

RESEARCH PAPERS

KJELL GRØNHAUG* AND GEIR GRIPSRUD

Exploring the Robustness of Organizational Buying Knowledge: The Case of Purchase Behavior in Public Schools**

ABSTRACT

Research efforts over 25 years have generated substantial knowledge about organizational buying behavior. Most empirical studies underlying this knowledge base have, however, been generated among market dependent firms embedded in competitive environments. An important question is whether this knowledge is valid in other settings. Of particular importance is whether present insights can be generalized to public organizations. Public organizations come in many forms. "True" public organizations get their resources through budgets, and they are usually governed by rules and procedures.

* Address for correspondence: Kjell Grønhaug, Norwegian School of Economics and Business Adm., Breiviken 2, 5035 Bergen-Sandviken, Norway, phone: 47-55959460; fax: 47-55959430, e-mail: Kjell.Gronhaug@NHH.NO.

** The authors gratefully acknowledge the constructive comments of the editor and an anonymous reviewer.

KJELL GRØNHAUG, Professor

Norwegian School of Economics and Business Adm., N-5035 Bergen-Sandviken, Norway

• e-mail: Kjell.Gronhaug@NHH.NO.

GEIR GRIPSRUD, Professor

Norwegian School of Management N-1301 Sandvika, Norway • e-mail: Geir.Gripsrud@BI.NO

For marketers public organizations are important as their purchases are substantial, and represent important market opportunities. In this paper the robustness of organizational buying knowledge is examined by testing a set of interrelated hypotheses building on past research findings in a new context, i.e. the buying of public schools. Support was found for well-documented hypotheses, e.g. positive influence of product importance and complexity on amount of search and number of persons participating in the purchase. The findings also demonstrate that being in the "power-buyer" position really pays off.

Key words: *business-to-business marketing, organizational buying*

INTRODUCTION

The importance of organizational purchase activities can hardly be overstated. Through costly – and often time consuming buying activities organizations secure inputs of crucial importance to operate. Purchases also represent high fractions of their total costs, indicating that effectiveness and efficiency in buying may influence organizational performance.

Over the years the buying activities of organizations have been studied extensively. This is particularly so after the pioneering works of Sheth (1973) and Webster and Wind (1972). Reviews of past research reveal the following dominant research themes: organizational buying as multi-stage processes and participation in such processes. Inspection of past research also shows that both buying processes and participation are modified by a great number of factors (variables), e.g. type of product purchased, importance and novelty of the buying problem, organizational structure, power of buyers and sellers, and their mutual trust, reputation, and time pressure (for recent overviews, see Johnston and Lewin 1996; Ward and Webster 1991).

Closer examination of past research, shows, however, that organizational buying activities primarily have been studied empirically among the business firms. The purchase activities of public (and other) organizations have largely been ignored. Williams and Smellie (1985) have even claimed public purchasing to be "an administrative cinderella" (p. 33). The neglect of research on public purchasing is surprising as such purchases in most nations are substantial. For marketers the purchases from public organizations represent great market opportunities. In order to design adequate marketing strategies for exploiting such opportunities, insights into buying behaviors of these organizations are needed.

Public organizations play an important role in every-day life. They are established for a variety of purposes, such as offering education, utilities, transportation and health services, and to conduct research. Such organizations differ highly in size, resources and organizational arrangements. Compared to private organizations they can, however, be characterized by some common characteristics:

- They are budget-dependent because such organizations often get an important fraction of their resources over public (governmental) budgets:¹
- Detailed rules and procedures often prescribed by law usually exist for such organizations, influencing and directing their activities.
- Moreover, for “true” public organizations, direct competition is usually absent (or modest) as they are in some monopoly or “protected” position.

Public organizations should not be considered the same as not-for profit organizations. Most not-for profit organizations get a substantial part of their resources through market based transactions, while public organizations get (most of) their resources over public budgets. Compared to business firms, profit as such is not an explicit (sub)goal for not-for profit organizations. However, not-for business organizations have to secure resources and cover costs in order to keep the intended activity level in the same way as business firms.

