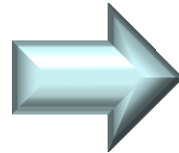
Determinants



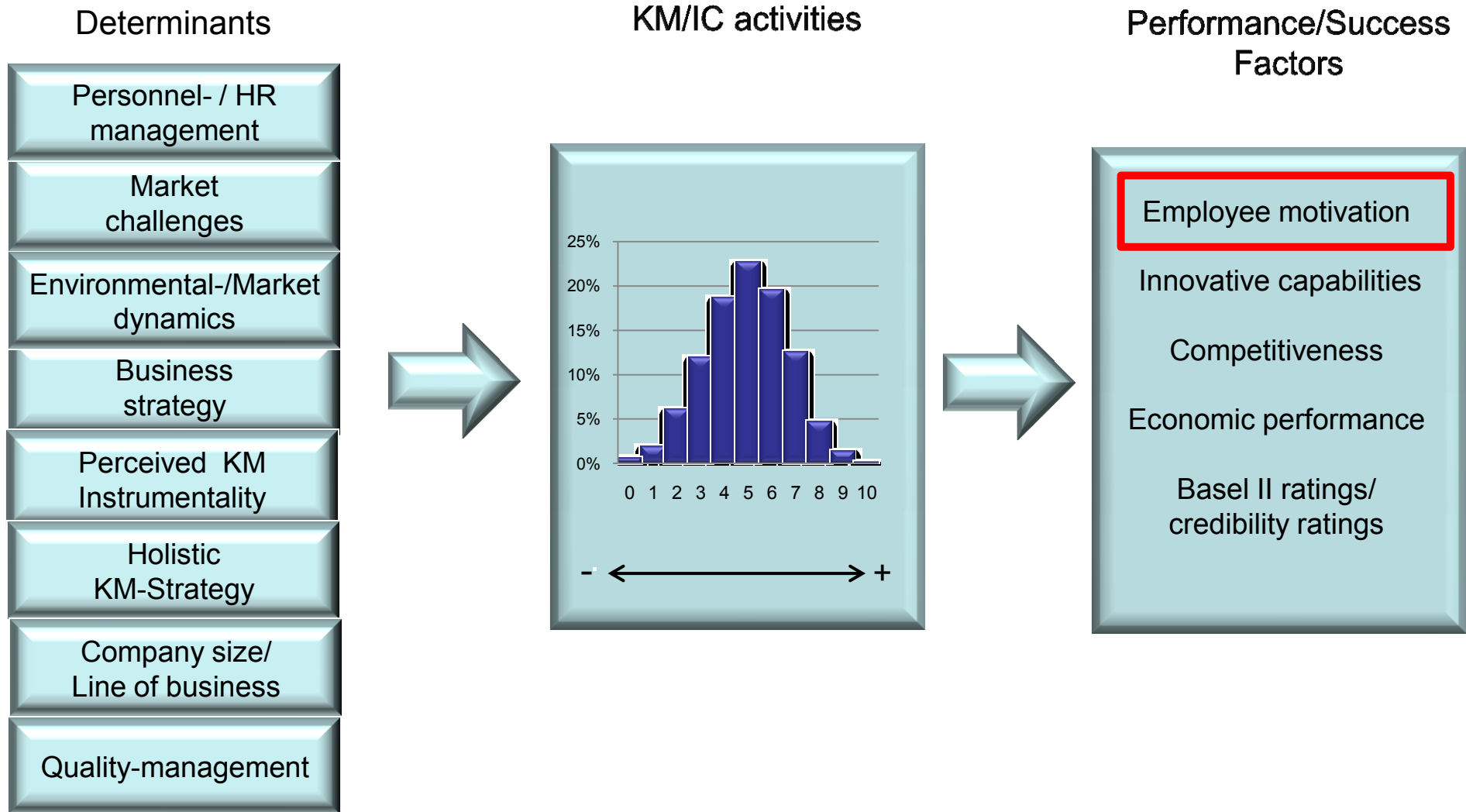
KM/IC activities



Performance/Success Factors



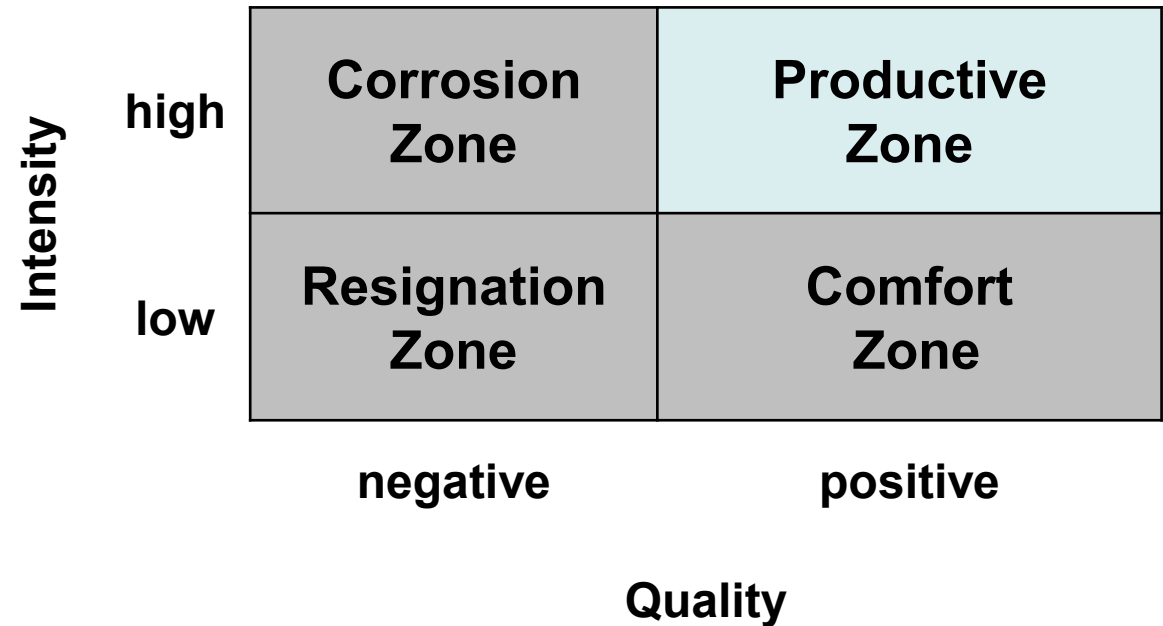
IC-MANAGEMENT RESEARCH MODEL



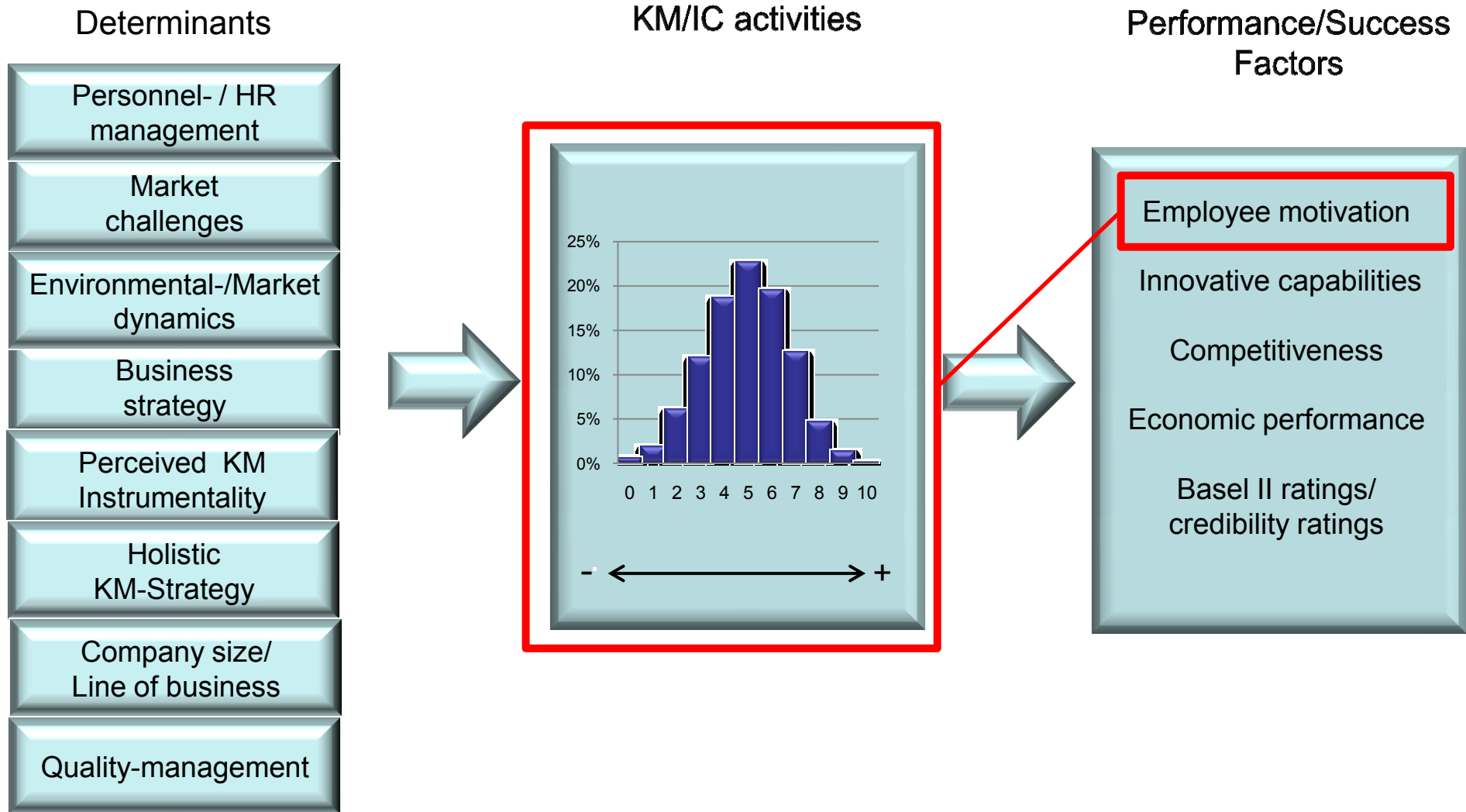
MOTIVATIONAL - HIGH ENERGY



HEIKE BRUCH



