

Using secondary data in Operations Management research: Overview, research methods, and research opportunities.

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Operations Management (OM) researchers are using publicly available secondary data to analyze the effect of operations decisions on corporate performance using metrics related to shareholder value and operating performance. This seminar will review the emerging research that links operations decisions to corporate performance. More specifically the seminar will cover the following:

- Discuss research methods and statistical techniques that can be used to measure short-term and long-term stock price effects, stock price volatility effects, and operating performance effects of operations decisions.
- Discuss data sources and approaches that can be used for conducting research using secondary data
- Discuss issues related to sample collection and hypotheses development.
- Discuss papers that have applied these approaches to operations management issues. We will review papers that use stock price and accounting data to research issues related to quality management, supply chain disruptions, inventory management, new product development, demand-supply mismatches, capacity management, investments in information technology, and environmental performance.

As part of this course we will be reviewing and discussing papers. I expect that you will read 2 papers everyday and lead the discussion of one or two papers during the week. I outline the topics that we will cover and the papers that we will discuss. I have perhaps assigned more papers than what we are likely to discuss. But we will decide on this once we start the seminar. The pdf copies of the papers are attached and each paper will be referenced by Paper #1, 2 etc.

Tentative Schedule of Classes

March 28, 2016.

I will lead the discussion during this session. To help the discussion, I want you to reflect on the following:

- Identify a couple of management issues (hopefully OM related) that you think could benefit from empirical research.
- What are some of the performance measures that you will consider?
- What are some of the hypotheses that you would be interested in testing?
- How would you get the sample for your empirical analyses?
- What data would you need to do the empirical analyses and test your hypotheses and where would you get the data?
- How would you design the study?

I am not expecting you to have complete and perfect answers for all these questions. I want you to think about these issues and make an attempt.

Required reading – I am not expecting you to carefully read this for the first class – just skim through Paper #1

Paper #1: Brown, S., J. Warner. 1985. "Using daily stock returns: The case of event studies". *Journal of Financial Economics*, 14, 3-31.

Background reading

Paper #2: MacKinlay, C. A. 1997. "The event studies in economics and finance". *Journal of Economic Literature*, 35, 13-39. Background Reading

Also see the power point file 150419 singhal.secondary.data.ppt

March 29 and March 30, 2016

We will discuss use event study methods to document the stock market reaction to corporate announcements.

Readings

Paper #3: Hendricks, K. B., V. R. Singhal. 1996. "Quality awards and the market value of the firm: An empirical investigation". *Management Science*, 42, 415-436.

Paper #4: Klaussen, R. D., and C. P. McLaughlin. 1996. "The Impact of Environmental Management on Firm Performance". *Management Science*, 42, 1199-1214.

Paper #5: Jacob, B., Singhal, V. R., and Subramanian, R. 2010. An Empirical Investigation of Environmental Performance and the Market Value of the Firm. *Journal of Operations Management*, 28, 430-441.

Paper #6: Hendricks, K. B., V. R. Singhal. 2003. "The effect of supply chain glitches on shareholder value". *Journal of Operations Management*, 21, 5, December 2003, Pages 501-522.

Paper #7: Hendricks, K. B. and Singhal, V. R. 2008. Demand-supply mismatch and stock market reaction: Evidence from excess inventory announcements. *Manufacturing and Service Operations Management*, 11, 509-524.

Paper #8: Hendricks, K. B., Hora, M. and Singhal, V. R. 2012. An Empirical Investigation on the Appointments of Supply Chain and Operations Management Executives. Working Paper. Forthcoming in *Management Science*.

Paper #9: Hendricks, K. B., V. R. Singhal. 1997. "Delays in new product introductions and the market value of the firm: The consequences of being late to the market". *Management Science*, 43, 422-436.

Paper #10: Karan Girotra, Christian Terwiesch and Karl T. Ulrich. 2007. "Valuing R&D Projects in a portfolio: Evidence from the pharmaceutical industry, *Management Science*, 53, 1452-1466.

Paper#11: Hendricks, K. B., Singhal, V. R., and Zhang, R. 2009. The Effect of Operational Slack, Business and Geographical Diversification, and Vertical Relatedness on the Stock Market Reaction to Supply Chain Disruptions. *Journal of Operations Management*, 27, 233-246.

Paper #12: Jacobs, B. and Singhal, V. R. 2014. The Effect of Product Development Restructuring on Shareholder Value. *Forthcoming Production and Operations Management*, 23, 728-743.

Paper #13: Sriram Thirumalai and K. K. Sinha. 2011. Product Recalls in the Medical Device Industry. *Management Science* 57, 376-392.

March 31, 2016

We will discuss methods for estimating the operating performance effects of corporate announcements.

Background readings

Paper #14: Barber, B. M., J. D. Lyon. 1996. "Detecting abnormal operating performance: The empirical power and specification of test statistics", *Journal of Financial Economics*, 41, 359-399.

