

UNIVERSITÄT
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ESSEN

RENT XXIV – Research in Entrepreneurship and Small Business

Firm Level Entrepreneurship and Operations Management

Enabling Flexible Responses to Changing Market Demands

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Entrepreneurship and Operations Management are usually treated as distinct disciplines

Research Question

Gap

- Firm level entrepreneurship and operations management are usually treated separately
- Firm level entrepreneurship is often operationalized as entrepreneurial orientation, i.e. a rather general strategic posture
- Strategic postures need to be translated into solid action before they can exert positive performance effects
- Operations management addresses concrete action on the production floor

Research Question: How can operations management and firm level entrepreneurship actually be related to each other?

Expecting *direct* positive performance effects from adopting EO is too simple

Entrepreneurial orientation

EO

- Researched since the 1970s (e.g. Mintzberg 1973; Khandwalla 1977)
- Five distinct dimensions: risk-taking, innovativeness, proactiveness (Miller 1983), competitive aggressiveness, autonomy (Lumpkin and Dess 1996)
- Mixed results with respect to performance
 - EO firms can perform better (e.g. Zahra 1991)
 - EO does not matter (Auger et al. 2003)
 - EO is detrimental (Hart 1992)
- Meta-analysis (Rauch et al. 2009) reveals weak performance impact and calls for additional studies investigating moderating influences

Additional Gap

- “EO represents the policies and practices that provide the basis for entrepreneurial decisions and actions (Rauch et al. 2009: 763)”, i.e. mediating concepts need to be considered as well
- E.g., EO translates into explorative and exploitative behavior which results in performance (Stöckmann 2010)
- As EO is related to new business, it requires a flexible organization to reap rewards from this strategic posture

This study suggests manufacturing flexibility as one missing link in the EO-performance relationship

Manufacturing flexibility

OM

- Efficient operations management results in positive performance and competitive advantage (De Toni and Tonchia 1998), e.g. through appropriate production strategies

Manufacturing flexibility

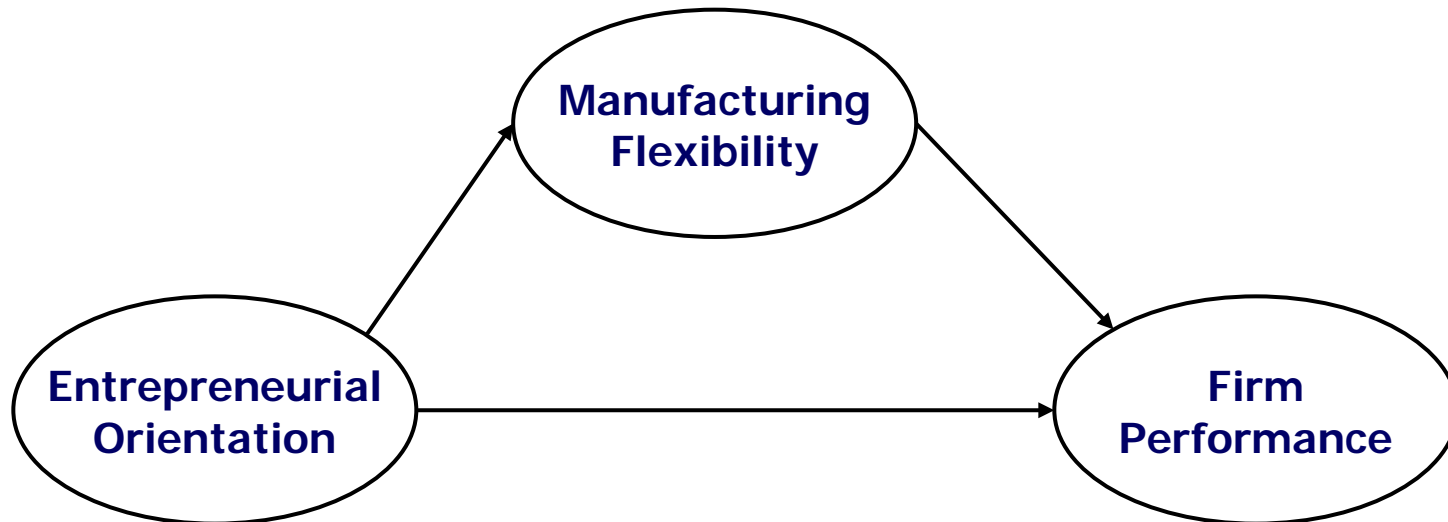
- Defined as a twofold concept (Swafford et al. 2006, Pereira et al. 2009)
 - The number of different states that can be achieved with existing resources (manufacturing range)
 - The ability to change form one state to another (manufacturing adaptability)
- Positive performance effects empirically identified (e.g. Vokurka and O'Leary-Kelly 2000)

