An Investigation of Supply Chain Management Practices in Small Medium Enterprise (SME)

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Theoretical Constructs

Supply Uncertainty
Customer Uncertainty
Technology Uncertainty
Coercive
Mimetic
Normative
IT Advancement
IT Alignment

Environment Uncertainty
Institutional Theory
Resource Based View

Adapted from Li et al. (2002) and Wong Boon-itt (2008)
Adapted from DiMaggio and Powell (1983)
Adapted from Wu et al. (2006)

Strategic Supplier Partnership
Customer Relationship
Level of Information Sharing
SCM Practices
Marketing Performance
Operational/Financial Performance
Organizational Performance

Adapted from Li et al. (2004)
## Description of SME

<table>
<thead>
<tr>
<th>Classification</th>
<th>Micro</th>
<th>Small</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>&gt; Rp 15 million - 20 million</td>
<td>&gt; Rp 125 million - Rp 210 million</td>
<td>&gt; Rp 500 million</td>
</tr>
<tr>
<td>Assets</td>
<td>&gt; Rp 20 million - Rp 50 million</td>
<td>&gt; Rp 300 million - Rp 500 million</td>
<td>Rp 1,5 billion</td>
</tr>
<tr>
<td>Headcounts</td>
<td>&gt; 5 persons</td>
<td>&gt; 15 persons</td>
<td>&gt; 50 persons</td>
</tr>
<tr>
<td>UMR</td>
<td>Met UMR</td>
<td>Met UMR</td>
<td>Met UMR</td>
</tr>
<tr>
<td>Jamsostek</td>
<td>Already Have</td>
<td>Already Have</td>
<td>Already Have</td>
</tr>
<tr>
<td>Legal documents</td>
<td>SIUP</td>
<td>SIUP</td>
<td>complete</td>
</tr>
<tr>
<td>Placing Status</td>
<td>owner</td>
<td>Owner</td>
<td>Owner</td>
</tr>
<tr>
<td>Number of customer</td>
<td>&gt; 5 main customers</td>
<td>&gt; 5 main customers</td>
<td>&gt; 7 main customers</td>
</tr>
<tr>
<td>Technology Ability</td>
<td>Mechanic</td>
<td>Mechanic</td>
<td>mechanic (high tech)</td>
</tr>
<tr>
<td>Length of business operation</td>
<td>&gt; 2 years</td>
<td>&gt; 3 years</td>
<td>&gt; 5 years</td>
</tr>
<tr>
<td>Financial Statements</td>
<td>cash flow, income statement, balance sheet</td>
<td>financial statements (cashflow, income statement, balance sheet, flow of capital)</td>
<td>financial statements audited (cashflow, income statement, balance sheet, flow of capital)</td>
</tr>
</tbody>
</table>

50% having partnership, and 50% raised independently
Profile of Respondent:

1. PIC of enterprise (39% owner)
2. Degree of Education (46 SMA graduates)
3. Headcounts (41% small sized, 59% medium sized)
4. Type of SME (37 handicraft)
Statistical Description

SCM Practices Factor

56% themselves are having a strategic supplier partnership
(1) a consideration about quality, (2) a problem solving jointly with suppliers, (3) a continuous improvement programs with suppliers, (4) a goal-setting activity (5) and product development involving suppliers.

75% respondents had customer relationship
(1) a frequent interaction between organization and customers to set reliability, responsiveness, and other standards. (2) A measurement and evaluation of customer satisfaction. (3) A determination of future customers’ expectation. (4) An assistant from the organization to customers. (5) A periodic evaluation of the importance relationship with customers.

48% respondents having information sharing relationship
(1) an information sharing with trading partners if there were changing needs and issues that potentially affect the business. (2) A knowledge sharing and information exchanged which help the establishment of a business planning. (3) The information about events and related business.
## Statistic Description of Mean Centered Indicator

<table>
<thead>
<tr>
<th>Country</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU1</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.785</td>
<td>0.948</td>
</tr>
<tr>
<td>EU2</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>2.923</td>
<td>0.841</td>
</tr>
<tr>
<td>EU3</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.046</td>
<td>1.120</td>
</tr>
<tr>
<td>IT1</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.023</td>
<td>0.840</td>
</tr>
<tr>
<td>IT2</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>2.915</td>
<td>0.826</td>
</tr>
<tr>
<td>IT3</td>
<td>130</td>
<td>1</td>
<td>4</td>
<td>2.523</td>
<td>0.799</td>
</tr>
<tr>
<td>IR1</td>
<td>130</td>
<td>1</td>
<td>4</td>
<td>2.162</td>
<td>0.824</td>
</tr>
<tr>
<td>IR2</td>
<td>130</td>
<td>1</td>
<td>4</td>
<td>2.323</td>
<td>0.934</td>
</tr>
<tr>
<td>SC1</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.323</td>
<td>0.917</td>
</tr>
<tr>
<td>SC2</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.800</td>
<td>0.811</td>
</tr>
<tr>
<td>SC3</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.069</td>
<td>0.818</td>
</tr>
<tr>
<td>OP1</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>3.085</td>
<td>0.949</td>
</tr>
<tr>
<td>OP2</td>
<td>130</td>
<td>2</td>
<td>5</td>
<td>2.962</td>
<td>0.991</td>
</tr>
</tbody>
</table>
To find the composite values, the component score coefficient matrix was needed.

