THE VALUE OF DOWNSTREAM INFORMATION: EXPLORING THE EFFECTS OF BUSINESS NETWORKS ON BUYER-SUPPLIER RELATIONSHIPS

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ABSTRACT

Drawing from emerging perspectives on relationship, chain and network management, we build a framework to study in detail the effects of the information from the network on trust, transaction specific investments (TSI), joint action and flexibility. The findings of the Dutch potted plant and flower industry show that the information buyers and suppliers obtain from downstream the value chain increases the level of joint action and flexibility and TSI.

INTRODUCTION

The increasing need to satisfy consumers has turned considerable attention of marketing professionals to buyer-supplier relationships. Through integrated operations with its suppliers and distributors, a manufacturer can better communicate the value of its products to consumers. The predominant focus in much of the existing research has been on individual dyadic relationships between firms, such as those between a manufacturer and a customer. However, a growing number of studies in the marketing literature show that a manager’s network of inter-personal contacts offers informational benefits that allow firms to increase flexibility in the way relationships are managed (e.g., Wathne and Heide 2004). Our study represents an attempt to understand the impact of the information, a firm obtains from firms located downstream the chain, on the way relationships are managed.

The network of contacts serves as conduits for sharing valuable information. The value of the information lies in its content and credibility rather than in the mere infrastructure for information sharing. Firms may explore benefits of trade conditions, reputation and operations. As there can be innumerable firms that might offer information to a business, we focused on the sources located downstream the chain (i.e., other buyers and buyer’s customers). These sources are closer to consumers and may signalize more precisely the needs of consumers. Therefore, the way buyer-supplier relationships are managed may be influenced by the valuable information from downstream the chain.

Our goal is to analyze the impact of the information obtained from the network subgroups located downstream on relationship management. A survey was conducted including 174 growers of potted plants and flowers and 67 merchant distributors in the Netherlands. The potted plant and flower industry was chosen, because it is one of the most important sectors in Dutch agribusiness with a 2001 sales volume of over €3 billion, accounting for more than 65 percent of the total world trade in flowers and plants (Ministry of Agriculture, Nature, and Food Quality 2002).

BUSINESS NETWORK

This study defines a business network as follows: “the set of connected business relationships of an organization – be they vertical (with suppliers, customers) or horizontal (with colleagues, competitors or other entities) – that can be separated into subgroups and form essential sources of valuable information that offers benefits to buyer-supplier relationships in terms of internal processes, trade conditions and foreseeing actions of the counterpart” (Claro 2004). This definition guides the examination of both the impact of the network on buyer-supplier relationships and limits the scope of the concept. Following the definition, we can assert that a network can help shape buyer-supplier relationships, because it binds different connected relationships together. Relationships are connected in the sense that decisions made in a focal relationship are supported by the valuable information provided by other relationships (Gulati 1998; Hakanson and Snehota 1995; Burt 1997; Blankenburg, Eriksson, and Johanson 1999). Since no relationship exists in isolation, what happens or is achieved in one relationship will always relate to what is happening in at least some others (Anderson, Hakansson, and Johanson 1994).

Underlying network is the quest for information to support organizational actions (Granovetter 1985). The connected relationships of a network serve as conduits for sharing valuable information. The information transmitted through the network regards not only price formation and quality and quantity data (i.e., trade conditions), but also more proprietary and tacit types of information, such
such transaction-specific investments (TSI) are rather
customized and idiosyncratic and are therefore of consid-
erable less value outside the focal relationship (Heide and
John 1988). Specificity arises in different ways, particu-
larly in human knowledge and skills and in physical
specificities.

The need for trust between partners has been identi-
fied as an essential element of buyer-supplier relationship
(Anderson and Narus 1990; Rousseau et al. 1998). Trust
enables partners to manage risk and opportunism in trans-
actions (Nooteboom et al. 1997), and it reduces complex-
ity more effectively than authority (Powell 1990). Broadly
defined, trust reflects the extent to which negotiations are
fair and commitments are sustained (Anderson and Narus
1990) and the extent to which one party believes that its
requirements will be fulfilled through future actions un-
taken by the counterpart (Barney and Hansen 1994).