EO & manufacturing flexibility

- Both concepts are related to change in a particular organization
- Rising evidence that EO impacts on OM and manufacturing flexibility
 - High EO causes high efficiency in production (Messegem 2003)
 - Subdimensions of EO impact on flexibility variations such as new product flexibility, product mix flexibility, volume flexibility (Chang et al. 2007)

The model integrates the entrepreneurial and the operations management perspective

Theoretical Model and Hypothesis



Hypothesis: The relationship of entrepreneurial orientation and firm level performance is mediated by manufacturing flexibility

Data was collected from the manufacturing industry in the German federal State of North Rhine-Westphalia

Data and Methods

Data

Respondents: (Owner-)Managers of manufacturing firms (excluding zero employees)

115 responses (21.66 percent response rate) to web based questionnaire

Non-response bias assessed through wave analysis

Common-method-bias avoided through *ex-ante* measures and *ex-post* statistical evaluation

All construct scales "borrowed"; construct reliability in line with the usual thresholds

Analytical strategy

Data were analyzed by means of the Partial Least Squares (PLS) approach due to ...

... its low requirements with respect to sample size

... its low requirements with respect to distribution of data

... its ability to conduct explorative analysis

Estimation of a baseline model to be compared to the full model

The Fornell-Larcker-Criterion is fulfilled suggesting construct discriminant validity

(Latent) Variable Correlations and Construct Reliability Measures

| | CR | AVE | 1. | 2. | 3. | 4. | 5. | 6. |
|--------------------------------|-----|-----|------|------|------------|------------|------------|-----|
| 1. Age | -/- | -/- | -/- | | | | | |
| 2. Size | -/- | -/- | .43 | -/- | | | | |
| 3. Entrepreneurial Orientation | .88 | .55 | .07 | .13 | .74 | | | |
| 4. Manufacturing Adaptability | .93 | .72 | .08 | .23 | .21 | .84 | | |
| 5. Manufacturing Range | .91 | .72 | .18 | .11 | .30 | .15 | .84 | |
| 6. Performance | -/- | -/- | -.07 | -.21 | .18 | -.36 | .26 | -/- |

Notes: Bold diagonal elements are the square root of AVE. SD = Standard Deviation; CR = Composite Reliability; AVE = Average Variance Extracted.

