THE EFFICACY OF INVESTMENTS IN SUPPLIER RELATIONSHIPS & ENVIRONMENTAL MANAGEMENT

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RESEARCH QUESTION

- Are investments in EM & Supplier Relationship equally beneficial in all environments (dynamic & hostile)?
LITERATURE REVIEW


• Hostile: Mechanized organizational structures, competitive, low growth, low profit

• Dynamic: Organic organizational structures, innovation, risk taking
Investment in EM (IEM)

- IEM improves operational & financial performance (Kalssen and Whybark, 1999; Christmann, 2000)

- In a **dynamic** environment: Improves profits
  - Redesigning process & product innovation (Russo & Fouts, 1997)

- In a **hostile** environment: Mixed review
  - Waste reduction & efficiency (Christmann, 2000)
  - Mechanized structures → Not for innovation (Kemp, 1993; Shrivastava, 1995)
LITERATURE REVIEW

Investment in Supplier Relationship (ISR)

• Companies look for improvement from supply chain $\rightarrow$ Lean Supply Chain (Elmuti, 2002)

• In a **hostile** environment, ISR $\rightarrow$ Lower costs
  – Supply base consolidation (Helper, 1991)

• In a **dynamic** environment, ISR $\rightarrow$ ???
  – Access to technology? Switching cost? (Ellram, 1994)
RESEARCH MODEL
(Path Analysis)

Hostility → Investment in Supplier rel. (H1+)
Dynamism → Investment in EM (H2+)

Investment in Supplier rel. → Performance (H5+)
Investment in EM → Performance (H6+)

H4 X
RESEARCH METHODOLOGY

Survey

• GMRG questionnaire + Add-on
• Respondents: manufacturing and purchasing managers
  – inter-rater reliability (Boyer and Verhma, 2000)
• Samples: 109/628, or 16%
  – Taiwan = 64 high-tech firms
  – Northwest US = 39
RESEARCH METHODOLOGY

Scales

• External environment (Ward et al., 1995)
  – Hostility & Dynamism

• Supplier relationship (Carr and Pearson, 1999; Shin et al., 2000)
  – Loyalty, communication, number of suppliers, new product design participation.
Scales

- EM Investment
  - Investment in ISO1400, pollution prevention, recycling of materials, waste reduction (GMRG 1.22)

- Performance
  - A composite of a number of plant level metrics including quality, price, and flexibility (Ahmad and Schroeder, 2003)
STATISTICAL RESULTS #1

Hostility \( \rightarrow \) Investment in Supplier rel.

Dynamism \( \rightarrow \) Investment in EM

Performance

\( H1^{+**} \)

\( H3^{+**} \)

\( H6^{+**} \)
IMPORTANCE OF PURCHASED PARTS

• ISR & Performance
  – Benefits of supplier relationships will mainly accrue to those firms who place a heavy emphasis on purchasing (Krause, 1999)

• Two groups
  – High level vs. Low level of importance on purchased inputs
RESULTS #2:
HIGH IMPORTANCE OF PURCHASED PARTS

Hostility ➔ Investment in Supplier rel. ➔ Performance

Dynamism ➔ Investment in EM ➔ Performance

+** Indicates strong positive correlation
CONCLUSIONS: ISR

• Investing in supplier relationships will only benefit those firms where purchasing is important
  – This finding is not really surprising, but it reinforces that there is not one set of purchasing practices that is right for every situation

• Many firms have responded to the increased hostility in the market by squeezing suppliers (Green, 2000; Stallkamp, 2001)
  – Our results indicate that relying on strong arm tactics and returning to the adversarial relationships will result in lower overall performance
CONCLUSIONS: IEM

• **American firms vs. Taiwanese firms**
  – American firms react to increases in dynamism with decreased investments in EM
  – Taiwanese firms respond strongly to increased dynamism with increased investments in EM systems

• Hostility is not driving firms to invest in environmental management
FUTURE RESEARCH

• Supply Chain Environmental Management (SCEM)