It has been observed that the buying behaviors of public organizations differ from such behaviors in (private) business firms. In a detailed small-scale study reported by Grønhaug (1977), it was found for the purchase of the same complex product (computers) that need arousal, decision-processes, purchase criteria and buying influences and participation varied dramatically across business firms and public organizations. An interesting – and important question is whether insights into organizational buying acquired by studying market-dependent firms operating under fierce competition is valid for, i.e. can be generalized to budget-dependent public organizations regulated by rules and procedures in non-competitive environments? This question is intuitively important both to marketers – and marketing educators. For marketers adequate knowledge is needed to design effective marketing strategies. For marketing educators adequate knowledge is a prerequisite because what is taught should hold true, and because marketing (buyer behavior) also is taught to individuals employed by public organizations.

The paper proceeds as follows: In the next section a set of interrelated hypotheses based on empirical based research findings is derived. Then the research methodology underlying the present study is reported, followed by the presentation of findings. Finally the findings are discussed, and implications highlighted.

THEORY AND HYPOTHESES

In this section a set of interrelated hypotheses based on past organizational buying research is derived. The focus is on how novelty and importance of purchase influence search activities

¹ For excellent description of public organization and challenges confronted with to make them, see effective NOU 1989:5.

and participation in buying, whether organizational size may influence participation in purchase activities, and whether intensity of search, participation and organizational size (power) may impact buying performance.

Novelty and Importance of Purchase

Organizations buy a great variety of products and services. Multiple attempts have been made to classify products and services. For example, Copeland (1924) in his seminal contribution grouped product and services (among others) according to purchase purposes, i.e. whether the products purchased were directly linked to the firms product/service offerings ("production goods") or not, i.e. that whether the products and services were needed to keep the organization going ("institutional goods"). In very much of the contemporary buying behavior literature the novelty of the buying problem has been addressed, heavily influenced by the work of March and Simon's (1958) and Cyert and March (1963), showing that when confronted with the same (or similar) problem or task the handling of the problem becomes routinized. Buying problems are frequently classified according to whether they represent "new task", "modified rebuy" and "straight rebuy" as termed by Webster and Wind (1972) almost 25 years ago. When purchase of the same product (or service) is done repetitively its handling becomes routinized and search for information decreases. Examples of purchases that typical become routinized are purchases of standard raw-materials and accessories for offices. Infrequently bought products seldom become routinized to the same degree. This is partly due to the time-intervall between purchases, but also due to the fact that infrequently bought products seldom are identical. For example, a new model of a car or computer make differs from the former ones. Thus, search and evaluations – at least to some degree – often will be the case (cf. "modified rebuy", see Brucks 1985 for detailed discussion). It should also be noted that infrequently bought products often represent higher costs per purchase, indicating that more can be at stake, at the same time, they also tend to be perceived as more "complex" due to higher degree of novelty in the buying task. (For recent meta-analysis of empirical research findings, see Johnston and Lewin 1996). Thus we hypothesize:

H1: The novelty (and importance) of purchase is positively related to amount of search.

For organizations purchases represent tasks to be handled. Extant research shows that factors such as the importance and novelty of a purchase influence participation. (For overviews, see Bunn 1993; Spekman and Grønhaug 1986; Wind and Thomas 1981). When a task is novel, it often tend to be perceived as less structured and complex resulting in that organizations use more resources and time, and involve more people in such purchase situations compared to when this is not the case. Besides novelty also importance of purchase has been found to in-

fluence participation in buying.

H2: Novelty (complexity) and importance of a purchase are positively related to the number of organization members involved in the buying process.

Search for information and participation in buying imply purposeful use of scarce resources, i.e. time and capacity. In markets with multiple sellers and differentiated products it seems reasonable to assume that buying performance in terms of "good buys" will be positively related to intensity of search for information, and resources used for this purpose. The reason for believing so is that the more intensive search (everything equal) the higher the probability of coming across a favorable alternative, e.g. lowest price. We thus hypothesize:

H3: a) Intensity of search for information and b) number of organization members involved in the purchase are positively related to buying performance.

Organizational size

A variety of organizational characteristics have been found to influence the buying behavior. Probably the most frequently used organizational characteristic is size. Size has been used as proxy for resources, power, division of labor and skills. (For excellent discussion, see Kimberly 1976). For firms operating in the same industry it seems reasonable to assume that organizational size is positively correlated with resources, competence and power. More people are also available in larger than smaller organizations. Here we hypothesize that:

H4: The number of people participating in the buying of a given product (service) for organizations operating within the same industry is positively related to organizational size.

As noted above, size is frequently used as proxy for organizational resources and power. As known from economics and the discipline of strategy (Porter 1980), concentration (and power) of buyers (and sellers) may influence their profit opportunities. As buyers may vary considerably in size, some buyers may be conceived as "power buyers" (Dickson 1994, p. 418–419) positively influencing their buying performance. Thus we hypothesize:

H5: Organizational size is positively related to buying performance (for buyers within the same industry for the same product).

