

# Competitive Advantage Knowledge Management 2010

## IC & KM Practices in German Companies



The Franco-German Round Table on Intangibles 2012- 2014

The First workshop agenda

Paris, September 26

RUPRECHT-KARLS-  
UNIVERSITÄT  
HEIDELBERG



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Institute for Personnel Management and Leadership Studies  
Chemnitz University of Technology



# Autumn 1973



Radtour auf der Autobahn 1973

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

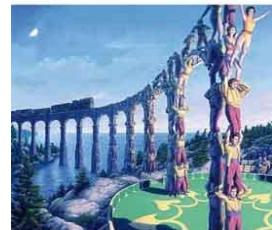


*„The ability to learn faster than your competitors may be the only sustainable competitive advantage“*

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



## **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/Elastizität:**

Fähigkeit eines Systems die ursprüngliche Form anzunehmen nachdem es gebogen, gedehnt oder verdichtet wurde (2)

## **Absorptive capacity**



### **Absorptive capacity:**

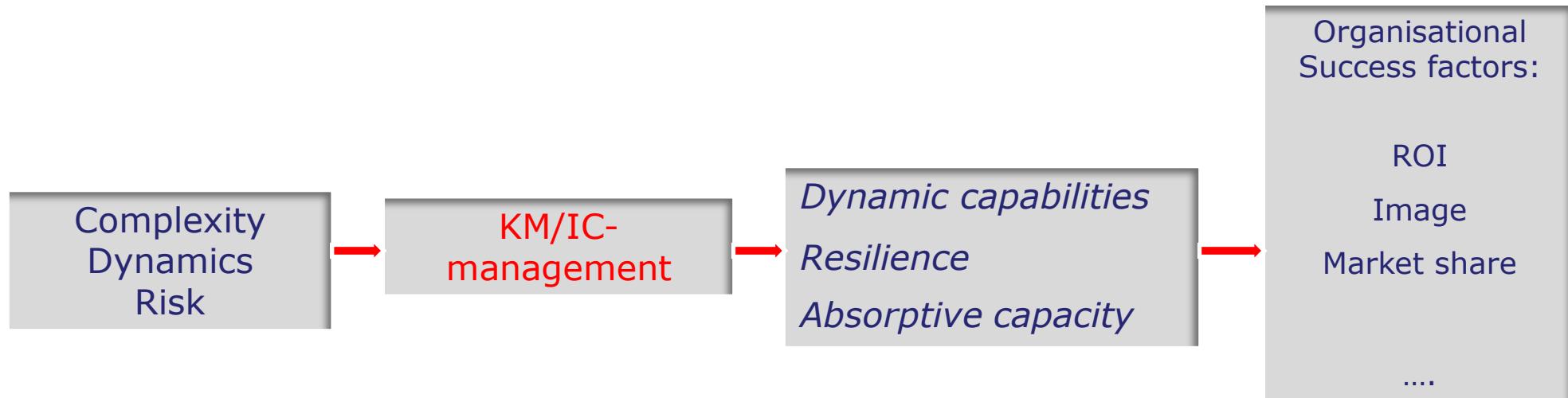
"the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends is critical to its innovative capabilities" (3)

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

(2) Hollnagel et al. 2006

(3) Cohen et. al. (1990),.

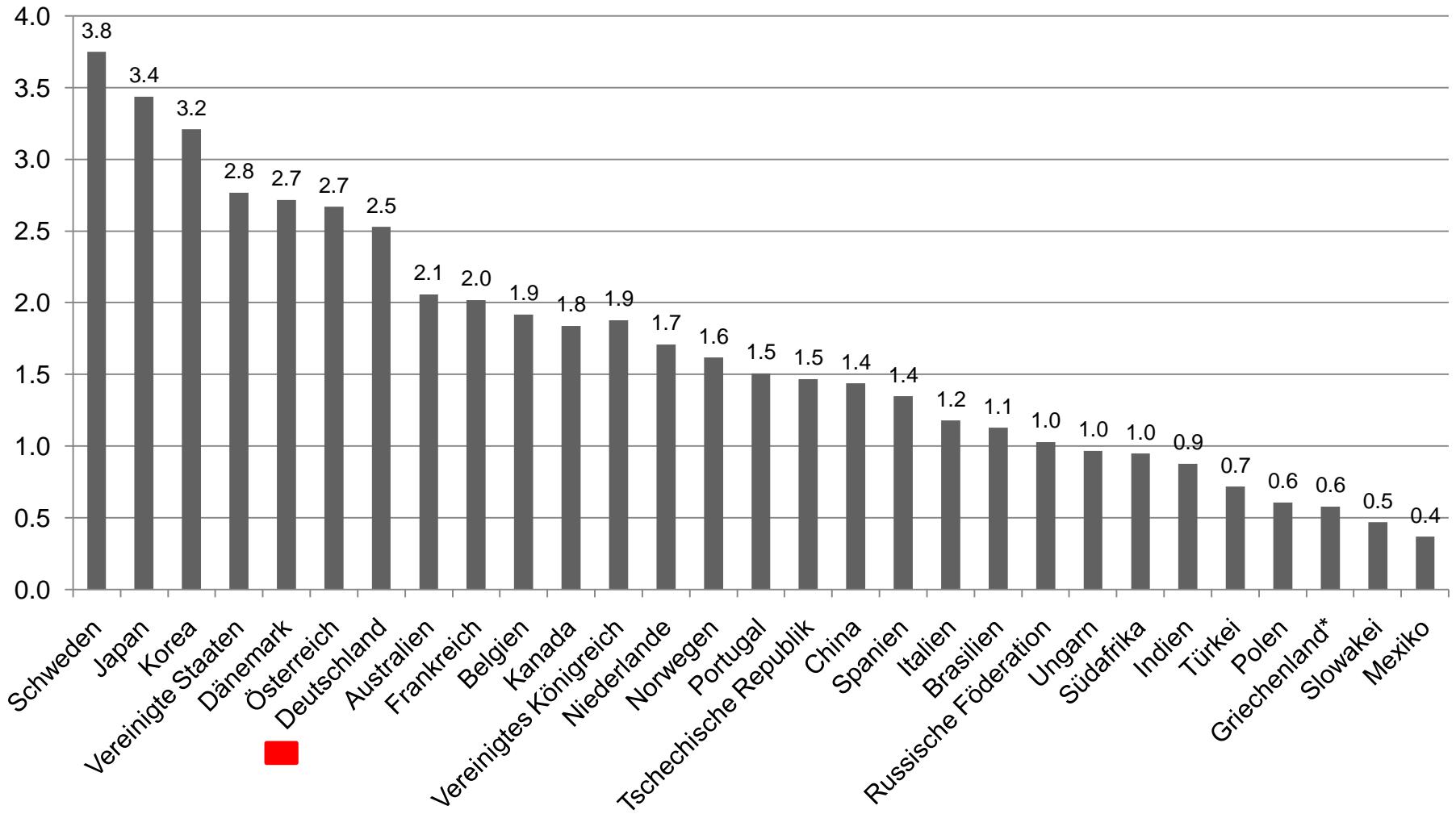
# Context: strategic management research



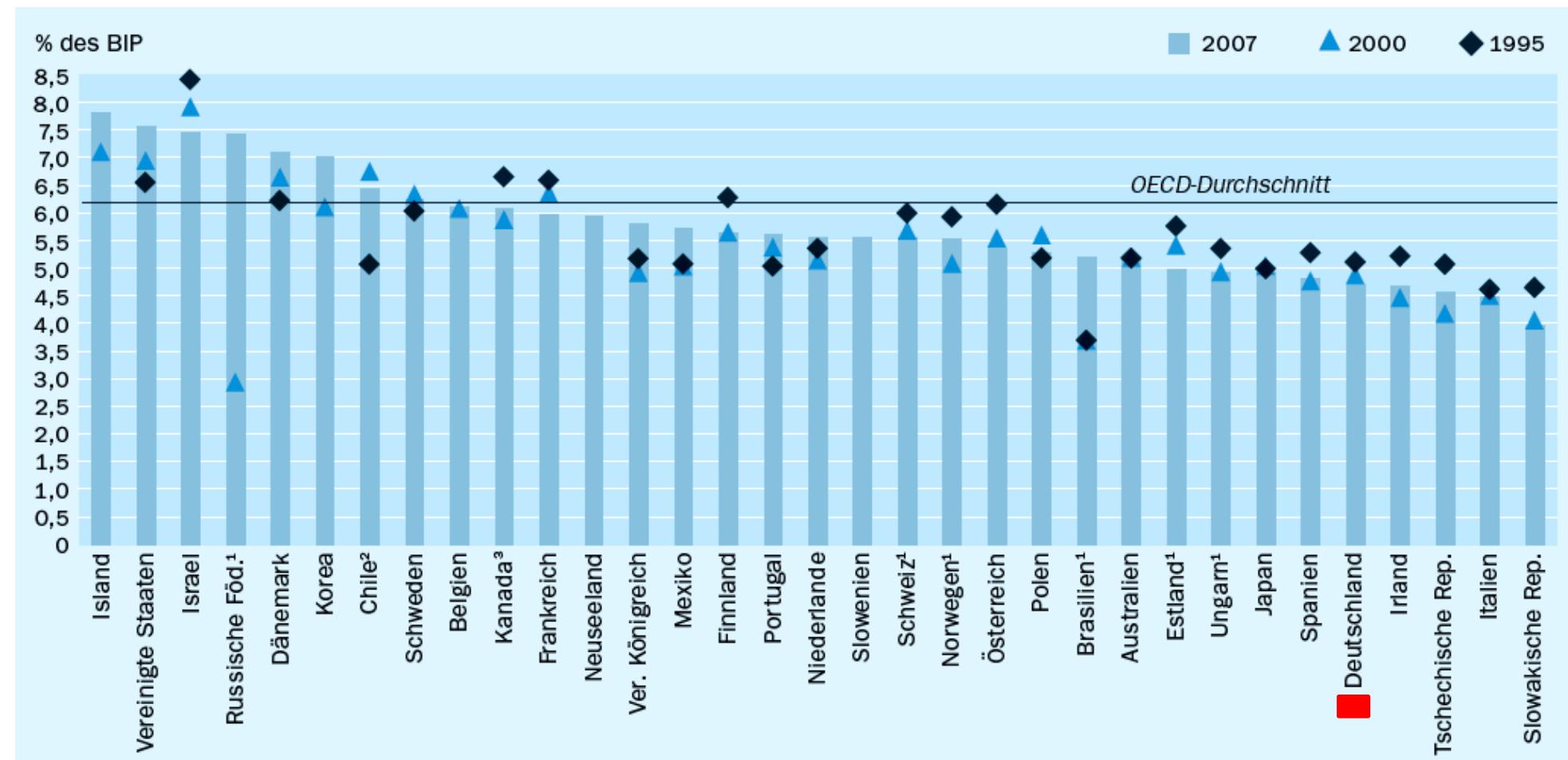
# Anteil der Ausgaben für Forschung und Entwicklung 2008 im Ländervergleich (in Prozent des BIP)