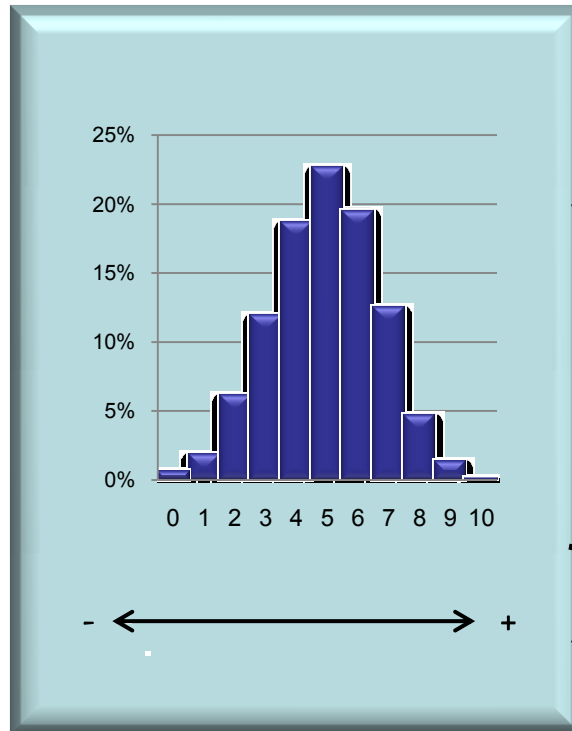
IC-MANAGEMENT RESEARCH MODEL



KM- ACTIVITIES AND EMPLOYEE MOTIVATION (POE)



KM/IC Activities



Employee Motivation (POE)

... feel inspired in their job.

.370**

... are always on the lookout for new opportunities.

.365**

... have a collective desire to make something happen.

