

# Mark A. Jacobs, Ph.D.

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## Education

- Michigan State University, Eli Broad Graduate School of Management** 2008  
Doctor of Philosophy, Operations and Sourcing Management  
Emphasis in new product development
- University of Minnesota, Carlson School of Management** 2003  
Masters of Business Administration  
Concentrations: Supply Chain Management, Entrepreneurship, Finance
- California Polytechnic State University, San Luis Obispo** 1988  
Bachelors of Science, Industrial Engineering  
Concentration: Production Management

## Research Interests

The interface between product development and supply chain management; in particular how product and portfolio strategies affect organizational performance.

Complexity management strategies such as modularity, standardization, process flexibility, and supply chain integration.

## Teaching Interests

Operations and supply chain management, management of service firms, product and service development, entrepreneurship, procurement and strategic sourcing, supplier relationship management, sourcing management, and business research methods.

## Dissertation

Title: Product Complexity: Theoretical Relationships to Demand and Supply Chain Costs

Chair: Morgan Swink

Members: Roger Calantone, David Closs, Robert Hubbard

Overview: Measures of product portfolio complexity are developed to test changes in sales volume and various costs that are predicted by theory, using econometric techniques on objective longitudinal data. The research confirms the usefulness of the Theory of Performance Frontiers in explaining complexity's impacts on an organization as well as demonstrates how the theory extends to intangible assets. The functional forms of the relationship between complexity and cost, quality, and sales volume are established and provide empirical support for a more robust definition of complexity that is put forward as a foundation of the research.

## **Research**

### **Journal Publications**

Yu, W., Jacobs, M., Chavez, R., Feng, M., “The impacts of IT capability and marketing capability on supply chain integration: A resource-based perspective”, forthcoming at *International Journal of Production Research*

Chavez, R., Jacobs, M., Yu, W., “Manufacturing capability and organizational performance: The role of entrepreneurial orientation”, *International Journal of Production Economics*, 2017, 184(1), 33 – 46

Jacobs, M., Yu, W., Chavez, R.; “The effect of internal communication and employee satisfaction on supply chain integration”, *International Journal of Production Economics*, 2016, 171(1), 60 – 70

Chavez, R., Yu, W., Jacobs, M., Fynes, B., & Lecuna, A.; “Internal Lean Practices and Performance: The Role of Technological Turbulence”, *International Journal of Production Economics*, 2015, 160(1), 157 – 171

Durmusoglu, S., Jacobs, M., Nayir, D., Khilji, S., & Wang, X.; “The Quasi-Moderating Role of Organizational Culture in the Relationship between Rewards and Knowledge Shared and Gained”, *The Journal of Knowledge Management*, 2014, 18(1), 19 – 37

Yu, W., Jacobs, M., Salisbury, W., & Enns, H.; “The effects of supply chain integration on customer satisfaction and financial performance: An organizational learning perspective”, *International Journal of Production Economics*, 2013, 146(1), 346 – 358

Jacobs, M.; “Complexity: Toward an empirical measure”, *Technovation*, 2013, 33(4), 111 – 118

Droge, C., Jacobs, M., & Vickery, S.; “An empirical study: Does supply chain integration mediate the relationship between product/process strategy and service performance?”, *International Journal of Production Economics*, 2012, 137(2), 250 – 262

Jacobs, M., & Swink, M.; “Product portfolio architectural complexity and operational performance: Incorporating the roles of learning and fixed assets”, *Journal of Operations Management*, 2011, 29(8), 677 - 691

Jacobs, M., Droge, C., Vickery, S., & Calantone, R.; “The effect of product and process modularity on agility and firm growth performance”, *Journal of Product Innovation Management*, 2011, 28(1), 124 – 138

Closs, D., Jacobs, M., Swink, M., & Webb, G. S.; “Toward a theory of competencies for the management of product complexity: Six case studies”, *Journal of Operations Management*, 2008, 26(5), 590 – 610