Readings

Paper #15: Corbett, C. J., M. J. Montes-Sancho, D. A. Kirsch. 2005. The Financial Impact of ISO 9000 Certification in the United States: An Empirical Analysis. *Management Science*. **51** (7) 1046-1059.

Paper #16: Hendricks, K. B., and Singhal, V. R. 2005. Association between supply chain glitches and operating performance. *Management Science*, 51, 695-711.

Paper #17: Hendricks, K. B. and Singhal, V. R. 2008. The effect of product introduction delays on operating performance. *Management Science*, 54, 878-892.

Paper #18: Hendricks, K. B. and Singhal, V. R. 2013. An empirical analysis of the effect of excess inventory on profitability. Working Paper, Scheller, College of Business.

April 1, 2016

We will discuss methods for estimating the long-term stock price effects of corporate announcements.

Background readings

Paper #19: Barber, B. M., J. D. Lyon. 1997. "Detecting Long-Run Abnormal Stock Returns: The Empirical Power and Specification of Test-Statistics". *Journal of Financial Economics*, 43, 341-372.

Paper #20: Kothari, S. P., J. B. Warner. 1997. "Measuring Long-Horizon Security Price Performance". *Journal of Financial Economics*, 43, 301-339.

Readings

Paper #21: Hendricks, K. B., V. R. Singhal, V. R. 2001. "The Long-Run Stock Price performance of Firms with Effective TQM Programs as Proxied by Quality Award Winners". *Management Science*, 47, 359-368.

Paper #22: Hendricks, K. B., and Singhal, V. R. 2005. An Empirical analysis of the effect of supply chain disruptions on long-run stock price performance and risk of the firm. *Production and Operations Management*, 14, 35-52.

Paper #23: Hendricks, K. B., and Singhal, V. R. 2014. The effect of demand-supply mismatches on firm risk. *Production and Operations Management*, 23, 2137-2151.

Other example papers

Paper# 24: Chen, H., M. Frank, O. Wu. 2005. The JIT revolution: What actually happened in the inventories of American companies between 1981 and 2000? *Management Science*, 51, 1015-1031.

Paper# 25: Gaur, V., M. L. Fisher., A. Raman. 2005. An econometric analysis of inventory turnover performance in retail services. *Management Science*, 51, 181-194.

Paper#26: Rumyantsev, S., S. Netessine. 2007b. What can be learned from classical inventory models? A cross-industry exploratory investigation. *Manufacturing & Service Operations Management*, 9, 409 -429.

Paper# 27: Kesavan, S., V. Gaur., A. Raman. 2010. Incorporating price and inventory endogeneity in firm level sales forecasting. *Management Science*, 56, 1519 – 1533.

Paper# 28: Cuneyt Eroglu, Christian Hofer, 2011, Lean, Leaner, Too Lean? the Inventory-Performance Link Revisited, *Journal of Operations Management*, 29 (4): 356-369

Biography

Vinod Singhal is the Dunn Family Professor of Operations Management and Associate Dean for MBA programs at the Scheller College of Business at Georgia Institute of Technology, Atlanta, USA. He has a Bachelors in Mechanical Engineering from BITS, Pilani, India; MBA from IIM Ahmedabad, India; and Ph.D. from University of Rochester; Rochester, USA. Prior to joining Georgia Tech., he worked for three years as a Senior Research Scientist at General Motors Research Labs.

Vinod's research has focused on the impact of operating decisions on accounting and stock market based performance measures. His research has been supported through grants from the US Department of Labor, National Science Foundation, the American Society of Quality, and the Sloan Foundation. He has published extensively in academic journals and has made more than 100 presentations at different universities. His research has been recognized in the practitioner community through his many articles in industry-practitioner journals and frequent invited presentations as keynote speaker at practitioner conferences. His work has been cited well over 200 times in practitioner publications such as *Business Week*, *The Economist*, *Fortune*, *Smart Money*, *CFO Europe*, *Financial Times*, *Investor's Business Daily*, and *Daily Telegraph*.

Vinod is a Departmental Editor of *Production and Operations Management*, and Associate Editor of *Journal of Operations Management*, *Management Science*, and *Manufacturing and Service Operations Management*. He is on the Academic Advisory Board of the European School of Management and Technology, Germany. He has served on the Board of Examiners of the Georgia Oglethorpe Award, Bell South's President Quality Award, and the Baldrige Board of Examiners.

Vinod has contributed to the Georgia Tech. community in terms of teaching and service. Vinod's teaching interests include operations strategy and supply chain management. At the Scheller College of Business, Vinod has taught at the undergraduate, MBA, executive, and PhD programs and has won teaching awards at the MBA level. His contributions to curriculum development are diverse and deep including those made while serving as Associate Dean of MBA Programs and area coordinator of Operations Management. He has contributed to teaching at an international level, as well, by offering workshops and advising faculty and PhD students on how to enhance the quality and impact of their research in countries including Australia, China, France, New Zealand, and Singapore, and United Kingdom.

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