Figure 1 summarizes the derived hypotheses and how they are interrelated.

Figure 1 shows that novelty (complexity) and importance of the buying task is assumed to positively influence search and participation in this task. Organization size, here used as proxy for resources and power, is assumed positively related to number of persons participating

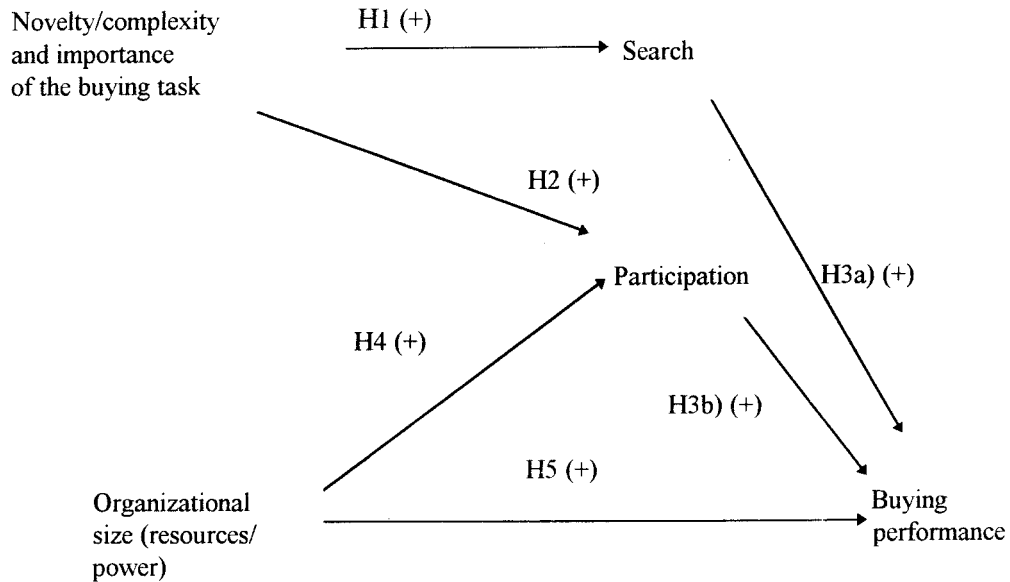


FIGURE 1. The hypotheses.

in the buying task, and buying performance, here considered the ability to obtain lower prices.

THE STUDY

This section reports the setting and research methodology underlying the present study.

Research setting

The research setting in this study is the purchasing of secondary schools. In the actual research context (Norway) such schools are public. They are organized under and report to the county administration. Detailed rules and procedures exist for how money can be used and should be reported. All schools are using the same, detailed accounting system also requiring reporting of purchases according to product groups. In such organizations budgets and money spent are supposed to be "in balance". The budget and accounting period is the calendar year. Money not spent in the budget year are not allowed to be transferred to next period. Secondary schools possess key characteristics of public organizations emphasized at the outset. Public schools tend to concentrate on their educational tasks, with less emphasis on professional management and activities like buying (NOU 1983; St.meld. 1990–91). Still, however, their purchases represent substantial marketing opportunities.

Sample and data²

The reason for limiting the study to one industry, here secondary schools was to reduce variations in and influence of factors outside the study, i.e. to control for the "industry effect" (cf. Dess et al 1990) which may distort relationships between variables studied. We further restricted the study to include purchases from all schools in one county situated in the south-eastern part of the country; all following the same laws and procedures for purchasing reporting to the same administrative authorities. The total number of secondary schools in the actual county was 29 when the study was conducted.

The data were gathered by mail questionnaires, developed after substantial prestudy activities, including the study of written documents and semistructured interviews with several schools. During this phase of the study it was, for example, observed that no schools had a purchase department, neither that titles like "purchaser", "purchase manager" existed at the school level, but that one or more persons "felt responsible" for purchase activities, even without being explicitly assigned to such tasks.

In each school two purchases were captured, one related to the purchase of a frequently bought, "incomplex" product, the other one related to a more complex infrequently purchased product. In borrowing from the idea of "collective and individual properties" proposed by Lazarsfeld and Menzel (1970), we can consider the school (organization) as a "collective" generating multiple purchases. The schools completed one questionnaire for each purchase. 25 of the 29 schools completed and returned the questionnaires. One of the schools returned, however, only completed the questionnaire for one of the purchases. Thus the response rate is 49/58, i.e. 88 per cent of the purchases intended to capture.