.326**

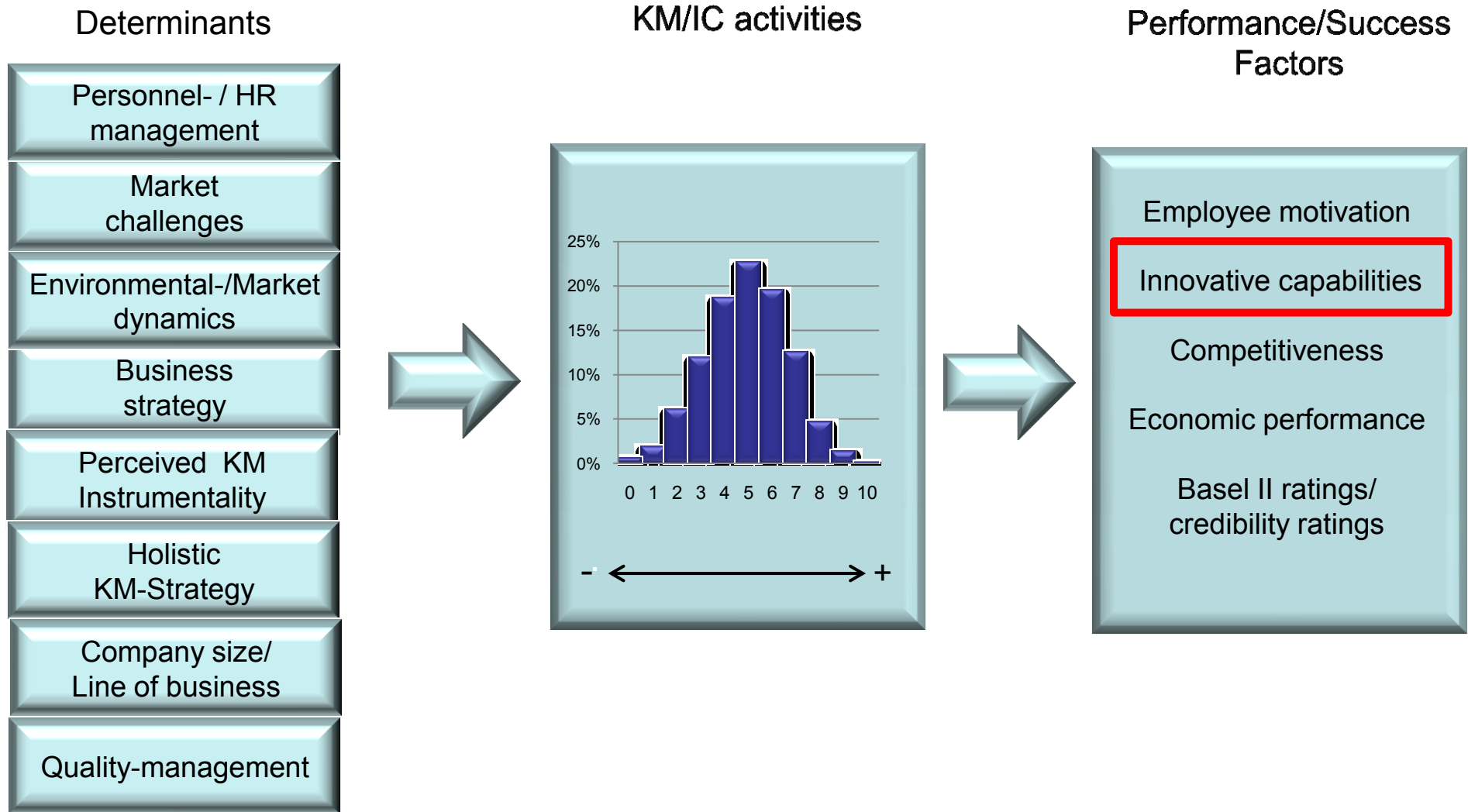
... feel excited in their job.

.321**

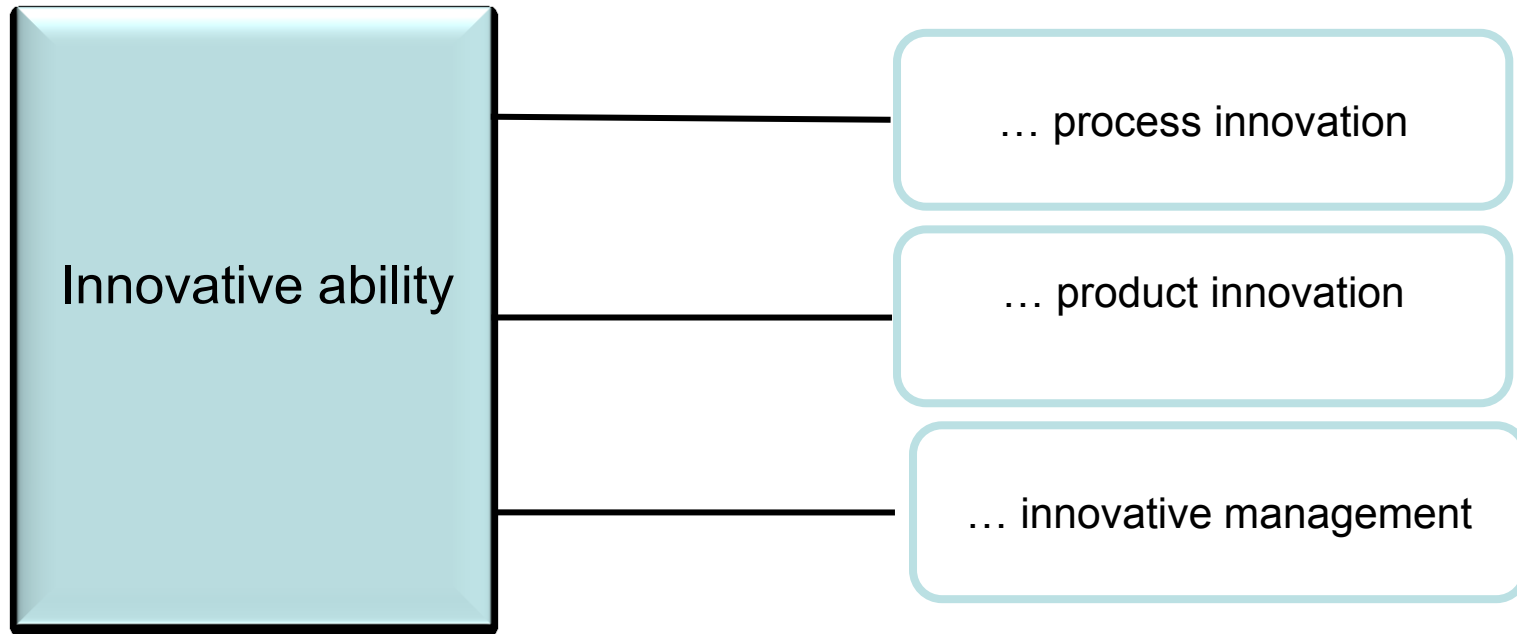
Employees showed a great deal of activity in this organization lately