Ausgaben für Forschung und Entwicklung in %



# Ausgaben für Bildungseinrichtungen aller Bildungsbereiche als Prozentsatz des BIP (1995, 2000, 2007)

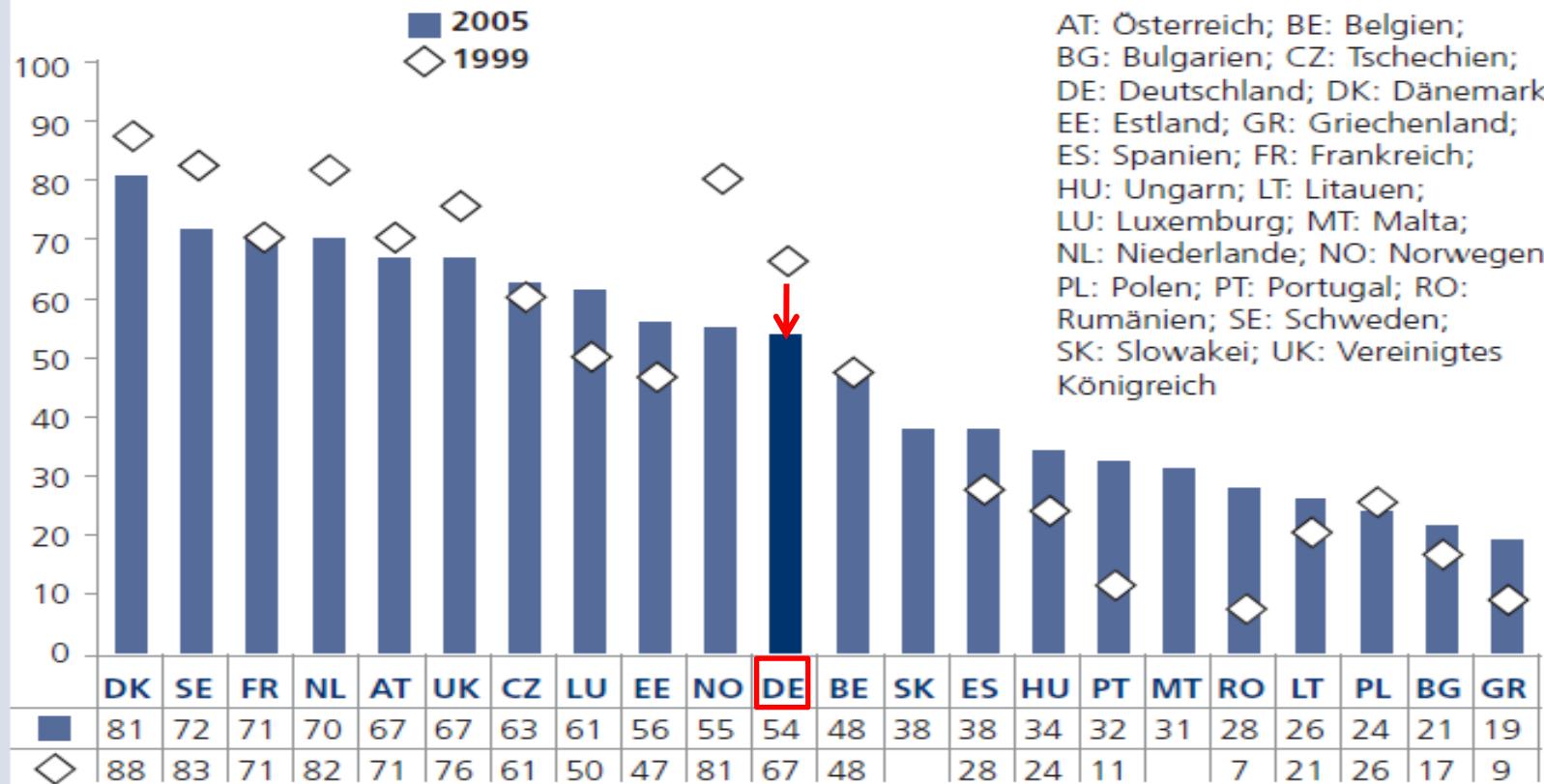


1. Nur öffentliche Ausgaben (für die Schweiz nur im Tertiärbereich). 2. Referenzjahr 2008 anstatt 2007. 3. Referenzjahr 2006 anstatt 2007.

Anordnung der Länder in absteigender Reihenfolge der mit Mitteln aus öffentlichen und privaten Quellen finanzierten Ausgaben für Bildungseinrichtungen im Jahr 2007.

Quelle: OECD. Tabelle B2.1. Hinweise s. Anhang 3 unter [www.oecd.org/edu/eag2010](http://www.oecd.org/edu/eag2010). StatLink: <http://dx.doi.org/10.1787/888932310301>

# Anteil der Unternehmen mit betrieblichen Weiterbildungskursen 1999-2005 (in Prozent aller Unternehmen)



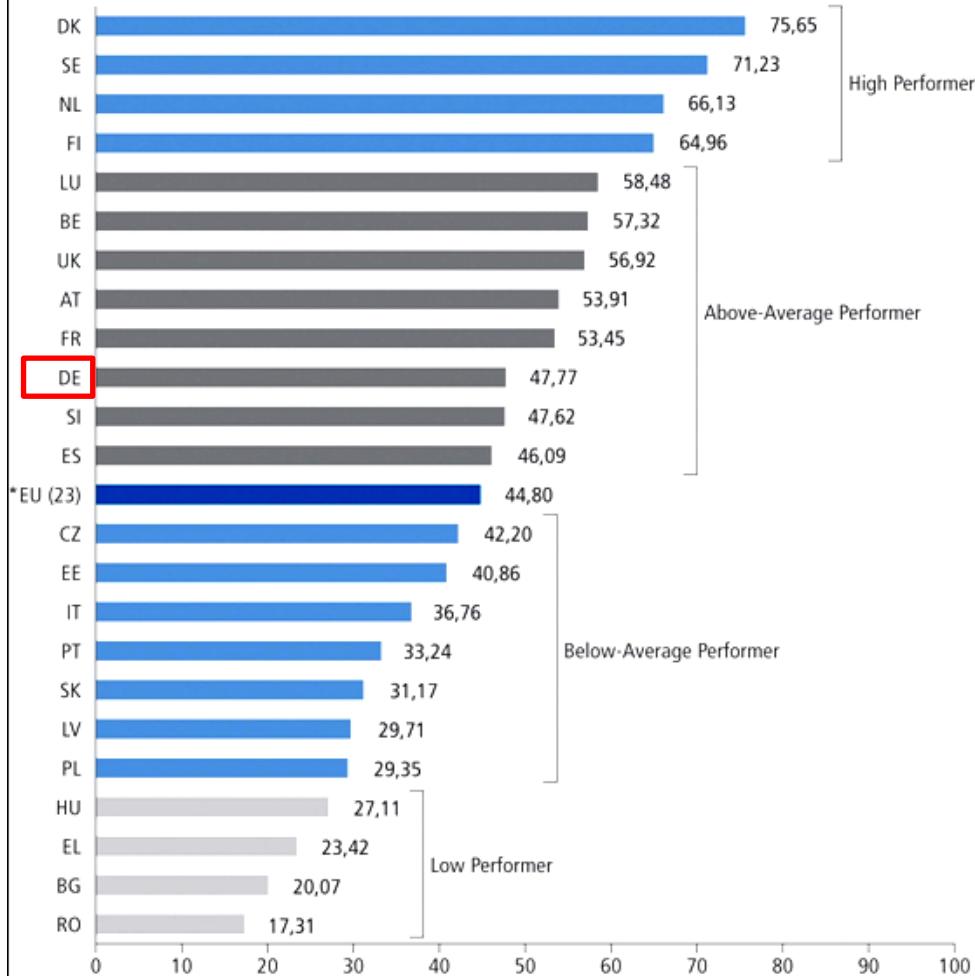
Quelle: Eurostat Datenbank New Cronos, CVTS2/CVTS3 (Abrufdatum 19.11.2007)

AT: Österreich; BE: Belgien;  
BG: Bulgarien; CZ: Tschechien;  
DE: Deutschland; DK: Dänemark;  
EE: Estland; GR: Griechenland;  
ES: Spanien; FR: Frankreich;  
HU: Ungarn; LT: Litauen;  
LU: Luxemburg; MT: Malta;  
NL: Niederlande; NO: Norwegen;  
PL: Polen; PT: Portugal; RO:  
Rumänien; SE: Schweden;  
SK: Slowakei; UK: Vereinigtes  
Königreich

# Bertelsmann Stiftung ELLI Index 2010



ELLI-Index



\* Ursprünglich beinhaltet der Datensatz die EU 27 Länder. Irland, Zypern und Litauen konnten wegen unvollständiger Datensätze in der Analyse nicht berücksichtigt werden.