Measurements

Novelty/complexity and importance of buying task. As noted above two purchases were captured in each school by separate questionnaires. The one purchase was frequently bought accessories, e.g. writing paper and pencils, the other one was infrequently bought equipment, e.g. furniture and typing machines/computers. In order to create purchase novelty (importance) variability, a dichotomous variable was generated (1 = infrequently bought, complex product, 0 = frequently, simple product).

Organizational size was measured by total purchase in money (NOK) for each school. The reason for this choice is that budgets (and purchases) is very closely related to other size measures such as number of students and teachers. Accounting data containing information

² The data in this study come from a larger data base gathered under guidance of one of the authors to study buying in different types of public organizations.

about the purchases of each school were available allowing for unobtrusive and rather exact observations.

Search. The prestudy demonstrated that contacting (and being contacted by) supplier was (were) the most common way of search. In the questionnaire several simple questions to tap actual search were used, each one to be marked "x" if relevant. The response alternative representing extensive search reads: "We contact multiple suppliers, collect information about prices and supply conditions". A dichotomous variable was created (1 = extensive search, 0 = not extensive search). It should be noted that no effort was done to check the possibility of a two-phased buying process, i.e. "screening" – and preference phase as reported by Møller (1985), as this was outside the scope of the study and would require another type of data.

Participation was measured as number of people involved captured by the question (posed for each purchase), "How many persons participated in the purchase of this product?"

Buying performance is important and several measures (indicators) have been suggested (cf. Noordewier et al 1990). Measuring buying performance is associated with several difficulties. For example, differences in activities, cost structure and accounting practice may influence reported performance measure. Perceived performance measure as frequently used are also associated with ambiguities. Here buying performance was measured as discount obtained. The reason for this choice is as follow. In the actual context "guiding prices", based on cost plus calculation was for long the legal pricing practice. Even though this practice legally had changed, pricing practice had not changed very much when the data were collected. Even though price differences for the same product can be found, they are in most cases modest for product included in this study. Buying performance was captured by the following questions:

"Do you usually get discount for this product (compared to store price)?" If yes: "What percentage do you get?"

FINDINGS

This section reports our findings. We first report on the variables included. Then we report bivariate findings for each of the stated hypotheses. Finally, we present the result using multivariate test.

The variables

412

Variation in and distribution of the variables included are important for the analyses to be performed.

By choice of research design, the novelty/complexity of buying task is a dichotomous variable with almost 50–50 per cent split, i.e. .49 (st.dev. .505).

Organization size measured as total purchases, was found to vary considerable. The mean value and standard deviation were NOK 6755.9 (and NOK 3.921).

In 59.2 per cent of the purchases extensive search was exhibited (st.dev. .497) as measured here.

Discount obtained, i.e. our buying performance measure was found to vary from eight per cent to 35 per cent. Mean value was 12.2 per cent with the standard deviation 5.4. per cent. The distribution was found to be rather skewed and peaked.

Bivariate analysis

Bivariate test of the stated hypotheses was performed by calculating pearson correlation coefficients. Due to the one dichotomous variable (product complexity/importance and the distribution of the performance variable, the strength of some of the observed relationships are probably somewhat deflated.

TABLE 1. Bivariate tests of the hypotheses (r)

| VARIABLES | r | s.l |
|--|------|----------|
| H1: NOVELTY/COMPLEXITY – SEARCH | .65 | P < .001 |
| H2: NOVELTY/COMPLEXITY – PARTICIPATION | .39 | P < .01 |
| H3A: SEARCH – BUYING PERFORMANCE | -.01 | N.S |
| 3B: PARTICIPATION – BUYING PERFORMANCE | -.13 | N.S |
| H4: ORGANIZATIONAL SIZE – PARTICIPATION | -.08 | N.S |
| H5: ORGANIZATIONAL SIZE – BUYING PERFORMANCE | .29 | P < .05 |

Inspection of Table 1 shows that hypotheses H1, H2 and H5 are supported, i.e. that the null-hypotheses are rejected at the 0.5-level or better. However, the assumed relationships between effort, i.e. search (H3a) and participation (H3b) and buying performance, and the assumed association between organizational size and participation (H4) were not supported by the findings.