EXPLORING THE EFFECTS OF
DOWNSTREAM INFORMATION

A framework to study the overall effect of the net-
work on relationship management is shown in Figure 1. In
this paper, we focus on the specific effects of the informa-
tion obtained from firms located downstream the chain
(other buyers and buyer’s customers) on elements of the
relationship management: joint action, flexibility, TSI
and trust.

The effect of the downstream information (i.e., from
buyer’s customers and other buyers) on the relationship
management can follow a marketing rationale. Consum-
ers influence company’s actions. Once a manufacturing
company maintains close contacts with retailers and dis-
tributor, the manufacturer obtains information about the
reactions of consumers to its products. In this way, manu-
facturer can more quickly adapt production processes to
improve packing and quality or to make any other neces-
sary adjustment. Very often adjustments are dependent on
adjustments of a suppliers and buyers of this manufac-
turer. Consequently, the information a manufacturer ob-
tains from companies located downstream the value chain
may foster an overall constructive behavior. It is expected
that with this information companies will invest in trans-
action specific assets and engage in joint actions with its
supplier and buyer. It is also expected that the level of trust
in the relationships will increase as well as its flexibility to
make adjustments. In this study, we intend to explore the
effects of the information downstream.

In this study, we also added in the framework a
performance measure and six control variables. The per-
formance measure is composed of financial and opera-
tional measures of organizational effectiveness (Murphy
et al. 1996). Regarding the control variables, previous
research suggests that the buyer-supplier relationship

as how to improve production processes and logistics
(Uzzi 1997). Firms in a network also bring social capital
to other network members in the form of information,
which can be used as a source of reputation, contacts and
referrals. Firms may also share expert interpretations of
information. For example, cooperatives and specialized
associations frequently release reports on the market,
tendencies and trends. The interpretation and applicabil-
ity of such information is even more important than the
transmission of the information itself. The information
then reflects the stock of expertise within a firm or
network that is not written down or even formally ex-
pressed but may nevertheless be essential to a firm’s
effective operation.

Considering Burt’s (1980) and Salanacik’s (1995)
suggestion to find a proper degree of actor aggregation in
studies of networks, we use the concept of the “network
subgroup” to refer to organizations with the same function
in the market. Members of a supply chain include all firms
with whom the focal firm interacts directly or indirectly
through its suppliers or customers, from the point of origin
to the point of consumption. The focal firm is the central
unit of analysis. It is from this firm’s point of view that we
position all other organizations in the network. This study
categorizes network relations into five subgroups: two
located upstream in the chain (e.g., colleagues and input
suppliers), two downstream in the chain (e.g., other buy-
ers and buyers’ customers), and one third party (e.g.,
médiation agents).

RELATIONSHIP MARKETING

In buyer-supplier relationships, organizational bound-
daries are penetrated by the integration of activities as the
supplier becomes involved in activities that traditionally
are considered the buyer’s responsibility and vice-versa
(Yilmaz and Hunt 2001). Collaboration is a relational,
bilateral exchange as opposed to the discreteness that
underlies spot-market transactions. The roles of supplier
and buyer are no longer narrowly defined in terms of the
simple transfer of ownership of products. Given the dy-
mamics of the environment and the shared decision-mak-
ing roles of the parties, joint action is essential to achieve
success. It comprises of joint problem solving and joint
planning (Zaheer et al. 1998), as well as the flexibility to
make adjustments (Bello and Gilliland 1997). These rela-
tionships rely on joint problem solving for conflict reso-
lation and on joint planning as vehicle for achieving
mutual understanding.

The ramifications of the decision to create specific
transactional assets are the principal focus of transaction
cost approach (TCE, Williamson 1996). TCE has focused
attention on the accumulation of assets – that is, any
tangible or intangible of value – that are difficult and
costly to shift from one transactional partner to another.
might be affected by the length of business interaction (Anderson and Weitz 1992), environmental volatility and diversity (Ganesan 1994), firm size and share of fixed line channels (Stern, El-Ansary, and Coughlan 1996).

**METHODOLOGY**

The potted plant and flower industry is one of the most important sectors in the Dutch agribusiness. Dutch merchant distributors (called buyers in this study) are firms such as wholesalers, cash-and-carries and garden centers. Among the about 1,500 merchant distributors concentration is very much the watchword: the largest 4 percent (those with sales of more than €12 million) control nearly half of the purchases. Florists are the dominant retailers in the industry, representing 52 percent of the outlets, street sellers account for 27 percent of outlets, followed by supermarkets. But in some countries supermarkets account for the majority of sales, for instance, 45 percent in the U.K. and even 65 percent in Switzerland.