Quelle: Bertelsmann Stiftung

| Bertelsmann Stiftung

Der **European Lifelong Learning Index (ELL)**; Europäischer Index des lebenslangen Lernens)

...misst einmal pro Jahr den **Stand des Lernens in den verschiedenen Lebensphasen**, sozusagen „von der Wiege bis zur Bahre“, und in den **verschiedenen Lernumgebungen** Schule, Gemeinschaft, Arbeitsplatz und Privatleben.

Der ELLI-Index erfasst das Lernen in vier verschiedenen Bereichen, die dem von Jacques Delors entworfenen UNESCO-Rahmen entstammen:

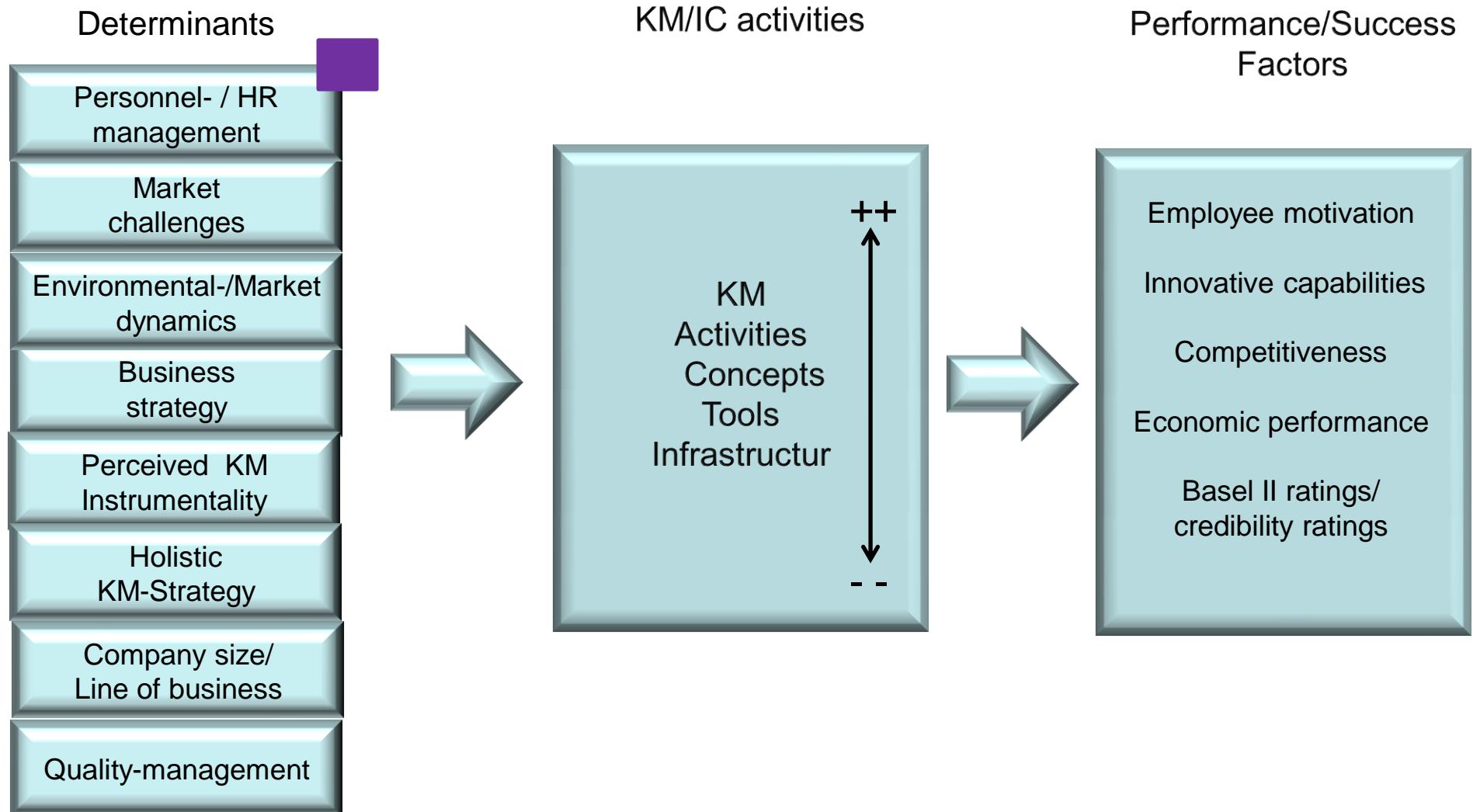
- **Lernen, zusammen zu leben,**
- **Lernen, Wissen zu erwerben,**
- **Lernen, das Leben zu gestalten, und**
- **Lernen, zu handeln.**





1. Objectives of the study
2. Research design
3. Questionnaire
4. Results
5. Conclusions

# Research Model KM 2010



# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

Environmental-/Market dynamics

Business strategy

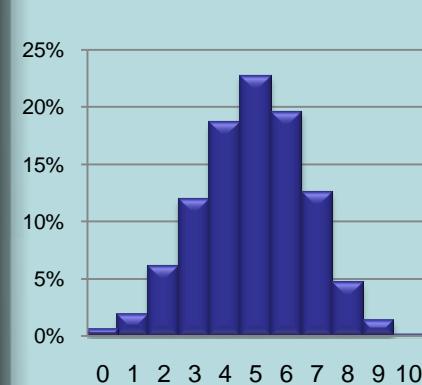
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM/IC activities



## Performance/Success Factors

Employee motivation

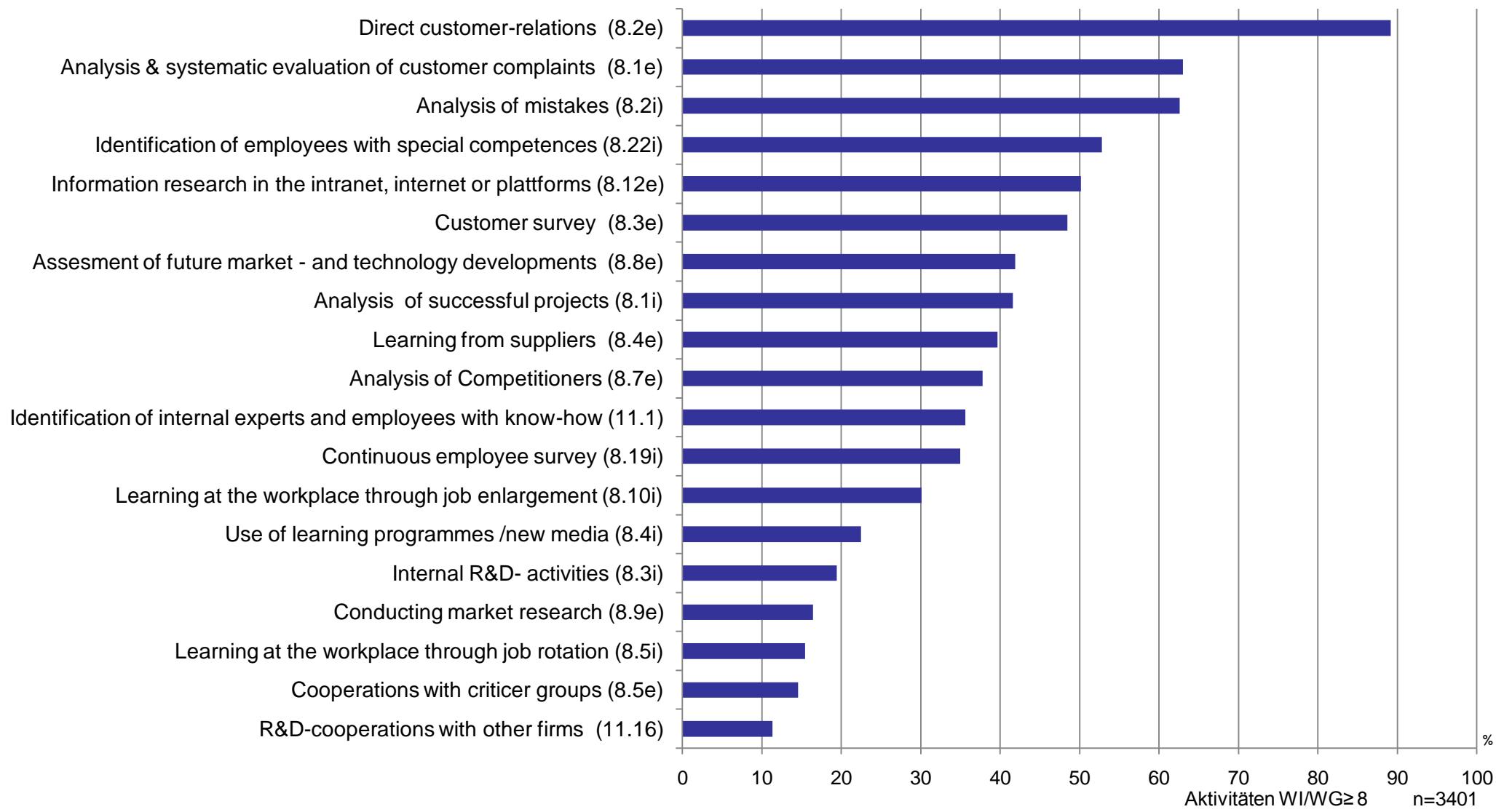
Innovative capabilities

Competitiveness

Economic performance

Basel II ratings/  
credibility ratings

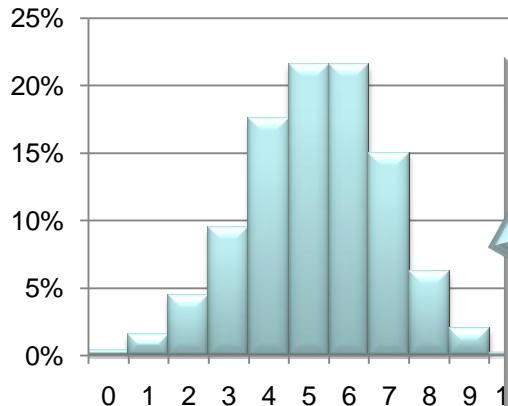
# KM-Activities: Knowledge identification/ -development