.298**

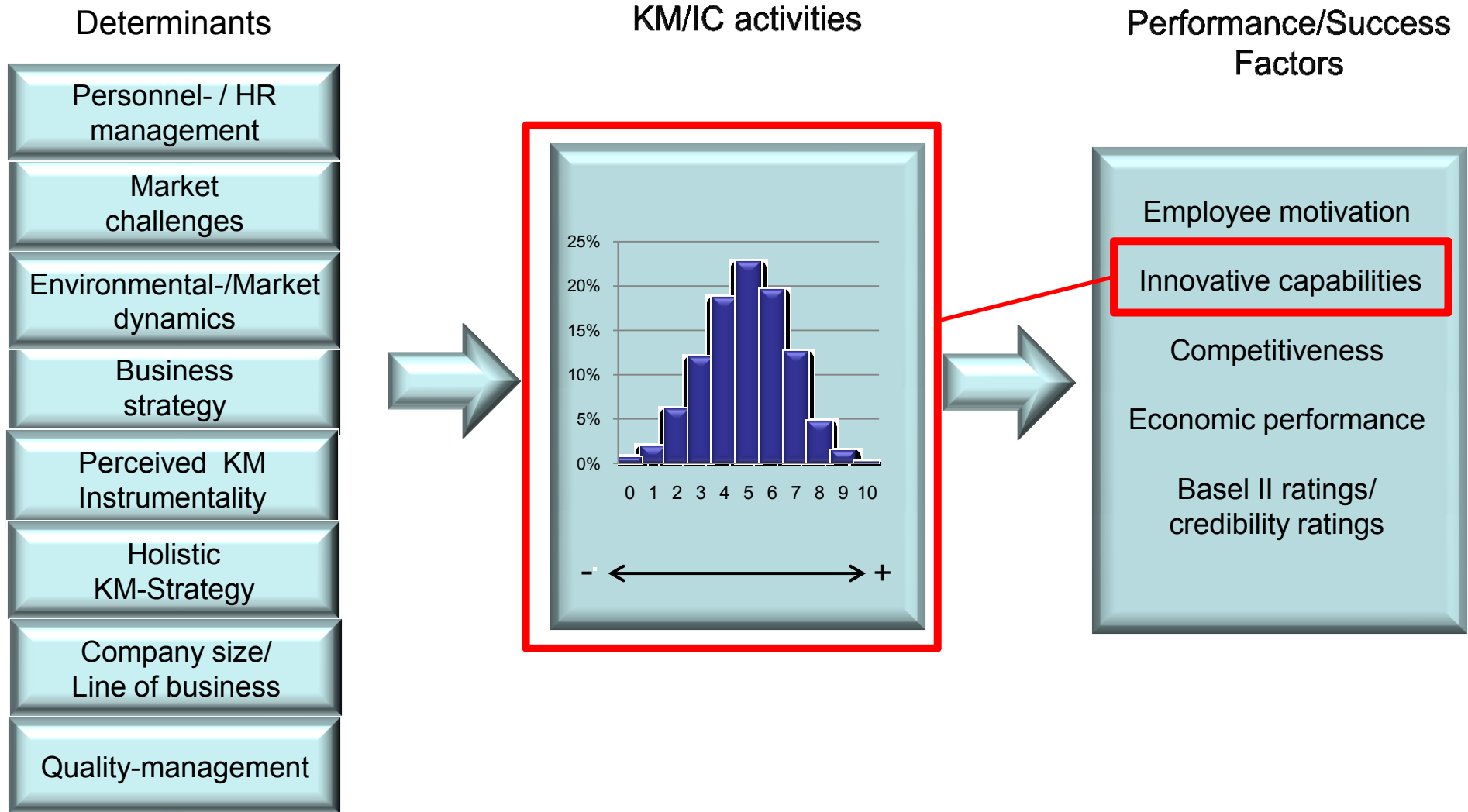
IC-MANAGEMENT RESEARCH MODEL



INNOVATIVE ABILITY?