The Netherlands is renowned for its auctions. More than 92 percent of the trade between growers of potted plants and flowers (called suppliers in this study) and their buyers in this sector is affected under the services of the auctions (Ministry of Agriculture and Food Quality 2002). The two largest, namely Aalsmeer and Flora Holland, account for more than 80 percent of the total trade between suppliers and buyers. The auctions offer infrastructure for the trade in two distinct channels, namely fixed lines and the auction clock. The Dutch auction clock system works via the price-reduction principle, in which the price is adjusted downward until the product is sold to the first buyer to respond. Our paper focuses on the other channel, called “fixed lines.” Nowadays, this channel includes about one-third of the total potted plant and flower sales, as opposed to less than 5 percent only five years ago. It is expected to continue to grow in the future, because the fixed lines present advantages for both buyers and suppliers. Buyers are assured of the necessary quantity of potted plants, delivered at the requested date, time and place and at a fixed price. Suppliers know the price they will get, since it is negotiated in advance. In this way, they are no longer dependent on the auction clock with its unpredictable prices and product volumes.

**Data Collection and Research Instrument**

The data were collected in 2002. The Aalsmeer Auction provided a list of 600 supplier companies and 350 buyer companies. The list was screened to eliminate non-qualifying companies. The supplier list was found to contain 32 non-eligible companies (e.g., foreign compa-
nies, liquidated companies, and duplicate addresses) and
the buyer list 8 non-eligible companies, which were
excluded from the final list. Our data collection effort
yielded 202 responses of supplier companies, of which 28
were incomplete questionnaires and non-eligible compa-

ties (31% response rate). From the buyers we received 67
usable questionnaires (20% response rate). A standard-
ized survey questionnaire was used that consists of 60
precoded questions. For most of the items Likert 7-point
response format were used, and a limited number of items
were assessed with 2 to 5-point response formats. The
questions address the relationship between the respond-
ent and a regular counterpart via fixed line channel.
Before the data collection started the questionnair-
e was tested in a case study design, including 5 supplier compa-
nies (5 to 45 employees) and 4 buyers companies (180 to
550 employees). The input from a panel composed of
faculty members and industry experts was also particu-
larly helpful in creating the different measurement scales
and individual items.

Research Measures and Data Analysis

The business network construct refers to sets of
connected relationships that are contingent (informa-
tional benefits) upon each other and that influence a focal
buyer-supplier relationship (Cook and Emerson 1978).
The business network then reflects the average strength of
the information obtained from the business network.
The measure for network connections was developed based on
Anderson, Hakansson, and Johanson. (1994), and
Blankenburg, Eriksson, and Johanson (1999). To capture
all the potential sets of connected relationships, five
network subgroups were identified located upstream (in-
put suppliers such as young plants and seeds and firms that
supply fertilizers, chemical products, pots, vases, etc.)
and downstream the supply chain (other buyers e.g. whole-
salers, flower exporters, cash-and-carry stores and garden cen-
ters, and buyers’ customers, such as supermarkets, flower
shops and wholesalers abroad) and third parties (agents of
the auction who have strong bonds with both suppliers
and buyers). The informational benefits of each network
subgroup refer to support in three areas: setting prices,
quantities and qualities; coordinating production pro-
cesses and logistic operations; and foreseeing possible
future actions of the counterpart. Transaction-specific
investments (TSI) are defined as one party’s perception of
the extent to which an investment was made specifically
for a transaction with one or a limited number of compa-
nies. Items about the Human and Physical TSI were
included in the questionnaire.