The sequential steps to find the weighted loading factor: SPPSS > Data Reduction > Factor > Score > Display Factor Coefficient Matrix > Continue.

The composite reliability is taken from the cronbach alpha for each manifest indicator.

The error variance was taken from the multiple of its variance and \((1-\alpha)\).

To find those values, the following equations should be written in Excel:

- **Composite Reliability:** \(\alpha\)
- **Loading Factor Composite:**
- **Error Variance Composite:** \(\text{VAR}(x)(1-\alpha)\)

### Composite Indicator

Find the composite values

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
<th>St. Dev</th>
<th>Variance</th>
<th>Composite Reliability</th>
<th>Loading Factor Composite</th>
<th>Error Variance Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU1</td>
<td>5.064</td>
<td>0.71</td>
<td>0.503</td>
<td>0.648</td>
<td>0.805</td>
<td>0.177</td>
</tr>
<tr>
<td>EU2</td>
<td>3.977</td>
<td>0.844</td>
<td>0.712</td>
<td>0.441</td>
<td>0.664</td>
<td>0.398</td>
</tr>
<tr>
<td>EU3</td>
<td>3.696</td>
<td>0.868</td>
<td>0.753</td>
<td>0.8</td>
<td>0.894</td>
<td>0.151</td>
</tr>
<tr>
<td>IT1</td>
<td>4.242</td>
<td>0.744</td>
<td>0.554</td>
<td>0.788</td>
<td>0.888</td>
<td>0.117</td>
</tr>
<tr>
<td>IT2</td>
<td>4.297</td>
<td>0.665</td>
<td>0.442</td>
<td>0.69</td>
<td>0.831</td>
<td>0.137</td>
</tr>
<tr>
<td>IT3</td>
<td>3.456</td>
<td>0.631</td>
<td>0.398</td>
<td>0.897</td>
<td>0.947</td>
<td>0.041</td>
</tr>
<tr>
<td>IR1</td>
<td>3.14</td>
<td>0.968</td>
<td>0.937</td>
<td>0.848</td>
<td>0.921</td>
<td>0.142</td>
</tr>
<tr>
<td>IR2</td>
<td>2.939</td>
<td>1.022</td>
<td>1.045</td>
<td>0.948</td>
<td>0.974</td>
<td>0.054</td>
</tr>
<tr>
<td>SC1</td>
<td>4.081</td>
<td>0.755</td>
<td>0.5702</td>
<td>0.781</td>
<td>0.884</td>
<td>0.125</td>
</tr>
<tr>
<td>SC2</td>
<td>4.509</td>
<td>0.687</td>
<td>0.4714</td>
<td>0.848</td>
<td>0.921</td>
<td>0.072</td>
</tr>
<tr>
<td>SC3</td>
<td>4.233</td>
<td>0.793</td>
<td>0.6292</td>
<td>0.877</td>
<td>0.936</td>
<td>0.077</td>
</tr>
<tr>
<td>OP1</td>
<td>3.827</td>
<td>0.674</td>
<td>0.454</td>
<td>0.781</td>
<td>0.884</td>
<td>0.099</td>
</tr>
<tr>
<td>OP2</td>
<td>3.537</td>
<td>0.789</td>
<td>0.622</td>
<td>0.919</td>
<td>0.959</td>
<td>0.05</td>
</tr>
</tbody>
</table>
Theoretical Framework and Hypotheses

SCM Practices
- Strategic Supplier Partnership
- Customer Relationship
- Level of Information Sharing

Environment Uncertainty
- Supply Uncertainty
- Customer Uncertainty
- Technology Uncertainty

Institutional Theory
- Coercive
- Mimetic
- Normative

Resource Based View
- IT Advancement
- IT Alignment

Organizational Performance
- Marketing Performance
- Operational/Financial Performance

H1

H2

H3

H4
Moderated Variable Model

Goodness of Fit

- Likelihood-Ratio Chi-Square Statistic ($\chi^2$): Small value is expected
- P-value: $\geq 0.05$
- RMSEA: $\leq 0.08$
- GFI: $\geq 0.90$
- AGFI: $\geq 0.90$

Chi-square = 77.367, df = 58, probability = 0.045, gfi = 0.912, agfi = 0.862, rmsea = 0.052
Conclusion

1. strategic supplier partnership is fair and needs to be increased; customer relationship relatively high, level of information sharing is low and needs to be increased.
2. An Environment uncertainty was significantly affecting SCM practices and customer uncertainty had the highest loading of all indicators.
3. An Institutional theory was significantly moderating environment uncertainty and SCM practices. Additionally, mimetic had the highest loading of all indicators.
4. An Internal resource was significantly affecting SCM practices and IT Alignment had the highest loading of all indicators.
5. A SCM practice was significantly affecting organizational performance and customer relationship had the highest loading of all indicators.
6. The model was perfectly fitted and had a unique solution of the population (Chi-Square=77.36; Df=58; Probability=0.05; CFI=0.90; GFI=0.91; AGFI=0.86; RMSEA=0.05).

RESEARCH OBJECTIVES

1. Assess the levels of implementation of SCM practice in SMEs.
2. Identify the drivers and barriers of the implementation of SCM in SMEs.
3. Examine the role of business environmental, institutional theory, and internal resource in the implementations of SCM in SMEs.
4. Examine the impact of SCM practices on SMEs performance.
5. Provide recommendations for improving SCM implementation in SMEs.