The PLS estimation supports the hypothesis

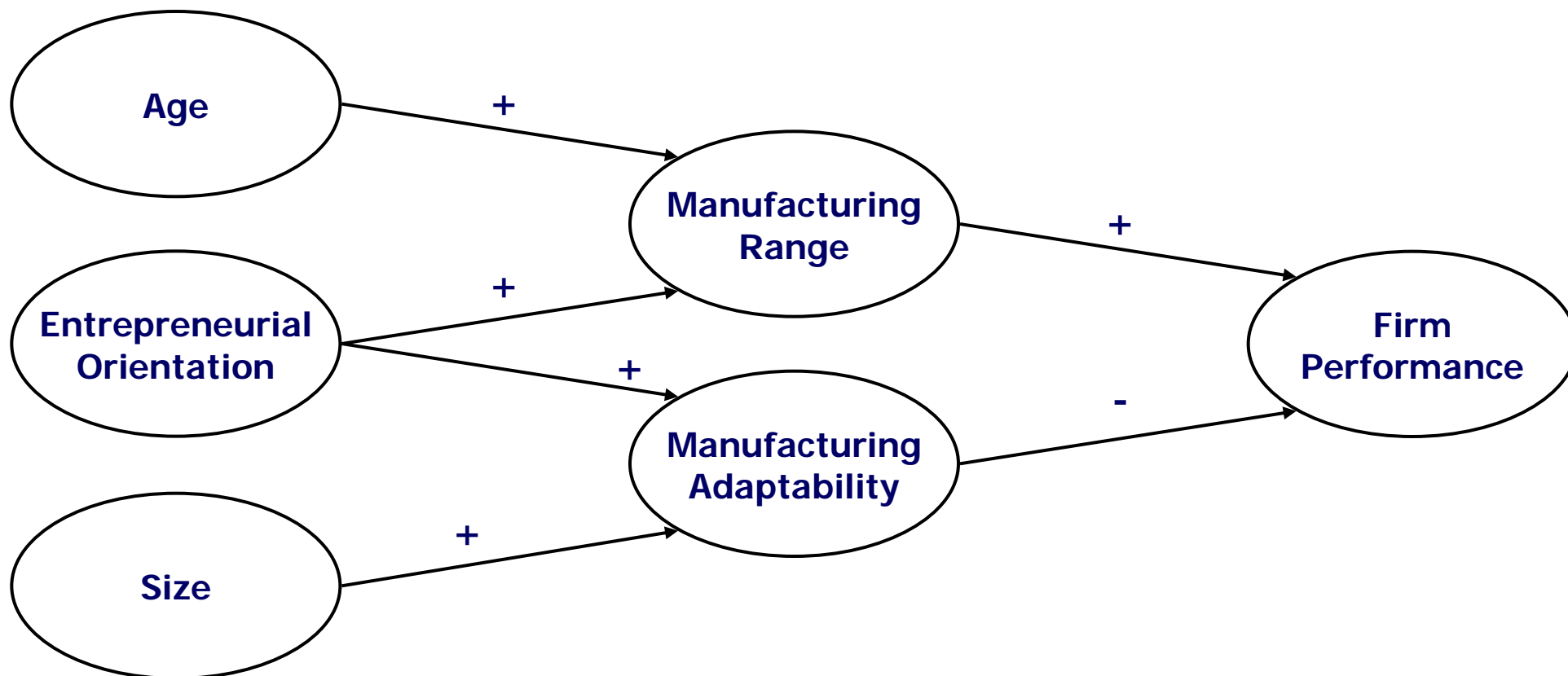
Results from the PLS Estimation

| Independent Variable → Dependent Variable | Model 1 (Direct Effects Model) | | | Model 2 (Mediation Model) | | |
|--|--------------------------------|-------|-------|---------------------------|-------|-------|
| | β | Q^2 | R^2 | β | Q^2 | R^2 |
| Age → Perf | -.04 | | | -.04 | | |
| Size → Perf | .32* | | | -.16 | | |
| EO → Perf | .27* | .04 | .19 | .21 | | |
| Man Adapt → Perf | | | | -.40** | | |
| Man Range → Perf | | | | .29* | .05 | .29 |
| Age → Man Adapt | | | | -.02 | | |
| Size → Man Adap | | | | .21** | | |
| EO → Man Adap | | | | .18* | .06 | .09 |
| Age → Man Range | | | | .16* | | |
| Size → Man Range | | | | .00 | | |
| Eo → Man Range | | | | .28** | .08 | .12 |

* $p \leq .05$; ** $p \leq .01$.

The total effect of entrepreneurial orientation and firm performance is still positive

Significant Model Paths



Focusing on high levels of EO is not enough to achieve superior performance

Discussion

Results

- Evidence for the mediating role of manufacturing flexibility
- Ambiguous impact on performance, i.e. flexibility is a “double-edged sword”
- Large manufacturing range results in increased turnover
- Large manufacturing adaptability may result in unpaid capacities

Managerial implications

- Necessity to secure that EO enhances the manufacturing range, managers should encourage production teams to think “out of the box”
- Necessity to control the level of manufacturing adaptability, manager should identify the real “value for money” of such initiatives

Next steps

- Results do not apply to service industries
- Cross-sectional design limits causal interpretation, e.g. some researchers suggest to interpret the EO-performance relationship the other way round
- Other forms of flexibility should be explored as well, e.g. production on demand, internal vs. external flexibility etc.

Thank you for your attention

Contact information

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