Trust refers to the belief that the other partner is
honest and sincere and will not deliberately damage the
relationship. Trust reflects the expectation that negotia-
tions will be fair and commitments will be sustained
(Anderson and Narus 1990). Trust is captured in two
dimensions, interpersonal and inter-organizational trust
(Zaheer et al. 1998). Collaboration refers to situations in
which partners work together to achieve mutual goals
(Anderson and Narus 1990; Morgan and Hunt 1994). The
collaboration construct has two dimensions: the norm
of flexibility and joint action. The norm of flexibility is
defined as the extent to which a partner shows an accom-
mmodating response to changing circumstances (Heide
1994). Joint action was calculated by measuring the
degree of joint planning and joint problem solving. Joint
planning is defined as the extent to which future conting-
yencies, and consequential duties and responsibilities in a
relationship, have been made explicit ex ante (Heide and
Miner 1992). A multidimensional measure of perform-
ice was used, two measures of financial performance,
profitability and the sales growth rate, were combined
with one affective dimension, perceived satisfaction. This
dimension is defined as the assessment of the respondent’s
satisfaction how well the business relationship with the
selected partner achieves the expectations (Zaheer et al.
1998). The length of business interaction was measured
by an open-ended question as to the number of years that
the respondent had done business with the selected part-
tner. The measurement of environmental uncertainty and
diversity captures respondents’ perceptions of market
volatility and diversity. It was assessed by five items with
a Likert scale based on a previous study (Klein, Fraizer,
and Roth 1990). The measurement of firm size comprised
different instruments for each side of the relationship. In
the supplier sample, firm size was measured on a categori-
ical scale based on annual sales in the year 2001. A five-
interval scale was used for the supplier size variable
(respondent), and a three-interval scale was used for the
buyer size variable (partner). For the buyer sample, the
firm size was also measured on a categorical scale based
on annual sales in the year 2001. For the buyer size we
used a seven-interval scale (respondent) and for the sup-
plier size a three-interval scale (partner). The fixed lines
variable reflects the percentage of sales (in the sample of
suppliers) or purchases (in the sample of buyers) through
the mediation department of the Dutch flower cooperati-
ces, which refers to non-auction-clock transactions.

We carefully checked the validity (discriminant, con-
vergent, and content) and reliability using Cronbach’s
alpha, composite reliability, and extracted variance of the
measures and the sample’s non-response bias. In all cases
Cronbach’s alpha was sufficiently high (> .7) to warrant
confidence in the internal consistency of the scales. The
correlations between the constructs did not suggest prob-
lems of pairwise collinearity that would preclude the use of
all constructs in one equation.

RESULTS

We estimated several independent ordinary least
squares regressions for each sample. The five individual
network subgroups served as the independent variables and the elements of the relationship as the dependent variables. Table 1 presents the standardized coefficients of the estimated regression models. All the equations are statistically significant below the 0.01 level, except for the equation for growth rate. The adjusted $R^2$ for all significant equations ranges from 0.070 to 0.217. The moderate explanatory power of most of the equations supports the further examination of individual coefficients, to check the effects of each individual network subgroup and the control variables on the elements of the buyer-supplier relationship.

Table 2 shows the results of the regression equations for the buyer sample. This table summarizes the results of the seven regression equations. Six equations were statistically significant below the 0.01 level, one equation was significant below the level of 0.05, two below 0.10, and only one (for growth rate) was not significant. The adjusted $R^2$ for the significant equations ranges from 0.025 to 0.258. The empirical evidence shows a moderate explanatory power for most of the significant equations. The moderate, consistent explanatory power of the equations supports our further examining individual coefficients, testing the effects of each variable and comparing the results with those found for the supplier sample.

**DISCUSSION**

*On the supplying side of the relationship,* the supplier’s human and physical transaction-specific investments are contingent on the information from the network subgroup of buyer’s customers. The valuable information flows from supermarkets, florists and street sellers, who are likely to dictate the necessary investments of their distributors and firms farther upstream in the chain. Previous studies showed that investments in demand-oriented chains are steered by retailers that are close to consumers and can quickly perceive consumers’ needs (Myers, Daugherty, and Autry 2000).

As the information from buyer’s customers positively influences transaction-specific investments, this information is also valuable for fostering joint planning and joint problem solving. Information from these retailers can be helpful in finding solutions for problems and in discussing future plans with the counterpart in the buyer-supplier relationship. The information that suppliers obtain from the network subgroup of other buyers also increases the joint problem solving. Joint problem solving is a dimension of joint action, which is significantly influenced by the downstream network subgroups.

Interestingly, joint planning is also fostered by information upstream in the chain. The network subgroups of other suppliers can offer information about the actual situation of the supply side of the chain and that adds up to the information that flows from retailers downstream in the chain.