Multivariate analysis

Due to intercorrelations between the variables included, multivariate test of the stated hypotheses is needed. Moreover, correlations only test covariation, while the stated hypotheses are in causal terms. Here a cross-sectional design is used, which in a strict sense does not allow

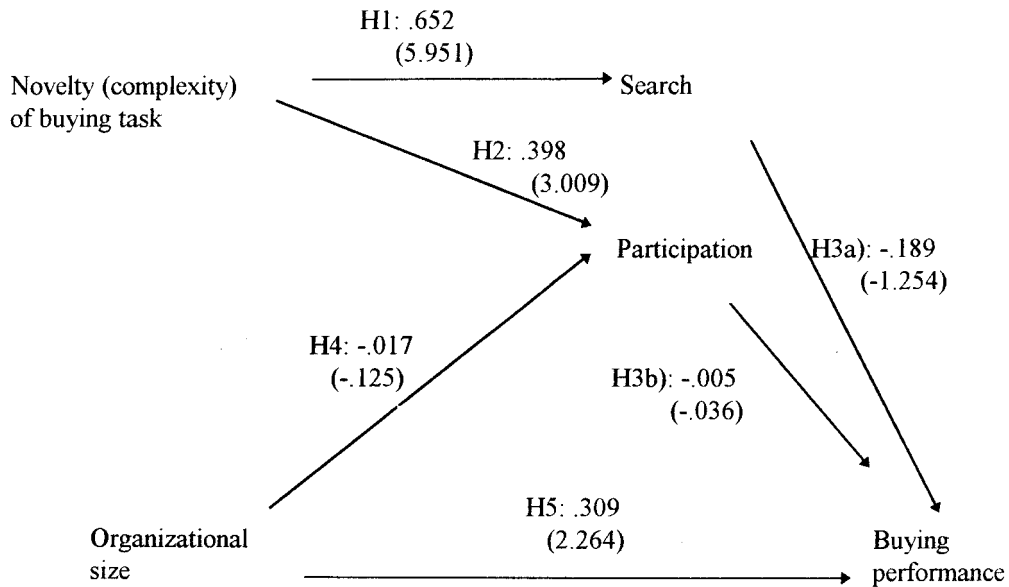


FIGURE 2. Estimated relationships.

for causal inferences. However, by using prior information, we here use the logic of “weak-causal ordering”, underlying path-analyses and much of causal modelling research. The present study included observable variables only, and SIMPLIS 1.3 (a simplified version of LISREL, developed by Jöreskog and Sörbom 1987) was used to estimate the structural parameters (see Figure 1). The results are presented in Figure 2.

Figure 2 shows the estimated parameters and – in parantheses t-values for the relationships (hypotheses) tested. Inspection of the reported t-values, shows strong support for H1 ($p < .001$) and H2 ($p < .001$). Support is also found for H5 ($p < .05$). However, neither H3a, H3b nor H4 are supported.

DISCUSSION

The reported findings deserve some further comments.

The support for hypotheses H1 and H2 corroborates previous findings. The observed impact of organizational size on performance, H5, demonstrates that “power buyers” exist, and that being in the position of power buyers may pay off as assumed in economics and the “position school” in strategy (Porter 1980).

The data failed to support the assumed relationship between effort and buying perform-

ance. Why so? Several explanations can be provided. One is that most of the effect on buying performance as measured here is captured by "power", i.e. organizational size. Another point is that the posted price differences are rather modest for the product included, and thus the expected value of extra search may be modest (cf. H3a, H3b).

The negligible covariation between size (resources) and participation (H4) indicates that the purchases included in the study are tasks to be solved and what is considered sufficient effort to solve these tasks are invariant of organizational size (resources). It should also be noted that the actual research context is somewhat "special". Schools are staffed with skilled employees. They are trained for the tasks they are supposed to do – teaching. Buying are outside their skills and prime activities. This may of course influence the quality of their buying efforts.

In the present study we did not examine the effect of organizational size on search. Inspection of the correlation coefficient shows, however, that this is negligible ($r = .01$ (n.s)). A positive correlation coefficient between participation and search was observed $r = .37$ ($p < .01$). When controlling for product type, i.e. by calculating the partial correlation between participation and search controlling for type of product, this relationship (covariation) was, however, dramatically reduced and found statistically insignificant.