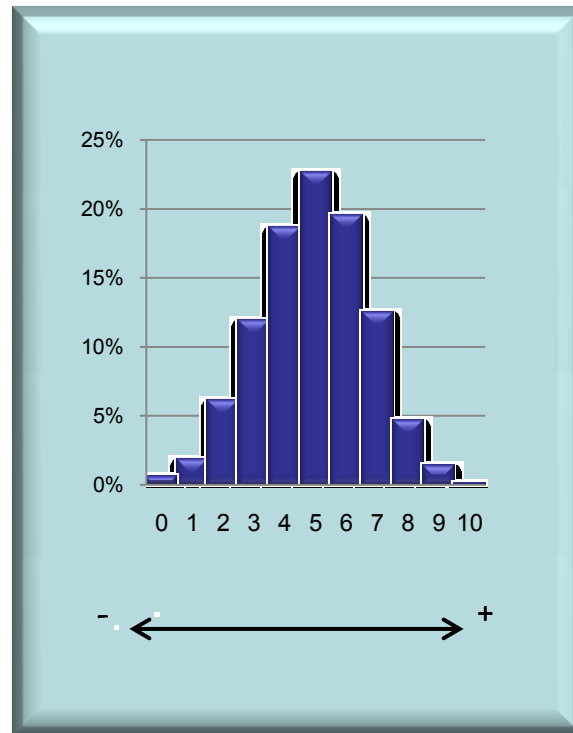
IC-MANAGEMENT RESEARCH MODEL



KM-ACTIVITIES AND INNOVATIVE CAPABILITIES



KM/IC-Activities



Innovative capabilities

Competitive advantage through new processes and methods

.474**

new management approaches in comparison with main competitors

.440**

first to market with new applications/services/products

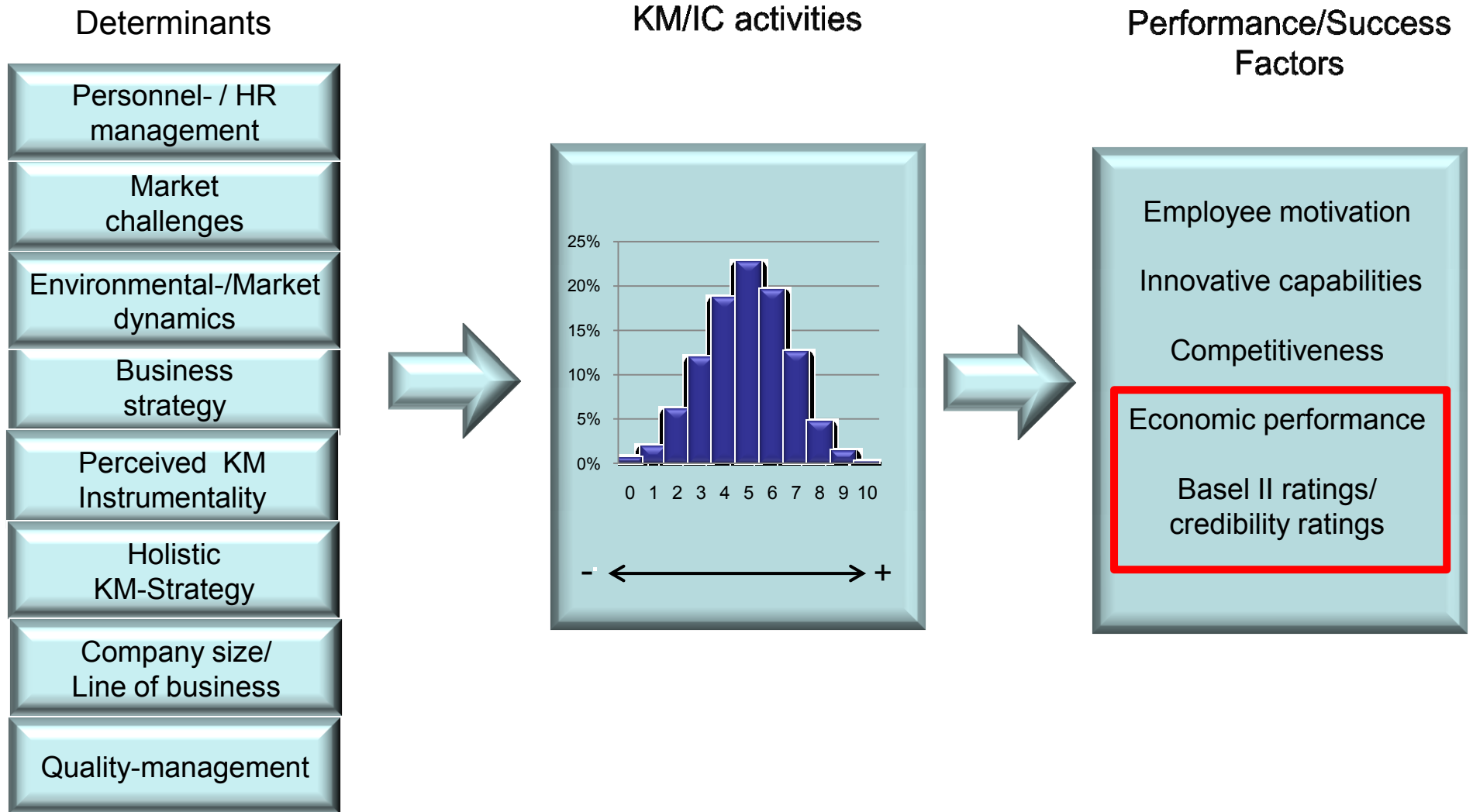
.415**

...first on market with innovative products in comparison with main competitors

.403**

n=3401

IC-MANAGEMENT RESEARCH MODEL



QUESTIONNAIRE DIMENSIONS: ECONOMIC PERFORMANCE

Performance indicator i.R. to main competitioners

Expected development of number of employees

Categories of turnover in the firm (11)