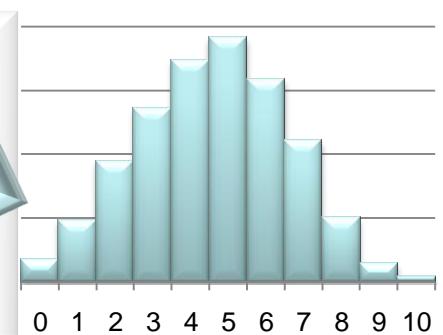
# Overall KM-Activities



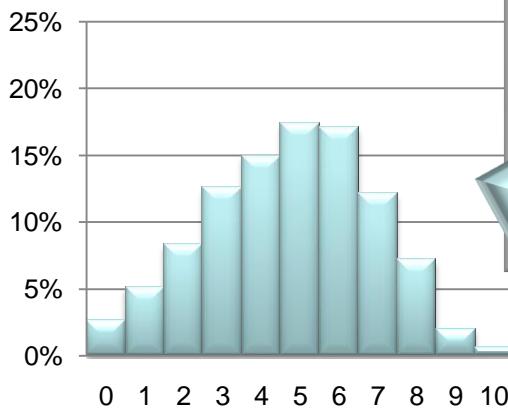
Wissensidentifikation/-generierung



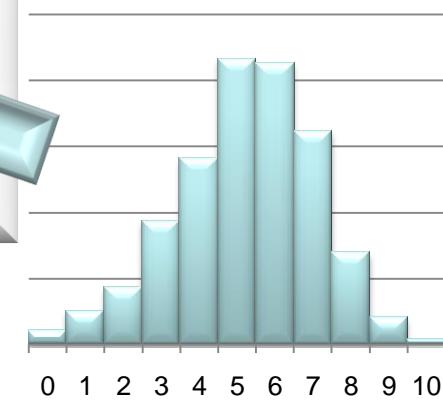
Wissensdiffusion



Wissensbewahrung

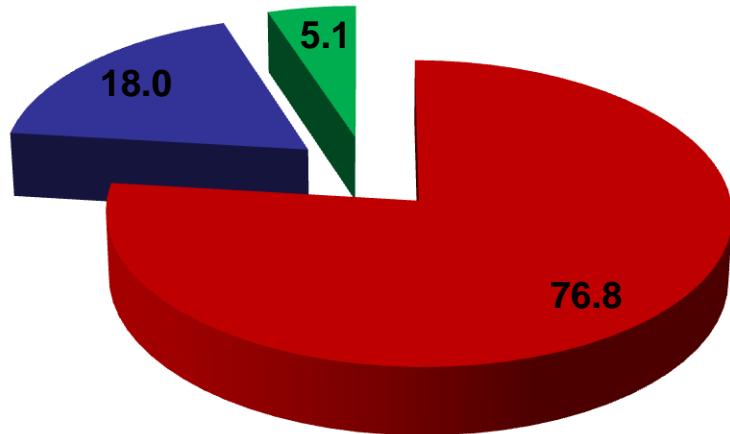


Wissensumsetzung



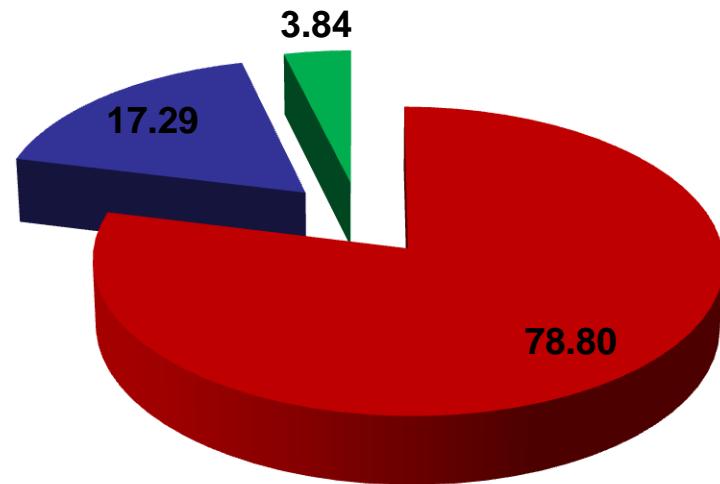
# Company size in sample and national distribution

Sample: company size



■ 10 - 49 MA ■ 50 - 249 MA ■ 250 und mehr MA

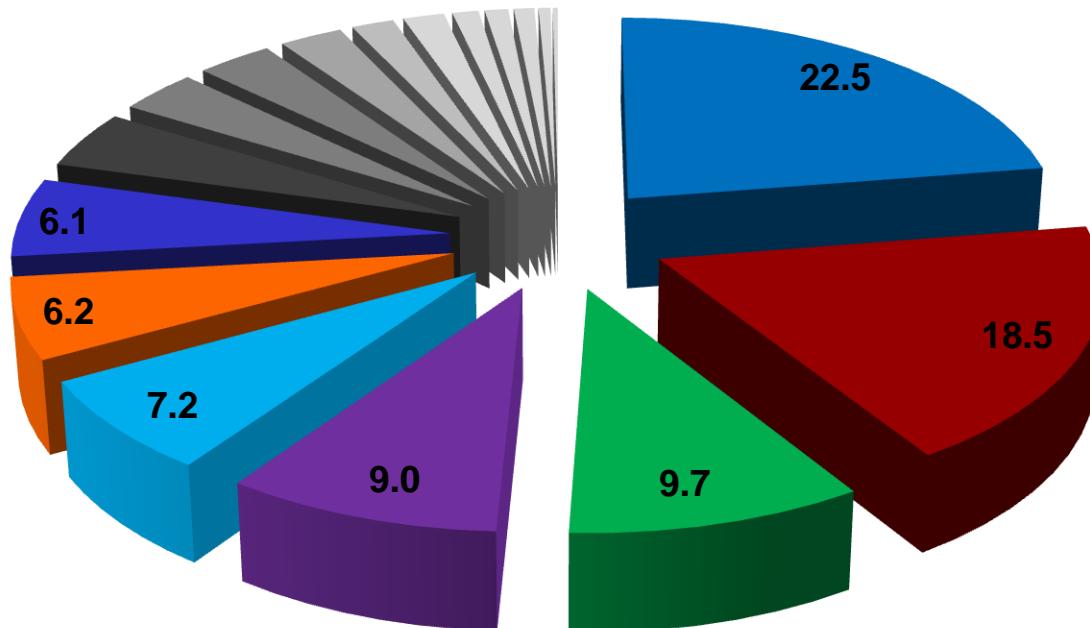
Distribution of company size in Germany:



■ 10-49 MA ■ 50-249 MA ■ 250 und mehr MA

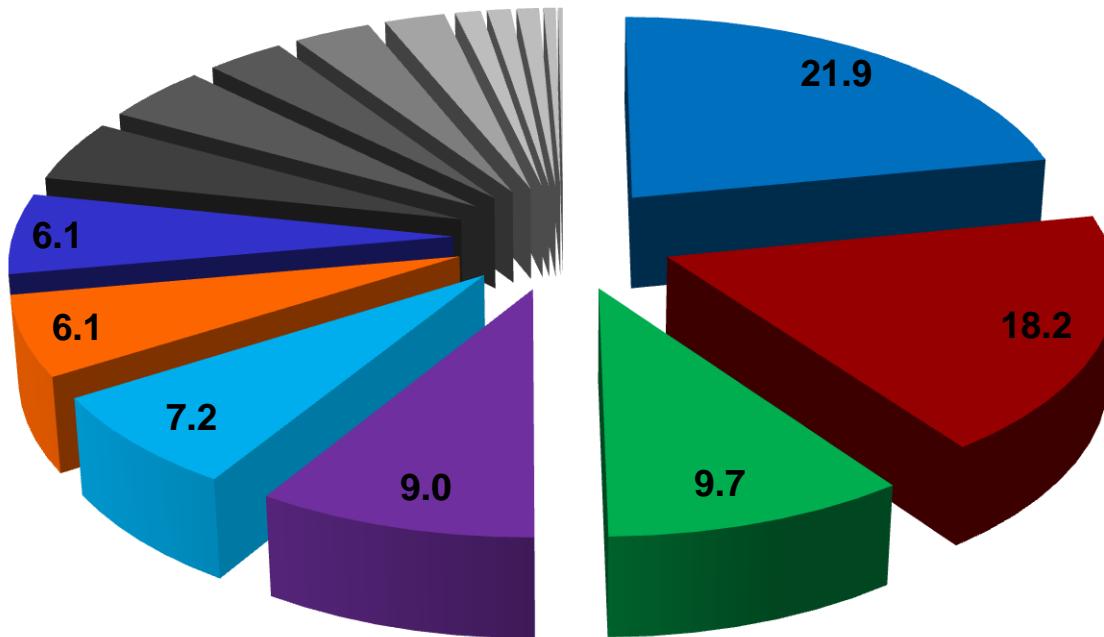


# Sample: Line of Business



- 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  
und technischen Dienstleistungen
- Verkehr und Lagerei
- Erbringung von sonstigen wirtschaftlichen Dienstleistungen
- Erziehung und Unterricht
- Gastgewerbe
- Erbringung von sonstigen Dienstleistungen
- Information und Kommunikation
- Erbringung von Finanz- und Versicherungsdienstleistungen
- Wasserversorgung etc.
- Grundstücks- und Wohnungswesen
- Kunst, Unterhaltung und Erholung
- Energieversorgung
- Bergbau und Gewinnung von Steinen und Erden

# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

Environmental-/Market dynamics

Business strategy

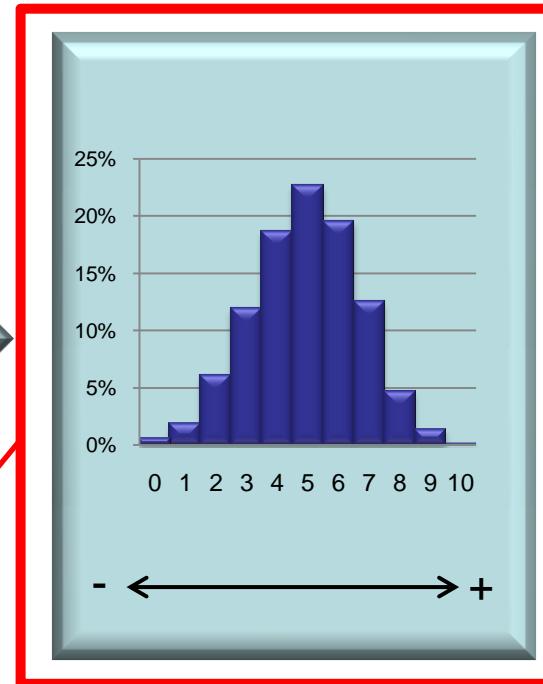
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM Activities



## Performance/Success Factors

Employee motivation

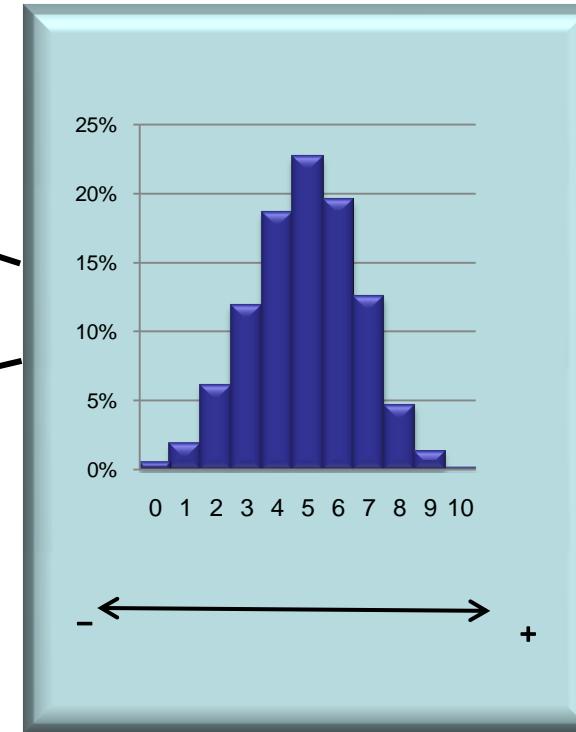
Innovative capabilities

Competitiveness

Economic performance

Basel II ratings/  
credibility ratings

# KM-Activities and Company Size/Line of Business



n = 3401      korr R<sup>2</sup>: .072

# Research Model KM 2010



## Determinants

Personnel- / HR management

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Business strategy

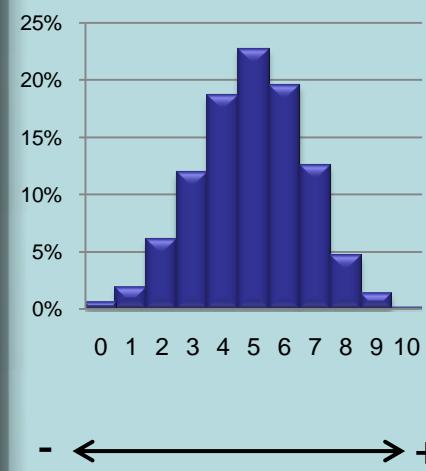
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM Activities



## Performance/Success Factors

Employee motivation

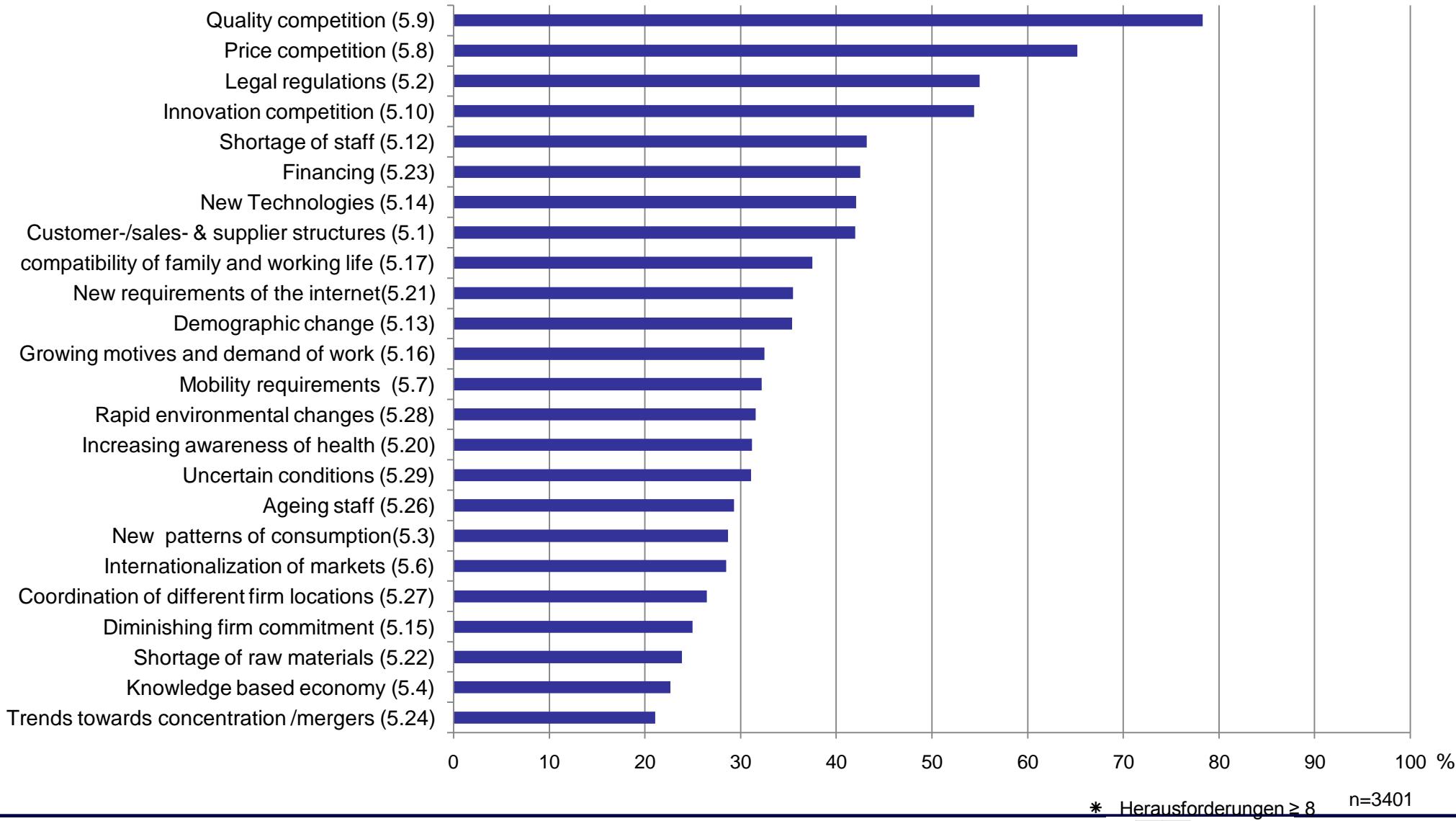
Innovative capabilities

Competitiveness

Economic performance

Basel II ratings/  
credibility ratings

# Perceived market challenges (German companies)



# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

Environmental-/Market dynamics

Business strategy

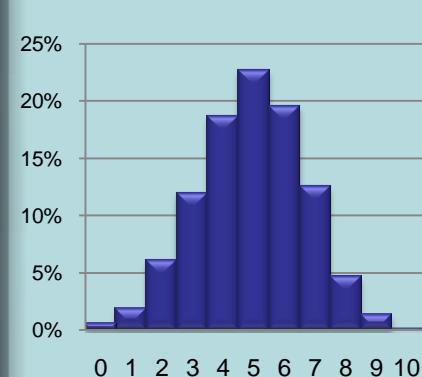
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM Activities