The downstream network subgroup of other buyers positively influences the norm of flexibility. This suggests that suppliers obtain information from other buyers that encourages a positive attitude toward adjustments when difficult situations in a relationship unfold.

Regarding performance, two negative coefficients were the only significant effects found. First, the subgroup of agents of the cooperative negatively influences perceived satisfaction. The valuable information that suppliers obtain from the agents appears either to increase the satisfaction criteria or to reduce the satisfaction evaluation of the buyer counterpart. Since agents are in close contact with both parties in the relationship, the agents might inform suppliers about buyers with a bad reputation or about changes in a supplier’s quality standard. Second, the subgroup first-tier suppliers negatively influences profitability. This might indicate that suppliers may carefully evaluate the content of information they receive and may temper the investments they make to gather information from this subgroup.

The agents of the cooperatives are negatively related to all of the elements of the buyer-supplier relationship, revealing the surprising role played by these third parties toward suppliers. This negative result suggests that information from the network can function on two fronts. First, the information can replace the elements of the relationship, because the information provides details to coordinate production and logistic processes and in turn functions as a mechanism for suppliers to believe that the buyer will act as expected. Second, the information obtained by suppliers from the agents of the cooperatives can block the elements by providing suppliers with intelligence about potential negative actions of a buyer, thus discouraging the further development of the elements of the buyer-supplier relationship.

*On the buying side of the relationship,* the downstream network subgroups, namely other buyers and buyer’s customers, were significantly related to all elements of the buyer-supplier relationship, except for inter-organizational trust and physical transaction-specific investments. Although the buyer-supplier relationship is analyzed in this sample from the purchasing perspective, the demand orientation of buyers appears to be evident. The relationship that the buyers maintain with a focal supplier counterpart is contingent on the information from retailers and other distributors. The information from the first-tier suppliers (e.g., suppliers of young plants) positively influences the physical specific investments.

The network subgroups do not significantly influence the performance measures, except for the negative
# TABLE 1
Results of the Regression Analysis of Network Subgroups and Control Variables on the Elements of Buyer-Supplier Relationships: Supplier Sample

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Transaction-Specific Investments</th>
<th>Trust</th>
<th>Joint Action</th>
<th>Flexibility</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physical</td>
<td>Human</td>
<td>Inter-organizational</td>
<td>Interpersonal</td>
<td></td>
</tr>
<tr>
<td>First-tier suppliers</td>
<td>0.10</td>
<td>0.08</td>
<td>-0.07</td>
<td>0.11</td>
<td>-0.06</td>
</tr>
<tr>
<td></td>
<td>(1.28)</td>
<td>(0.95)</td>
<td>(0.85)</td>
<td>(1.23)</td>
<td>(0.72)</td>
</tr>
<tr>
<td>Other suppliers</td>
<td>0.12</td>
<td>0.04</td>
<td>0.02</td>
<td>0.03</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>(1.49)</td>
<td>(0.52)</td>
<td>(0.22)</td>
<td>(0.28)</td>
<td>(1.51)</td>
</tr>
<tr>
<td>Other buyers</td>
<td>-0.06</td>
<td>0.09</td>
<td>0.13</td>
<td>0.01</td>
<td>0.15†</td>
</tr>
<tr>
<td></td>
<td>(0.69)</td>
<td>(1.05)</td>
<td>(1.43)</td>
<td>(0.10)</td>
<td>(1.71)</td>
</tr>
<tr>
<td>Buyer’s customers</td>
<td>0.33**</td>
<td>0.21**</td>
<td>0.02</td>
<td>0.06</td>
<td>0.17†</td>
</tr>
<tr>
<td></td>
<td>(4.08)</td>
<td>(2.42)</td>
<td>(0.18)</td>
<td>(0.64)</td>
<td>(1.77)</td>
</tr>
<tr>
<td>Cooperative agents</td>
<td>-0.16*</td>
<td>-0.04</td>
<td>-0.08</td>
<td>-0.10</td>
<td>-0.12</td>
</tr>
<tr>
<td></td>
<td>(2.26)</td>
<td>(0.51)</td>
<td>(1.07)</td>
<td>(1.28)</td>
<td>(1.60)</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of business</td>
<td>-0.16*</td>
<td>0.04</td>
<td>0.07</td>
<td>0.10</td>
<td>0.07</td>
</tr>
<tr>
<td>interaction</td>
<td>(2.18)</td>
<td>(0.58)</td>
<td>(0.90)</td>
<td>(1.22)</td>
<td>(0.94)</td>
</tr>
<tr>
<td>Environmental volatility</td>
<td>0.13†</td>
<td>0.05</td>
<td>-0.04</td>
<td>0.03</td>
<td>-0.04</td>
</tr>
<tr>
<td>and diversity</td>
<td>(1.79)</td>
<td>(0.62)</td>
<td>(0.57)</td>
<td>(0.38)</td>
<td>(0.55)</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.19**</td>
<td>0.24**</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.24**</td>
</tr>
<tr>
<td></td>
<td>(2.65)</td>
<td>(3.20)</td>
<td>(2.09)</td>
<td>(0.91)</td>
<td>(3.26)</td>
</tr>
<tr>
<td>Buyer size</td>
<td>-0.01</td>
<td>0.08</td>
<td>-0.02</td>
<td>-0.70*</td>
<td>-0.11</td>
</tr>
<tr>
<td>% of fixed lines</td>
<td>-0.04</td>
<td>-0.01</td>
<td>0.20**</td>
<td>0.21**</td>
<td>0.20**</td>
</tr>
<tr>
<td></td>
<td>(0.44)</td>
<td>(0.15)</td>
<td>(2.47)</td>
<td>(2.47)</td>
<td>(2.45)</td>
</tr>
</tbody>
</table>
| R² adj                   | 0.217** | 0.149** | 0.086** | 0.070** | 0.151** | 0.174** | 0.115** | 0.016 | 0.137** | 0.131**