The reported support for the assumed relationship between novelty (complexity) of buying task and search (H1) and participation (H2) show robustness of well-established theoretical relationships. The observed positive relationship between organizational size (used as proxy for "power") and buying performance is in concordance with standard economic theory. However, it might be questioned whether higher discounts are offered to larger than smaller buyers due to their position (power), and sellers' willingness to safeguard transactions, or because larger customers are more profitable and that higher discounts to such customers represent established practice.

An important question relates to whether and for what extent the reported findings can be generalized. The findings can intuitively be generalized to other secondary schools, as they are organized in the same way and possess similar characteristics as those included in the study. It is also likely that the findings can be generalized to other public organizations where purchasing is a "side job" outside the main activities and skills of the employees. For public organizations with professional purchasers this will probably not be the case. However, the support of H1 (novelty and search), H2 (novelty, importance and participation) and H5 (size/power and performance) corroborates reported findings among business firms, and such findings can probably also be generalized to public organizations with professional purchasing. ■

REFERENCES

- BRUCKS, M. (1985), "The Effects of Product Class Knowledge on Information Search Behavior", *Journal of Consumer Research*, 12, 1–15.
- BUNN, M.D. (1993), "Taxonomy of Buying Decision Approaches", *Journal of Marketing*, 57 (January), 38–56.
- COPELAND, M.T. (1926), *Principle of Marketing*, Chicago, Shaw.
- CYERT, R.M. and MARCH, J.G. (1963), *A Behavioral Theory of the Firm*, New Jersey, Prentice-Hall.
- DESS, B.G., IRELAND, R.D. and HUTT, M.A. (1990), "Industry Effects and Management Research", *Strategic Management Journal*, 16 (1), 1–27.
- DICKSON, P.R. (1994), *Marketing Management*, New York, The Dryden Press.
- GRØNHAUG, K. (1977), "Exploring a Complex Organizational Buying Decision", *Industrial Marketing Management*, 6, 439–445.
- JOHNSTON, W.S. and LEWIN, J.E. (1996), "Organizational Buying Behavior: Toward an Integrated Framework", *Journal of Business Research*, 35, 1–15.
- JÖRESKOG, K.G. and SÖRBOM, D. (1987), *SIMPLIS*, Mooresville, Scientific Software, Inc.
- KIMBERLY, J.R. (1976), "Organizational Size and the Structuralistic Perspective: A Review, Critique and Proposal", *Administrative Science Quarterly*, 21 (December), 511–527.
- LAZARSFELD, P.E. and MENZEL, H. (1970), "On the Relationship between Individual and Collective Properties", in A. Etzioni, *A Sociological Reader of Complex Organizations*, New York, Holt, Rinehart and Winston.
- MARCH, J.G. and SIMON, H.A. (1958), *Organizations*, New York, Wiley.
- MØLLER, K. (1985), "Research Strategies in Analyzing Organizational Buying Processes", *Journal of Business Research*, 13, 3–17.
- NOORDEWIJER, JOHN G. and NEVIN, J.R. (1990), "Performance Outcomes of Purchasing Arrangements in Industrial Buyer-Vender Relationships", *Journal of Marketing*, 54, 80–93.
- NOU (1989:5), *En bedre organisert stat*, Oslo, Forbruker- og administrasjonsdepartementet.
- NOU (1983:14), *Skoleledelse og skoleutvikling*.
- PORTER, M.E. (1980), *Competitive Strategy*, New York, Free Press.
- SHETH, J.M. (1973), "A Model of Industrial Buyer Behavior", *Journal of Marketing*, 37 (October), 50–56.
- SPEKMAN, R.E. and GRØNHAUG, K. (1986), "Conceptual and Methodological Issues in Buying Center Research", *European Journal of Marketing*, 20 (7), 50–63.
- St.meld. nr. 37 (1990–91), *Om organisering og styring i utdanningssektoren*.
- WARD, S. and WEBSTER, F.E. (1991), "Organizational Buying Behavior", in T. Robertson and H.H. Kassarian (eds.), *Handbook of Consumer Behavior*, New Jersey, Prentice-Hall, 419–458.
- WEBSTER, F.E. and WIND, Y. (1972), *Organizational Buying Behavior*, New Jersey, Prentice-Hall/Englewood Cliffs.
- WILLIAMS, R. and SMELLIE, R. (1985), "Public Purchasing: An Administrative Cinderella", *Public Administration*, 63 (Spring), 23–29.
- WIND, Y. and THOMAS, R.J. (1981), "Conceptual and Methodological Issues in Organizational Behavior", *European Journal of Marketing*, 14 (5/6), 239–261.