Method of accounting

Total assets

Capital endowment

Equity ratio

Pre – tax profit for the year 2009

Liabilities/ business assets

Number of customs

50% annual turnover / custom

Proportion of main customers

Dependence on main supplier

Number of main competitioners

Economic situation i.R. to sector

Bad debt losses

Duration for the payment of invoices

Accounts for annual planning

Controlling

denial of credit in the last 2 years

Credit – Worthiness 20% annual turnover

Documents (balance sheets etc.) for house bank

Overdrafts of loan limit

Liability in an affiliation group

Existent Ratings

Received Rating

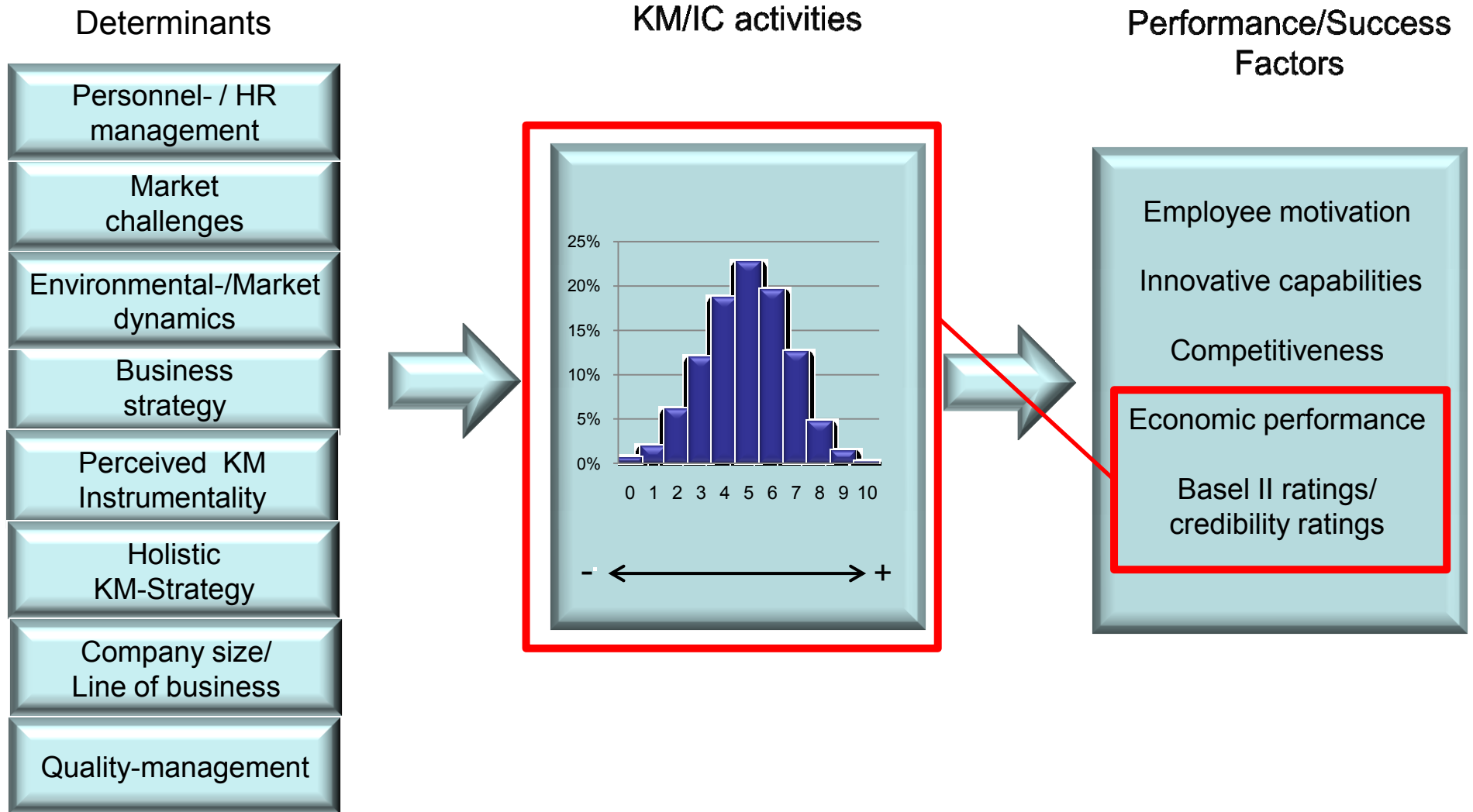
State

Postcode

E-Mail

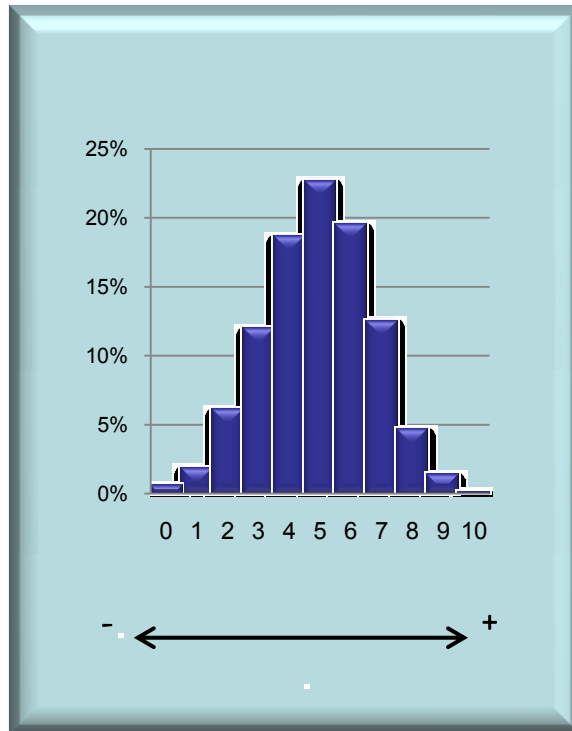
Participation – readiness for further studies