*p < 0.01, *p < 0.05, †p < 0.10 (two-tailed).

Note: Regression coefficients are standardized coefficients b) and |t-test| within parentheses.

The effect of the network subgroups of other suppliers and the agents of the cooperative. The reasoning follows the same line as the one provided for the supplier sample. This reinforces the need for carefully considering these two network subgroups.

Examining the equations together, a pattern is noticeable in the buyer and supplier samples. The information from the downstream network subgroups (i.e., other buyers and buyer’s customers) significantly impacts several elements of the buyer-supplier relationship. This contrasts with the results of a previous study on industrial marketing, which found suppliers to be strongly connected to first-tier suppliers (Blakenburg and Eriksson 2000). Also, the conventional wisdom in purchasing literature emphasizes the upstream actors in a chain as the most important sources of information for buyers (for a review see Boer, Labro, and Morlacchi 2001). In our study, the information that firms obtain from actors downstream in the chain (retailers and distributors) supports collaboration, investments and trust in a relationship more than other network subgroups.
### TABLE 2
Results of the Regression Analysis of Network Subgroups and the Control Variables on the Elements of Buyer-Supplier Relationships: Buyer Sample

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Transaction-Specific Investments</th>
<th>Trust</th>
<th>Joint Action</th>
<th>Flexibility</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physical</td>
<td>Human</td>
<td>Inter-organizational</td>
<td>Interpersonal</td>
<td>Joint Problem Solving</td>
</tr>
<tr>
<td><strong>Network subgroups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>First-tier suppliers</td>
<td>0.30*</td>
<td>-0.04</td>
<td>-0.23</td>
<td>-0.20</td>
<td>-0.21</td>
</tr>
<tr>
<td></td>
<td>(1.96)</td>
<td>(0.25)</td>
<td>(1.52)</td>
<td>(1.25)</td>
<td>(1.32)</td>
</tr>
<tr>
<td>Other suppliers</td>
<td>-0.03</td>
<td>-0.11</td>
<td>-0.19</td>
<td>-0.22</td>
<td>-0.24</td>
</tr>
<tr>
<td></td>
<td>(0.17)</td>
<td>(0.64)</td>
<td>(1.10)</td>
<td>(1.18)</td>
<td>(1.38)</td>
</tr>
<tr>
<td>Other buyers</td>
<td>0.18</td>
<td>0.28†</td>
<td>-0.04</td>
<td>0.05</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>(1.04)</td>
<td>(1.71)</td>
<td>(0.21)</td>
<td>(0.28)</td>
<td>(1.35)</td>
</tr>
<tr>
<td>Buyer’s customers</td>
<td>0.09</td>
<td>0.36**</td>
<td>0.19</td>
<td>0.31*</td>
<td>0.34**</td>
</tr>
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<td></td>
<td>(0.64)</td>
<td>(2.57)</td>
<td>(1.33)</td>
<td>(2.06)</td>
<td>(2.32)</td>
</tr>
<tr>
<td>Cooperative agents</td>
<td>0.02</td>
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<td>-0.05</td>
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</tr>
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<td>(0.12)</td>
<td>(1.59)</td>
<td>(0.41)</td>
<td>(0.45)</td>
<td>(0.11)</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Length of business</td>
<td>0.05</td>
<td>0.09</td>
<td>0.29*</td>
<td>0.12</td>
<td>0.30**</td>
</tr>
<tr>
<td>interaction</td>
<td>(0.36)</td>
<td>(0.63)</td>
<td>(2.03)</td>
<td>(0.80)</td>
<td>(2.05)</td>
</tr>
<tr>
<td>Environmental volatility and diversity</td>
<td>0.10</td>
<td>-0.14</td>
<td>-0.04</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>Supplier size</td>