## Performance/Success Factors

Employee motivation

Innovative capabilities

Competitiveness

Economic performance

Basel II ratings/  
credibility ratings

# KM Activities and perceived market challenges



Knowledge based economy

.436\*\*

Innovation competition

.387\*\*

Heterogeneous work force

.371\*\*

Health Issues

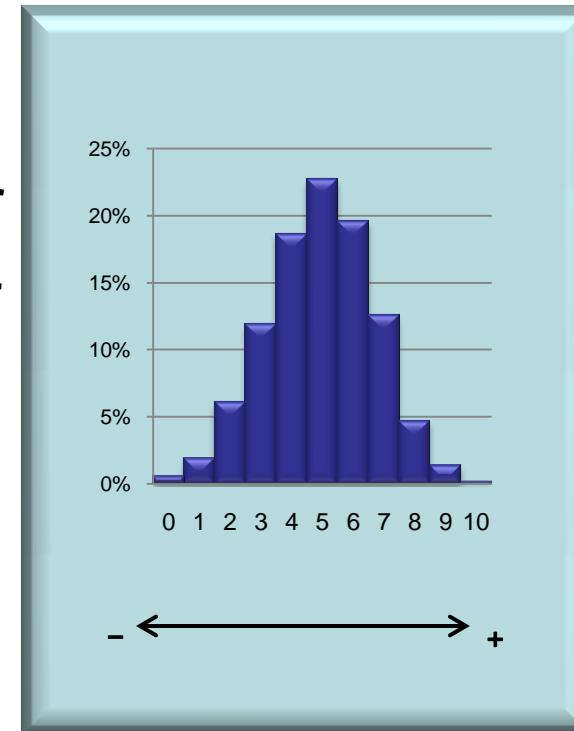
.361\*\*

Speed of environmental changes

.359\*\*

Increasing employee demands

.349\*\*



n=3401

# Research Model KM 2010



## Determinants

Personnel- / HR management

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Business strategy

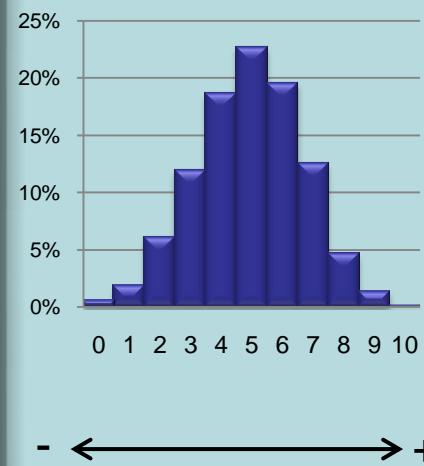
Perceived KM Instrumentality

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

# Business Strategy (core competencies) in German companies



## Competitive advantages compared to main competitors

- Higher Customer satisfaction (6.20)
- Close customer contact (6.22)
- Higher Quality (6.10)
- Firm flexibility (6.21)
- Well established & professional teams (6.2)
- Loyalty and motivation of employees (6.7)
- Identification/ implementation of customer demands (6.1)
- Better Know-how (6.18)
- Individual - customized solutions (6.14)
- Better employee competences (6.6)
- Qualified management/leadership competences (6.29)
- Use of corporate knowledge (6.16)
- Creative employees(6.23)
- Better networks/contacts
- Faster development of new offers (6.11)
- Technichal maturity of products and services(6.8)
- Higher learning abilities of employees (6.3)
- Shorter delivery times (6.15)
- Cross-divisional working groups(6.24)
- More innovative products (6.12)
- Professional human resources work (6.28)
- Better project management competences (6.25)
- Systematic market observation (6.26)
- Low production costs (6.13)
- Favorable prices (6.9)

Geschäftsstrategie ≥8

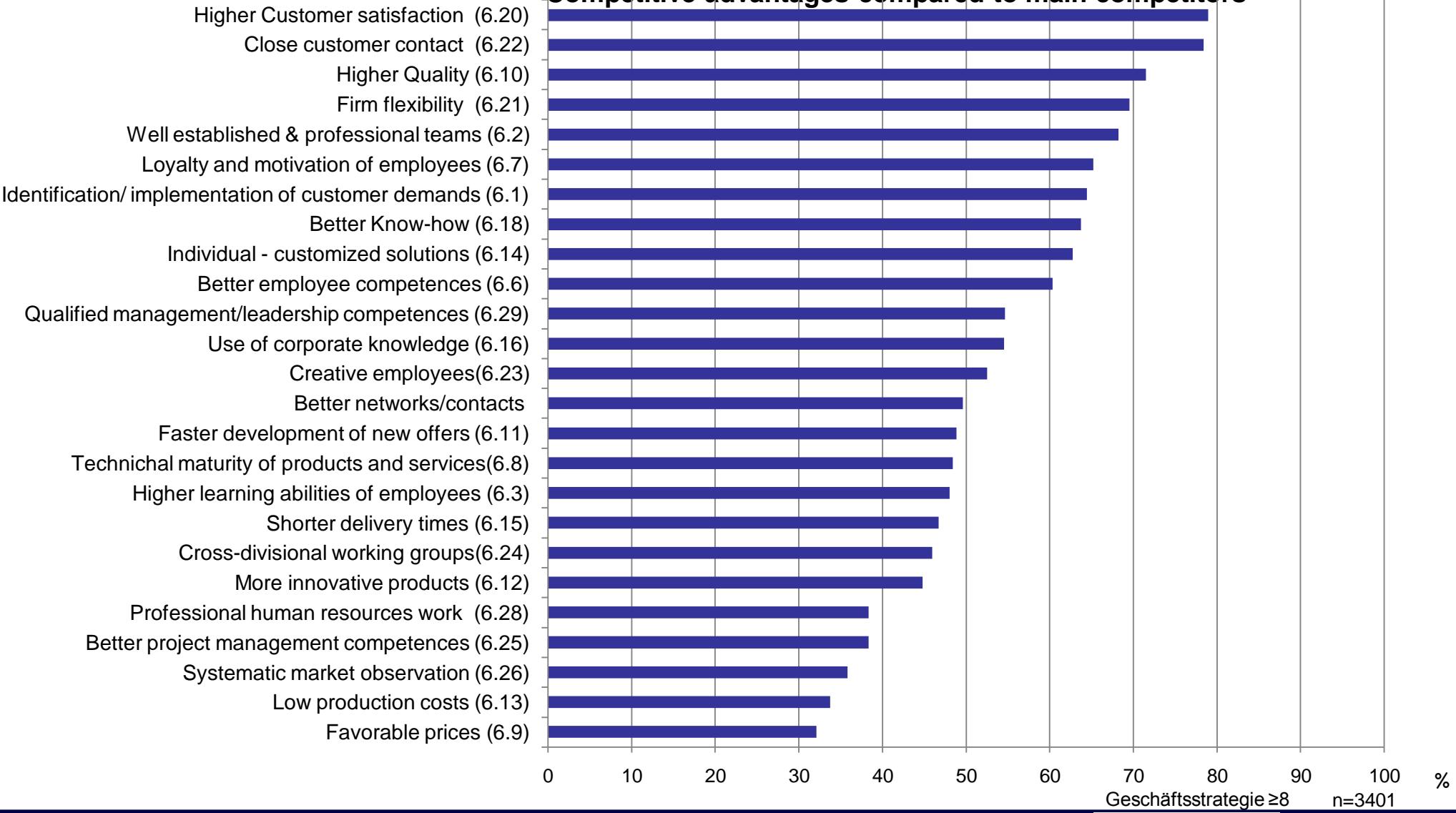
n=3401

%

# Business Strategy (core competencies) in German companies



## Competitive advantages compared to main competitors



# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

Environmental-/Market dynamics

Business strategy

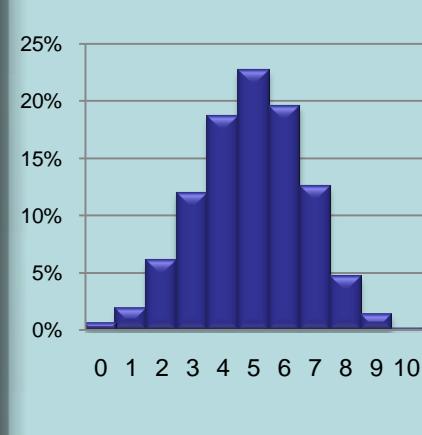
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM/IC activities