IC-MANAGEMENT RESEARCH MODEL



KM/IC-ACTIVITY AND BUSINESS PERFORMANCE INDICATORS

KM/IC Activity



Business Performance

.187**

Market share
last 3 years

.142**

Quantity of customers
last 3 years

.140**

Return on capital
last 3 years

.126**

Company profits
last 3 years

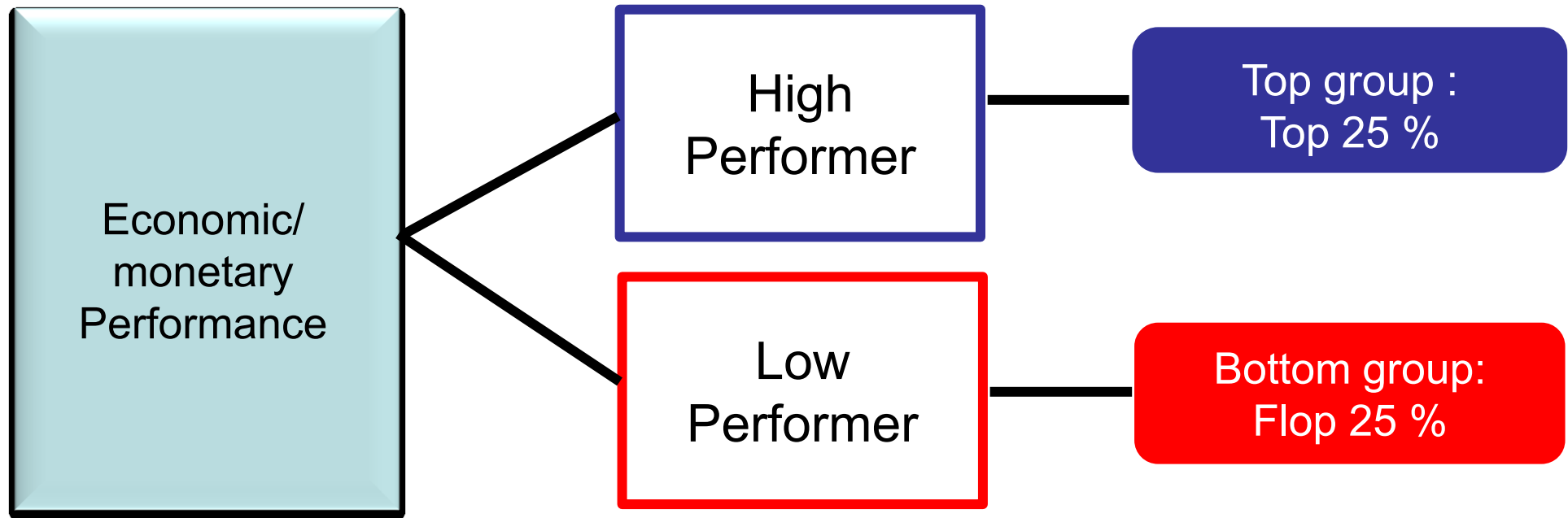
.116**

total revenues
last 3 years

n=3401



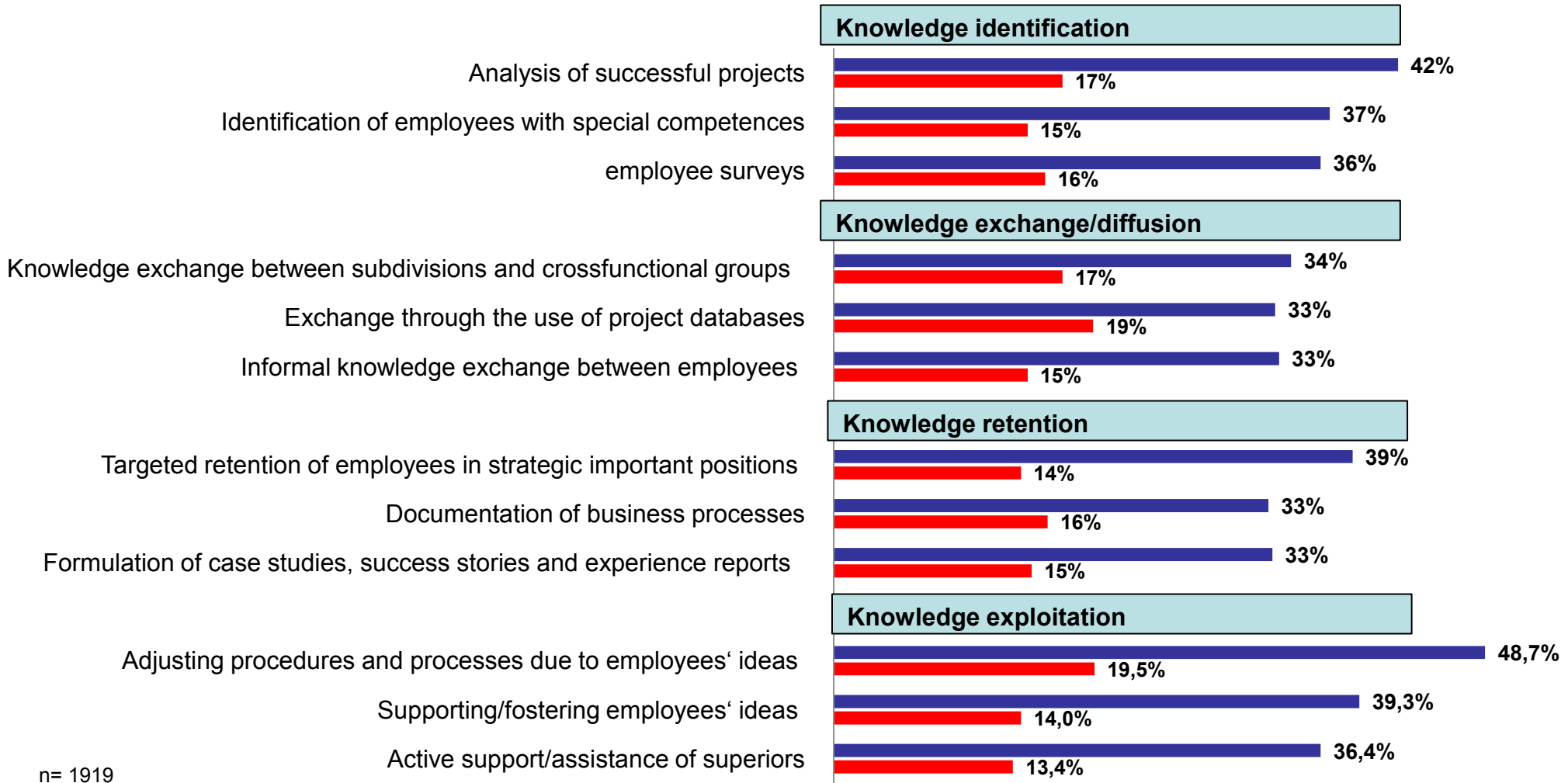
HIGH PERFORMER AND LOW PERFORMER



HIGH/LOW PERFORMER OVERALL KM/IC MANAGEMENT ACTIVITIES



■ High Performer ■ Low Performer



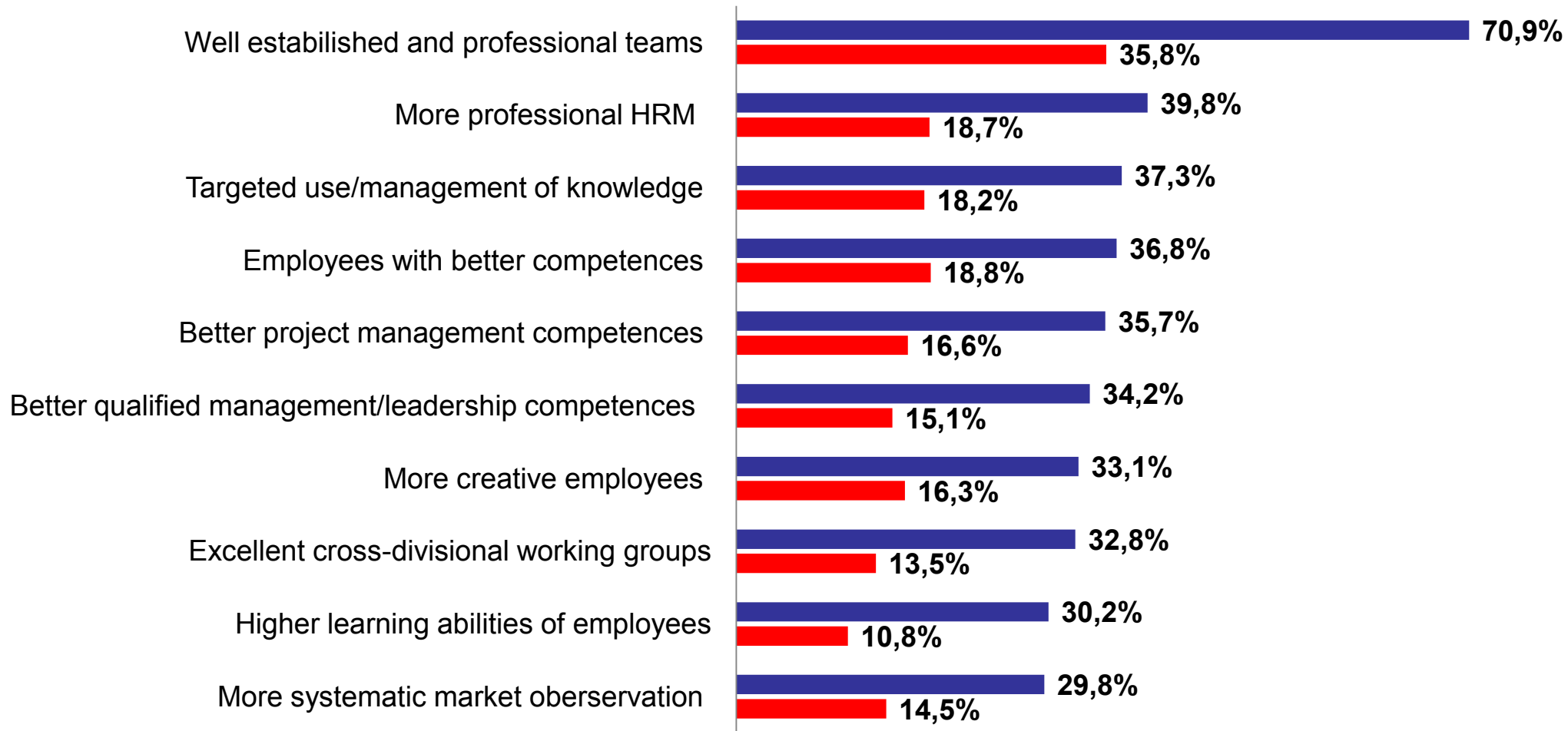
n= 1919

WHAT CORE COMPETENCIES DO HIGH PERFORMER HAVE?