<td>0.10</td>
<td>-0.15</td>
<td>-0.19</td>
<td>-0.04</td>
<td>-0.13</td>
</tr>
<tr>
<td></td>
<td>(0.71)</td>
<td>(1.13)</td>
<td>(1.46)</td>
<td>(0.25)</td>
<td>(0.97)</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.22</td>
<td>-0.21</td>
<td>-0.26*</td>
<td>-0.26*</td>
<td>-0.19</td>
</tr>
<tr>
<td></td>
<td>(1.56)</td>
<td>(1.60)</td>
<td>(1.90)</td>
<td>(1.80)</td>
<td>(1.47)</td>
</tr>
<tr>
<td>% of fixed lines</td>
<td>0.12</td>
<td>0.16</td>
<td>0.03</td>
<td>-0.09</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>(0.76)</td>
<td>(1.08)</td>
<td>(0.19)</td>
<td>(0.56)</td>
<td>(1.48)</td>
</tr>
<tr>
<td>R² adj</td>
<td>0.071**</td>
<td>0.156**</td>
<td>0.120**</td>
<td>0.070**</td>
<td>0.105†</td>
</tr>
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</table>

**p < 0.01, *p < 0.05, †p < 0.10 (two-tailed).**

Note: Regression coefficients are standardized coefficients b) and [t-test] within parentheses.

### CONCLUDING REMARKS

This paper provides evidence that buyer-supplier relationships are contingent on the information companies’ obtain from the downstream network subgroups. While several studies claim that the whole network is essential for business purpose, our study shows that the valuable information obtained from the downstream networks subgroups influences more the way buyer-supplier relationships are managed than the other subgroups of the network. The comparison among the individual network subgroups raised an interesting discussion about focus firms may turn to the firms downstream the chain. This suggests that one may consider a decomposition of the network by focusing on the downstream network and perhaps evaluate the information value of the network in demand-orientated chains.

Some limitations must be considered when considering the results of our research. Our study used a cross-sectional design, thus preventing the investigation of the dynamic effects of the network and the elements of the network.
buy-supplier relationship. Further work can consider a longitudinal study to investigate the framework at different points in time. Our study domain was firms in the Dutch potted plant and flower industry. This might limit the generalizability of our conclusions. Further research is encouraged to replicate the research in a different setting, such as another country or product.

Managers may use our study and its empirical evidence as a check on the adequacy of their existing network and the type of information benefits it might provide. Firms should weigh the entire set of significant network effects in our study in making decisions about the degree of transaction-specific investment, trust, flexibility and joint action. Information obtained from the network can reduce information asymmetry, increase coordination and offer safeguarding benefits. The mere process of making contacts and cross-checking information with members of the network may lead to an improvement of decision making by managers. It is also important for managers to have accurate perceptions of the impact of information from the network. If managers either under- or overestimate the positive impact of information from the network, their efforts will be misguided, eventually dampening performance.

REFERENCES


Myers, M.B, P.J. Daugherty, and C.W. Autry (2000),

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