Jacobs, M., Vickery, S., & Droge, C.; “The effects of product modularity on competitive performance: Do integration strategies mediate the relationship?”, *International Journal of Operations and Production Management*, 2007, 27(10), 1046 – 1068

### **Other Publications**

Jacobs, M.; “Volume and cost implications of product portfolio complexity”, VDM, Saarbrucken, 142 pgs., 2009

Jacobs, M.; “Product complexity: A definition and impacts on organizations”, *Decision Line*, 2007, 38(5)

### **Papers Under Review**

Yu, W., Chavez, R., Jacobs, M., Feng, M., “Data-driven supply chain capabilities and performance: A resource-based view” under second review at *Transportation Research Part E*

Chavez, R., Jacobs, M., Yu, W., “Data-driven supply chains, manufacturing capability and customer satisfaction”, under second review at *Production Planning and Control*

Yu, W., Jacobs, M., Chavez, R., Feng, M., “Data driven supply chain and financial performance: The moderating effect of innovation focused complementary assets” under first review at *IEEE Transactions on Engineering Management*

Yu, W., Jacobs, M., Chavez, R.; “Business environment, supply chain integration and financial performance: Contingency and extended resource-based views” under first review at *International Journal of Physical Distribution and Logistics Management*

### **Working Papers**

Jacobs, M., Wells, C.; “Redundancy versus Focus: Determining the optimal number of suppliers under uncertainty “, under first review at *Supply Chain Management Journal*

Jacobs, M., & Swink, M.; “Impact of product portfolio complexity on organizational learning”, intended for *Journal of Operations Management*

- Using objective data, the measures of learning are created and used to reveal the differential impacts of learning through repetition versus learning through diversity

Yu, W., Jacobs, M., Chavez, R., Feng, M.; The impacts of marketing capability and IT capability on supply chain integration: A resource-based perspective

- A structural equation model is used to reveal the differential impacts of market based and IT capabilities on supply chain integration

### **Research Projects**

Jacobs, M., Schiffels, S.; “Behavior of buyers and suppliers in the purchasing transaction: A laboratory experiment “, intended for *Journal of Supply Chain Management*

- Use laboratory experiments to illuminate behaviors manifested by buyers and suppliers in contracting for supplies.

Mahapatra, S., Jacobs, M.; “Supply chain integration and performance: a multi-country study”

- Use survey data from manufacturers to study supply chain integration.

Jacobs, M., Yu, W.; “Modularity’s relationship to environment and performance “, intended for *Journal of Operations Management*

- Use survey data to investigate the role of modularity in Chinese Manufacturers.

Jacobs, M., Calantone, R. & Swink, M., &; “Scope economies and the role of complexity”, working paper intended for *Management Science*

- Conceptual / Analytical paper that explicates importance of scope economies in creating benefits from integration

Jacobs, M., & Swink, M.; “Measures of product portfolio complexity and impacts on cost”, intended for *Production Operations Management Journal*

- Using objective data, the functional form of the change in various costs due to complexity is established

Jacobs, M., & Vickery, S.; “The effect of product and process modularity on agility and financial performance”, intended for *International Journal of Production Economics*

- A structural equation model is used to reveal the differential impacts of process and product modularity on agility and firm financial performance

### **Invited Presentations**

Jacobs, M. & Swink, M.; “The cost implications of product and supply chain complexity”, Decision Sciences annual conference, Baltimore, 2013

Jacobs, M. & Swink, M.; “The cost implications of product and supply chain complexity”, INFORMS annual conference, Minneapolis, 2013

Jacobs, M.; “Panel member on the topic of empirical research methods”, Midwest Decision Sciences Institute, Indiana University, Indianapolis, 2011

Jacobs, M.; “The Interface of Product and Supply Chain Design: The Effects of Complexity”, Annual Purchasing and Supply Management Executive Seminar, East Lansing, 2009

Jacobs, M.; “Product complexity: Theoretical implications and relationship to cost”, Academy of Management Doctoral Consortium, Philadelphia, 2007

Jacobs, M., & Swink, M.; “At the interface of product design and supply chain design: Direct and interacting effects of complexity”, Supply Chain Design Conference, Indiana University, 2007