## Performance/Success Factors

Employee motivation

Innovative capabilities

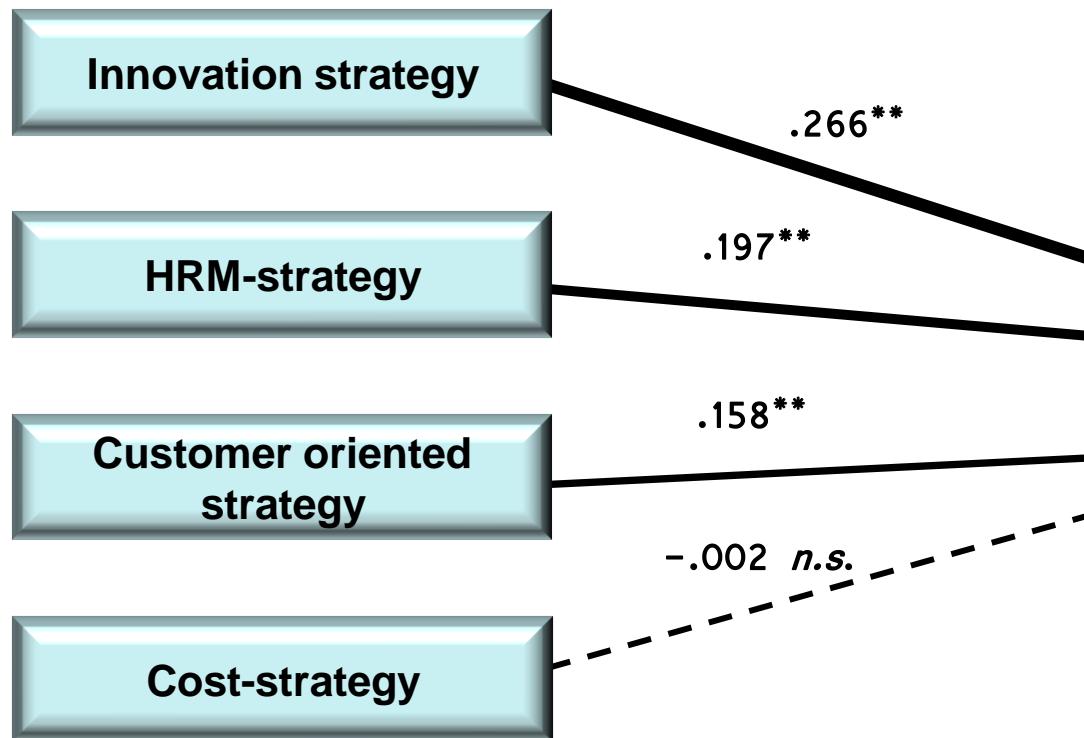
Competitiveness

Economic performance

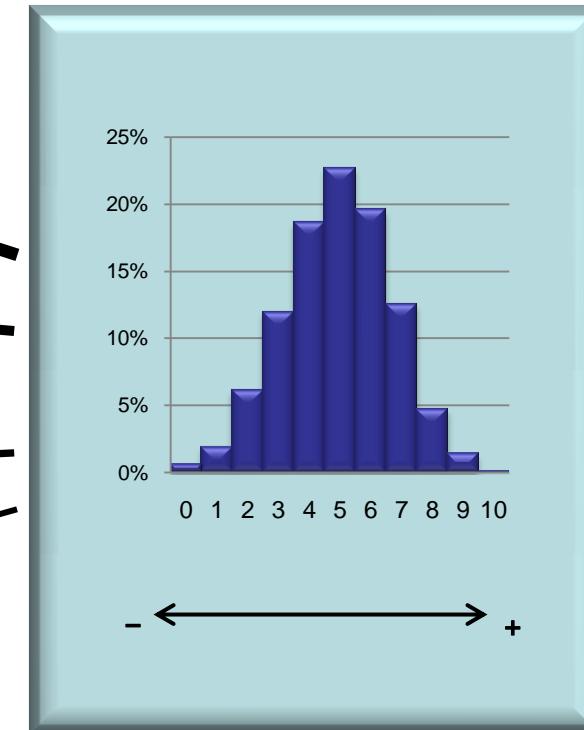
Basel II ratings/  
credibility ratings

# KM activities and business strategy (Regression)

Business strategy



KM Activities



n = 3401 korr. R<sup>2</sup> = .259

# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

Environmental-/Market dynamics

Business strategy

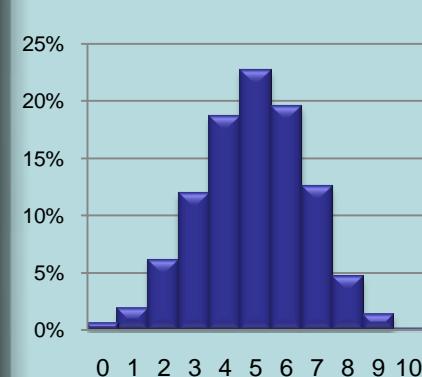
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM/IC activities



## Performance/Success Factors

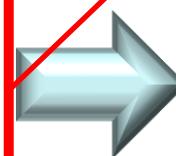
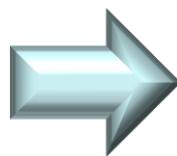
Employee motivation

Innovative capabilities

Competitiveness

Economic performance

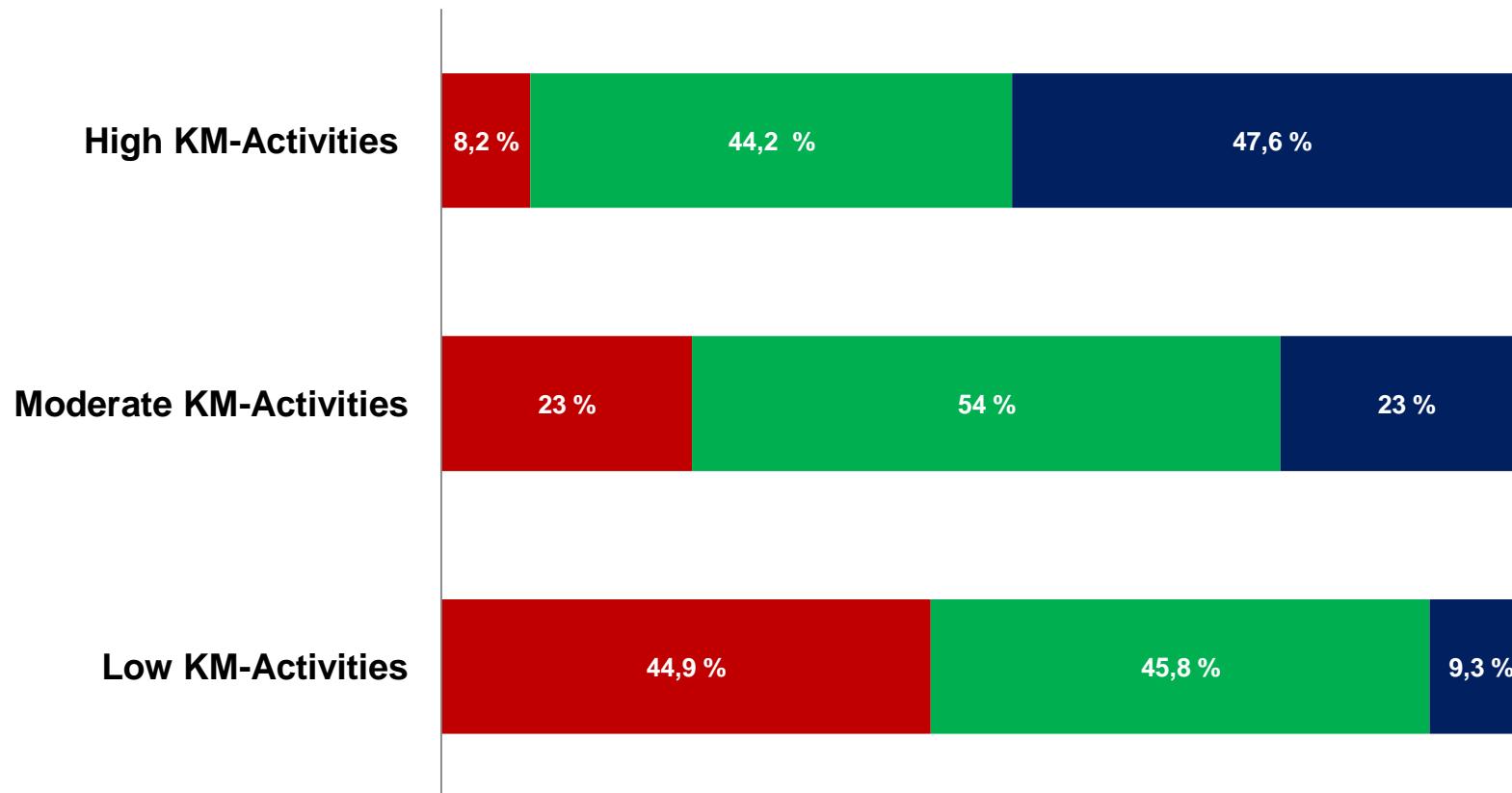
Basel II ratings/  
credibility ratings



# KM- Activities and Employee motivation (POE)



■ Low employee motivation ■ Moderate employee motivation ■ High employee motivation



n = 1209

# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

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Business strategy

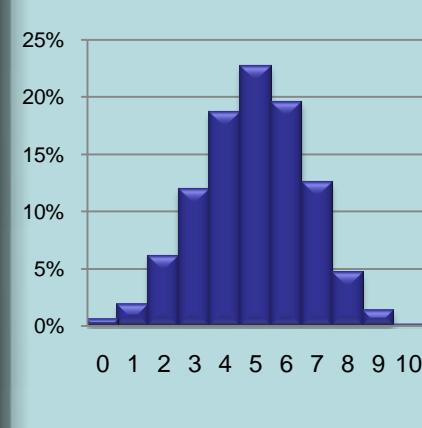
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM/IC activities



## Performance/Success Factors

Employee motivation

Innovative capabilities

Competitiveness

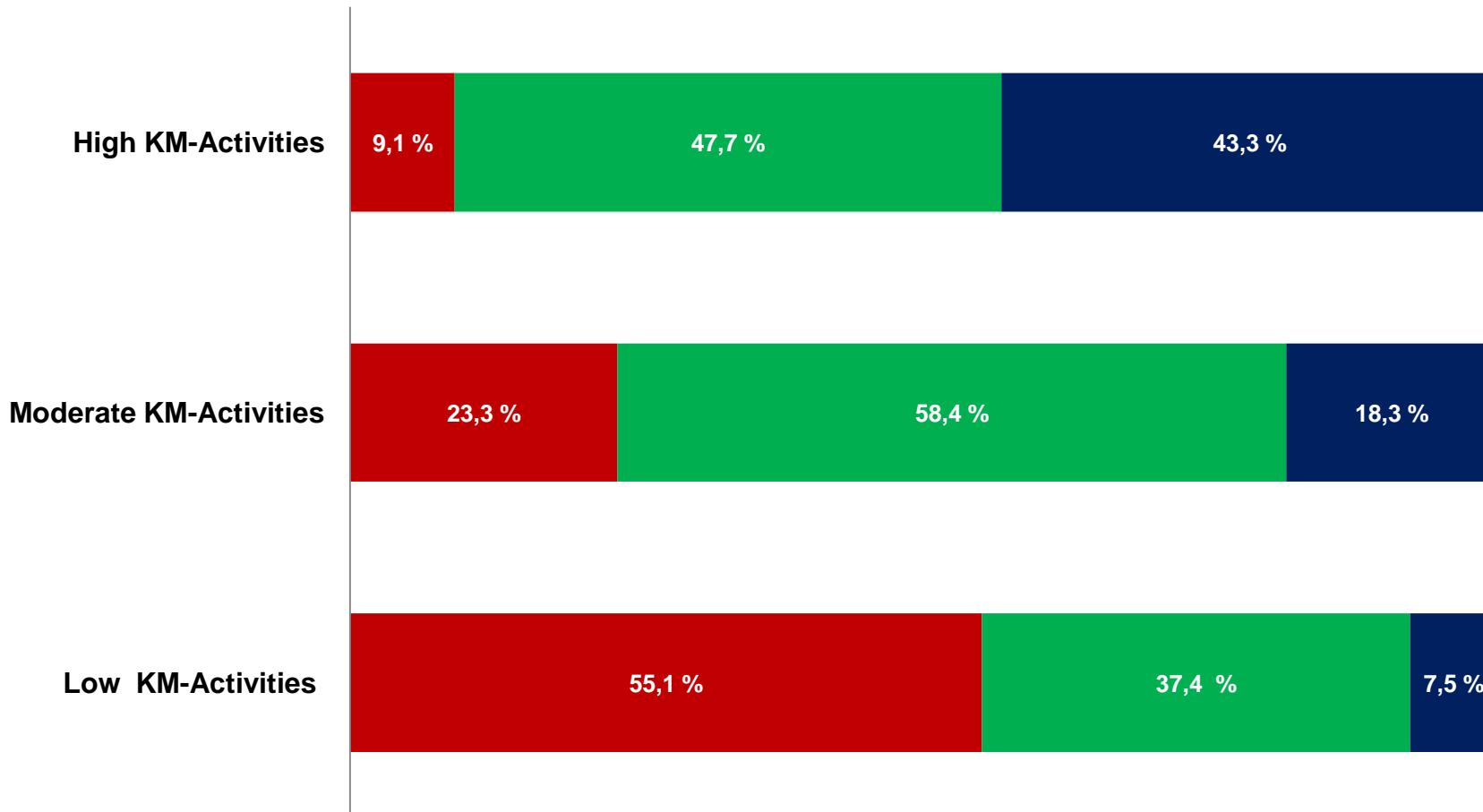
Economic performance

Basel II ratings/  
credibility ratings

# KM-Activities and Innovative capabilities



■ Low Innovative Capabilities ■ Moderate Innvoative Capabilities ■ High Innovative Capabilities