Top 10 core competencies

■ High Performer ■ Low Performer



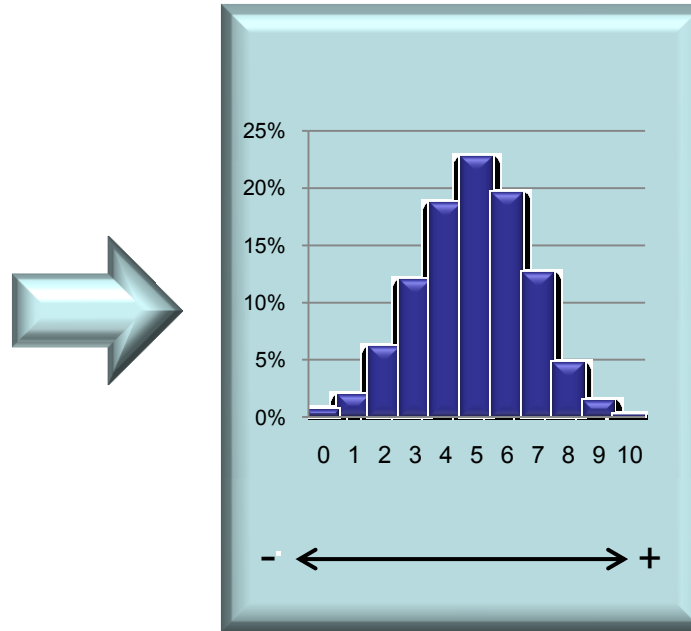
IC-MANAGEMENT RESEARCH MODEL



Determinants



KM/IC activities



Performance/Success Factors



EXPLANATORY MODEL KM/IC MANAGEMENT

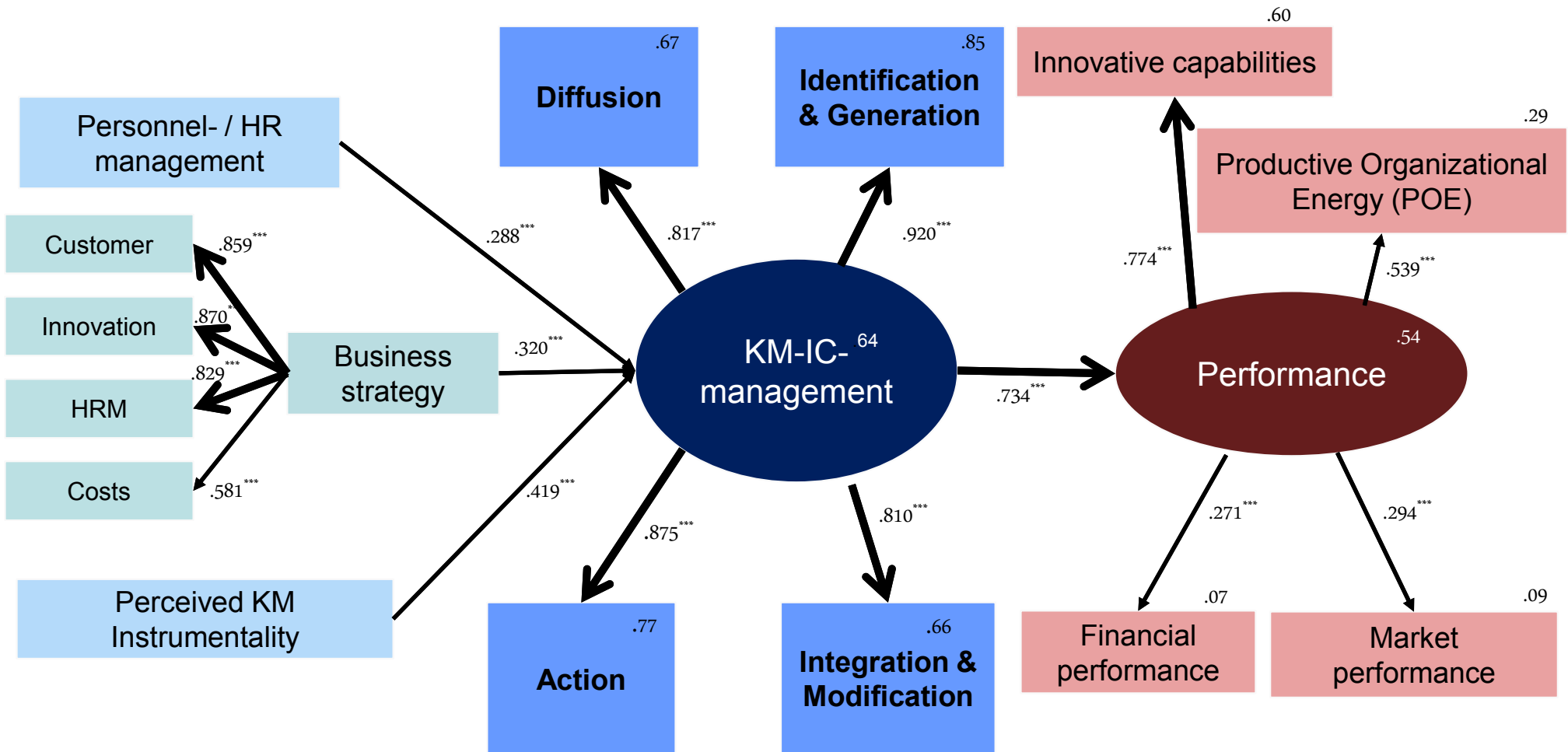
(Structural Equation Model)



Determinants

KM/IC-Activity

Performance



*** = ,001 n=3401

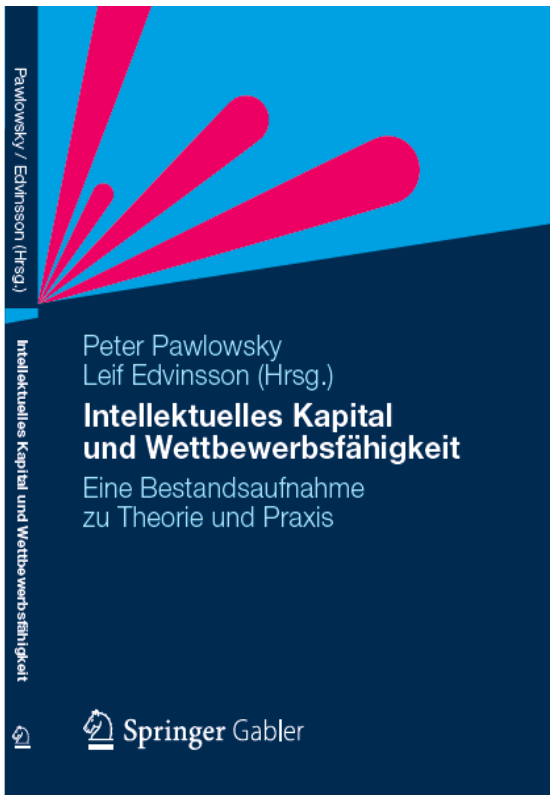


1. Relevance of Intellectual Capital Management (ICM)
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CONCLUSIONS



- KM/IC activities differ less according to company size and lines of business than corporate strategies and core competencies (Explanatory concepts)
- KM/IC ist especially effective in supporting knowledge intensive, strong HR driven, quality oriented strategies
- Instrumentality of KM/IC shows especially in relation to employee motivation and innovative capabilities
- KM/IC activities are significantly correlated with business performance indicators
- High-Performing Companies show significant differences in KM/IC/HR Management



www.tu-chemnitz.de/BWL_6

Univ.-Prof. Dr. Peter Pawlowsky, Aylin Gözalan , MA
Institute for Personnel Management and Leadership Studies
Chemnitz University of Technology