Jacobs, M., Swink, M., Closs, D., & Webb, G. S.; “Commonality in the product portfolio: Six case studies”, Innovation Research Network Conference, Northeastern University, 2006

Jacobs, M.; “Niche marketing”, Environmental Laboratory Executive Forum, Washington D.C., 1999

### **Presentations**

Yu, W., Jacobs, M., & Chavez, R., Feng, M.; “Data-driven supply chain capabilities and performance: A resource-based view”, European Operations Management Association Annual Conference, Trondheim, 2016

Yu, W., Jacobs, M., & Chavez, R.; “Operations, IT and marketing capabilities and performance: The moderating effects of business environment”, European Operations Management Association Annual Conference, Amsterdam, 2012

Yu, W., Jacobs, M., & Chavez, R.; “Operations, IT and marketing capabilities and performance: The moderating effects of business environment”, Production Operations Management Annual Conference, Chicago, 2012

Jacobs, M.; “The measure of modularity”, Decision Sciences Annual Conference, Boston, 2011

Jacobs, M., Vickery, S., & Droge, C.; “The influence of product/process strategy on logistics performance in the presence of supply chain integration”, Production Operations Management Annual Conference, Reno, 2011

Jacobs, M., & Swink, M.; “When a little is a lot: The influence of product portfolio complexion on learning”, Decision Sciences Annual Conference, San Diego, 2010

Jacobs, M., & Swink, M.; “The influence of portfolio complexion on learning”, Production Operations Management Annual Conference, Vancouver, 2010

Jacobs, M., Droge, C., & Vickery, S.; “Does supply chain integration mediate the impact of product and process modularity on service performance?”, Decision Sciences Annual Conference, New Orleans, 2009

Jacobs, M., & Swink, M.; “Product complexity: Theory and relationships to demand and supply chain costs”, Production Operations Management Annual Conference, Orlando, 2009

Jacobs, M., & Swink, M.; “Product complexity: Theory and relationships to demand and supply chain costs”, Decision Sciences Annual Conference, Baltimore, 2008

Jacobs, M., & Swink, M.; “Direct and interaction effects of complexity in product and supply chain design”, Decision Sciences Annual Conference, Phoenix, 2007

Swink, M., & Jacobs, M.; “Studying the true cost of product complexity, and what companies can do about it”, Production Operations Management Annual Conference, Dallas, 2007

Jacobs, M., Droge, C., Vickery, S., & Calantone, R.; “The effect of product and process modularity on agility and firm financial performance”, Decision Sciences Annual Conference, San Antonio, 2006

Jacobs, M., Swink, M., Closs, D., & Webb, G. S.; “Complexity in the product portfolio: Six case studies”, Decision Sciences Annual Conference, San Antonio, 2006

Jacobs, M., Vickery, S., & Droge, C.; “The effects of modularity on competitive performance”, Production Operations Management Annual Conference, Boston, 2006

Jacobs, M., & Calantone, R.; “Cost impact of product platforms”, Decision Sciences Annual Conference, San Francisco, 2005

## **Academic Experience**

### **Appointments**

#### **University of Dayton, School of Business**

2015 – now Associate Professor, Operations and Supply Management

2009 – 2015 Assistant Professor, Operations Management

#### **Helsinki School of Economics (Aalto University)**

2011 – 2012 Lecturer, Operations Management

#### **Michigan State University, Eli Broad Graduate School of Management**

2008 – 2009 Assistant Professor (visiting), Supply Chain Management

2004 – 2008 Research Assistant

#### **University of Minnesota, Carlson School of Management**

2002 – 2003 Research Assistant

### **Teaching**

#### **Undergraduate**

MSC 317	Quantitative Business Research Methods	2005 – 2006
MSC 372	Manufacturing Planning & Control	2007 – 2008
OPS 301	Introduction to Operations Management	2009 – current
OPS 480	Supply Chain Management	2010 – current
DSC 211	Statistics	2015
OPS 495	Capstone in Operations Management	2016