n=3401

# Research Model KM 2010



## Determinants

Personnel- / HR management

Market challenges

Environmental-/Market dynamics

Business strategy

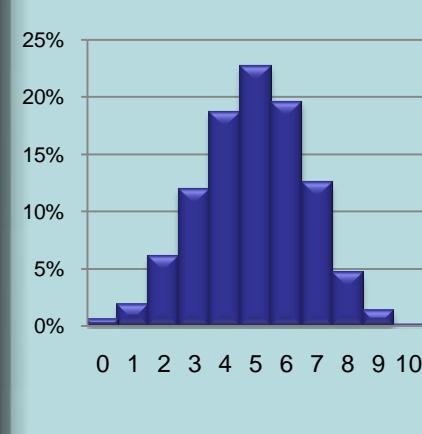
Perceived KM Instrumentality

Holistic KM-Strategy

Company size/  
Line of business

Quality-management

## KM/IC activities



## Performance/Success Factors

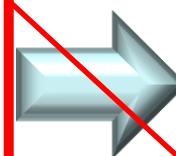
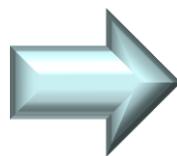
Employee motivation

Innovative capabilities

Competitiveness

Economic performance

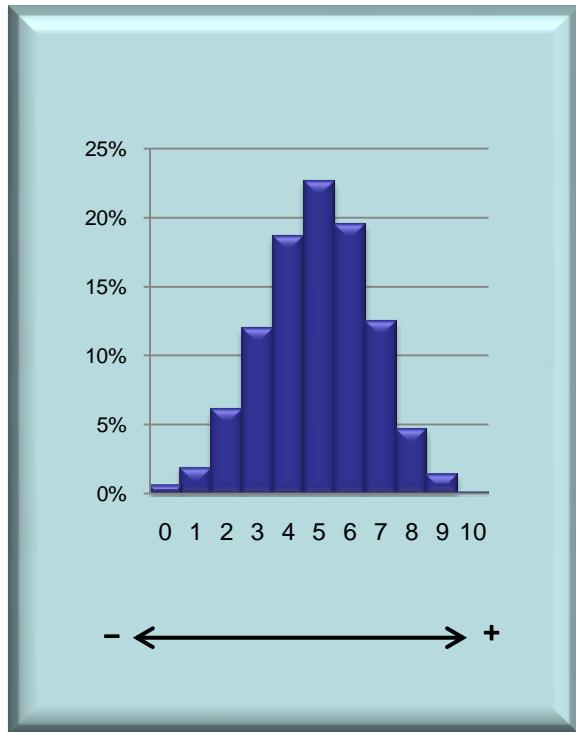
Basel II ratings/  
credibility ratings



# KM-Activity and business performance indicators



## KM Activity



## Bunsiness 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

# Research Model KM 2010



## Determinants

Personnel- / HR management

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Business strategy

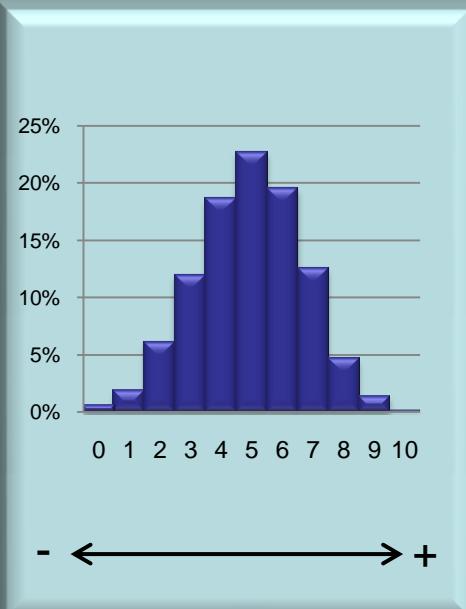
Perceived KM Instrumentality

Holistic KM-Strategy

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## KM/IC activities



## Performance/Success Factors

Employee motivation

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Competitiveness

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Basel II ratings/  
credibility ratings

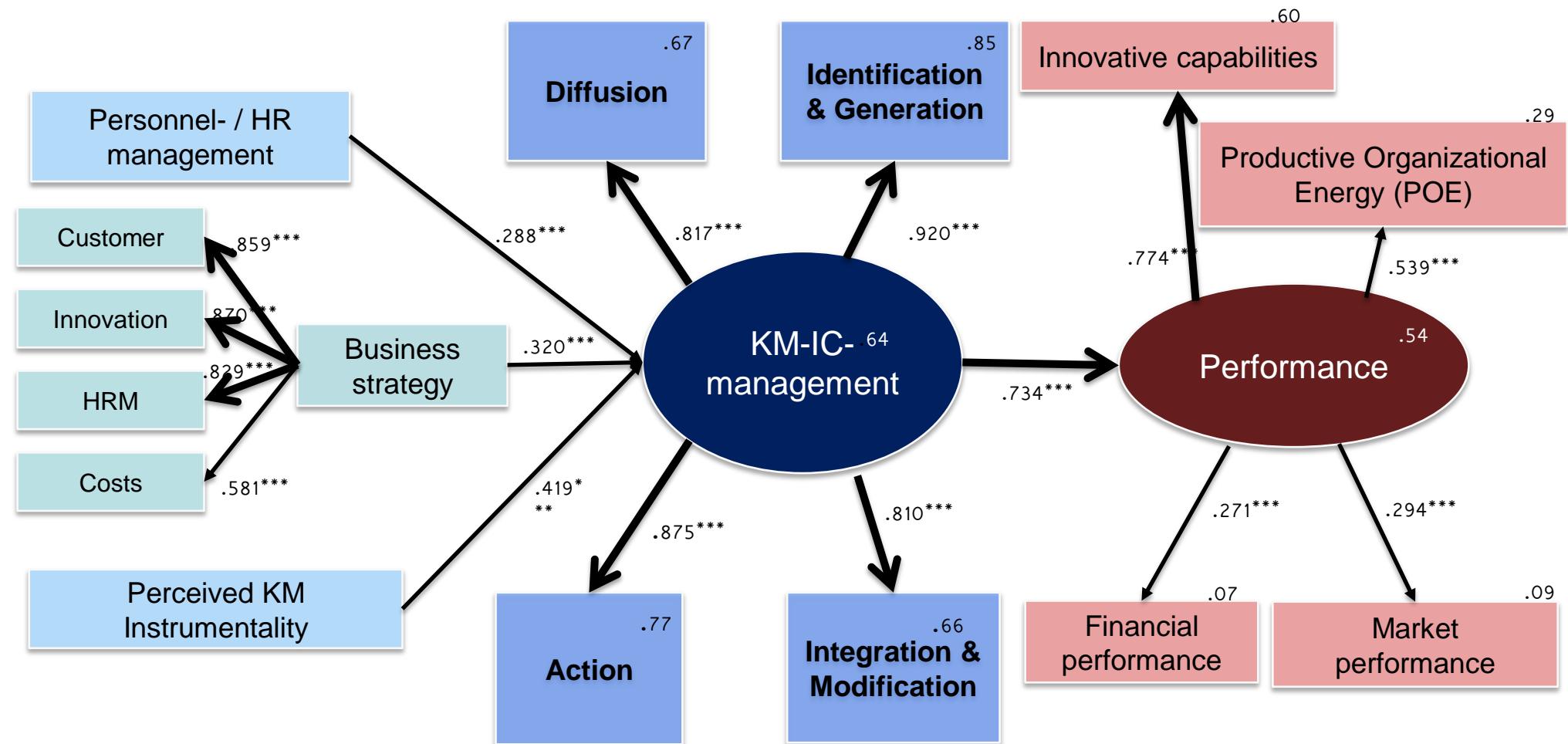
# Explanatory Model KM/IC Management

(Structural Equation Model)

## Determinants

## KM-Activity

## Performance





1. Objectives of the study
2. Research design
3. Questionnaire
4. Results
5. Conclusions

# Conclusions



- KM Activities differ less according to company size and lines of business than corporate strategies and core competencies
- KM ist especially effective in supporting knowledge intensive, strong HR driven, quality oriented strategies
- Instrumentality of KM shows especially in relation to employee motivation and innovative capabilities
- KM Activities are significantly correlated with performance indicators

**Thank you for your attention!**

*Univ.-Prof. Dr. Peter Pawlowsky - Lehrstuhl Personal und Führung  
Forschungsstelle organisationale Kompetenz und Strategie (FOKUS) - TU Chemnitz*