#### **Graduate**

MSC 842	Total Quality Management	2009
MBA 793	Operational Effectiveness	2011 – current
HSE MBA	Operations Management	2011
MBA 656	Business in South America	2015 – current

### **Honors and Awards**

Journal of Operations Management “Reviewer Service Award, 2013 – 2016”

Journal of Operations Management “Best Reviewer, 2013”

University of Dayton Teaching Fellow, 2014

University of Dayton Research Fellow, 2013

University of Dayton Research Institute Grant, 2011

University of Dayton SBA Summer Research Grant, 2011

Michigan State University Graduate School Dissertation Completion Fellowship, 2008

Department of Marketing & Supply Chain Management Dissertation Award, 2008

Klomprens Fellowship, Michigan State University, 2008

Carlson School of Management Fellowship, University of Minnesota, 2001 - 2003

Member, Omega Rho (Operations Research honor society)

Member, Alpha Pi Mu (Industrial Engineering honor society)

Matriculation Scholarship, Stanislaus State University

Honors at Entrance, Stanislaus State University

## **Professional Organizations**

Decision Sciences Institute, Member  
Production Operations Management Society, Member  
Academy of Management, Member  
Institute of Industrial Engineers, Senior Member  
International Trumpet Guild, Member  
T.E.C. International, Alumnus

## **Service**

### **Academy**

Associate Editor, Journal of Operations Management, 2016 – current  
Area editor for Surveys in Operations and Management Science, 2013 – 2017  
Member, Editorial board, International Journal of Integrated Supply Chain Management, 2012 – current  
Member, Editorial Review Board, Journal of Operations Management, 2011 – 2016  
Reviewer for the Journal of Operations Management, 2007 – current  
Reviewer for Production Operations Management Journal, 2007 – current  
Reviewer for International Journal of Production and Operations Management, 2007 – 2015  
Reviewer for Decision Sciences Journal, 2010 – current  
Reviewer for International Journal of Production Economics, 2012 – current  
Reviewer for International Journal of Production Research, 2016 – current  
Track chair for Decision Sciences annual conference, 2012  
Member, Global affairs committee of the Decision Sciences Institute, 2014 – 2016  
Track chair for Midwest Decision Sciences annual conference, 2011  
Session chair for Decision Sciences annual conference, 2007 – 2014

### **University**

Chair, Graduate Programs Committee, School of Business, 2015 – 2017  
Co-Chair, Operations Management Faculty Search committee, 2016  
Member, Executive Council of the Academic Senate, 2016 – current  
Member, Educational Leadership Council, 2016 – current  
Member, University Strategic Visioning steering committee, 2016 – 2017  
Member, University Faculty Affairs Committee, 2015 – current  
Member, University Human Resources Advisory Council, 2016 – 2017  
Member, Academic Senate, 2015 – current  
Member, Nominating and Recruitment Committee, 2015 – current  
Member, Graduate Programs Committee, School of Business, 2014 – 2015  
Member, Dean Search committee, 2016  
Member, Faculty Search committees for operations and MIS faculty, 2014 – current  
Department representative to Council of Graduate Students, Michigan State University, 2007  
Graduate student representative to the University Academic Council, MSU, 2007  
Graduate student representative to the University Committee on Faculty Tenure, MSU, 2007

## **Corporate Experience**

### **Positions**

<b>Capitol Cleaners</b> Board member	2015 – 2017	Dayton, OH
<b>Accent Management Consulting Services</b> Principal	2001 – present	Dayton, OH
<b>Cap Gemini Ernst &amp; Young</b> Supply Chain Management Consultant	2003 - 2004	Minneapolis, MN
<b>Cummins Engine</b> Financial Analyst	2002	Minneapolis, MN
<b>JL Analytical Services, Inc.</b> Chief Operating Officer	2000 - 2001	Modesto, CA
Vice President	1996 - 2000	
Director of Business Operations	1990 - 1996	
Section Manager	1988 - 1990	
<b>International Business Machines (IBM)</b> Industrial Engineer	1986 - 1987	San Jose, CA