AJAY K. KOHLI, BERNARD J. JAWORSKI, and AJITH KUMAR*

پایگاه علمی-پژوهشی پارس مدیر
www.ParsModir.com

In recent years, academic and practitioner interest has focused on market orientation and factors that engender this orientation in organizations. However, much less attention has been devoted to developing a valid measure of market orientation. Here we define market orientation as the organizationwide generation of market intelligence pertaining to current and future needs of customers, dissemination of intelligence horizontally and vertically within the organization, and organizationwide action or responsiveness to market intelligence. The authors describe a procedure to develop a measure of the construct. Key features of the research methodology include several rounds of pretesting, a single-informant assessment, and a multi-informant (both marketing and nonmarketing executives) replication and extension. The multi-informant results indicate that the proposed 20-item market orientation scale (MARKOR) may be best represented by a factor structure that consists of one general market orientation factor, one factor for intelligence generation, one factor for dissemination and responsiveness, one marketing informant factor, and one nonmarketing informant factor. Taking into account the informant factors, the subsequent validation tests are moderately supportive of the market orientation construct. The authors discuss methodological, substantive, and application directions for future research in light of these findings.

MARKOR: A Measure of Market Orientation

In the past few years, there has been a renewed academic and practitioner interest in the market orientation concept (see Day 1990; Kohli and Jaworski 1990; Marketing Science Institute 1988, 1990; Narver and Slater 1990; Shapiro 1988; Webster 1988). This resurgence of interest is not surprising, since the concept represents the foundation of high-quality marketing practice. What is noteworthy, however, is that relatively little systematic effort has been devoted to developing a valid measure of market orientation.

Though some studies address measurement concerns (see Lawton and Parasuraman 1980; McNamara 1972), the primary focus of these studies is not measure development. As such, the measures used are often adhoc and not developed on the basis of systematical procedures for scale development (e.g., Churchill 1979; Gerbing and Anderson 1988). Though the Narver and Slater (1990) study is clearly the most comprehensive to date and has many positive features, it (1) adopts a focused view of markets by emphasizing customers and competition as compared with a view that focuses on these two stakeholders and additional factors that drive customer needs and expectation (e.g., technology, regulation), (2) does not tap the speed with which market intelligence is generated and disseminated within an organization, and (3) includes a number of items that do not tap *specific* activities and behaviors that represent a market orientation.

Our purpose is to develop a measure of market orientation and assess its psychometric properties. In the sections to follow we focus on the domain of the construct, item generation, and item purification. Following this discussion, we review findings from two national samples. Attention in these two sections is focused prin-

*Ajay K. Kohli is an Associate Professor, Department of Marketing Administration, The University of Texas at Austin. Bernard J. Jaworski is a Visiting Associate Professor, Graduate School of Business, Harvard University. Ajith Kumar is an Associate Professor, College of Business, Arizona State University. Support provided by the Marketing Science Institute, the College of Business Administration at the University of Texas, Austin, and the Karl Eller Center for Entrepreneurship at the University of Arizona is gratefully acknowledged. All three authors contributed equally to this paper.

Journal of Marketing Research
Vol. XXX (November 1993), 467–77

cipally on the psychometric properties of the scale. We conclude with a discussion of managerial applications and directions for future research.

DOMAIN SPECIFICATION

Literature-Based Perspective

In the present instance, the initial domain specification step is more complex than it first appears because of the multiple, varying definitions of market orientation. The literature reveals a number of meanings ascribed to market orientation, including involving marketing executives in strategic decisions (Felton 1959; McNamara 1972), placing greater emphasis on customers as compared to production/cost concerns (Kanopa and Calabro 1971), integrating activities within the marketing function (Felton 1959; McNamara 1972), according a leadership role to marketing (Viebranz 1967), and so on (see Lavidge 1966 and McKitterick 1957 for additional perspectives).

Though the aforementioned authors differ in their preferred conceptualizations, it is clear that three core themes underlie these definitions: (1) customer focus, (2) coordinated marketing, and (3) profitability (see Kotler 1988). However, there are significant limitations to each of these themes (see Kohli and Jaworski 1990).

Field-Based Perspective

Given the diverse perspectives and limitations associated with the three themes, efforts were undertaken to delineate the domain of the construct by conducting personal interviews with managers. This effort resulted in the identification of three basic components of market orientation. Since these have been described in recent work (see Kohli and Jaworski 1990), each is only briefly discussed in the following paragraphs.

Intelligence generation. Market intelligence generation refers to the collection and assessment of *both* customer needs/preferences and the forces (i.e., task and macro environments) that influence the development and refinement of those needs. Importantly, multiple departments should engage in this activity because each has a unique market lens.

Intelligence dissemination. Intelligence dissemination refers to the process and extent of market information exchange within a given organization. Because the focal point of dissemination is the entire SBU, attention should be balanced between both the horizontal (i.e., interdepartmental) and vertical transmission of marketplace information. Furthermore, the dissemination of intelligence occurs both formally and informally.

Responsiveness. Responsiveness is action taken in response to intelligence that is generated and disseminated. On the planning side, the concern focuses on the degree to which marketplace needs play a prominent role in the assessment of market segments and development of marketing programs. Action on the basis of market intelligence captures the speed and coordination with which the marketing programs are implemented.

Integration

In summary, market orientation refers to the organizationwide generation of market intelligence pertaining to current and future needs of customers, dissemination of intelligence within the organization, and responsiveness to it. Key features of this integrated view are (1) an expanded focus on market rather than customer intelligence, (2) an emphasis on a specific form of interfunctional coordination with respect to market intelligence, and (3) a focus on activities related to intelligence processing rather than the effects of these activities (e.g., profitability). Also, it should be stressed that this view allows one to assess the *degree* to which an organization is market-oriented, rather than force an either/or evaluation.

GENERATION OF SCALE ITEMS

The next step entailed the generation of a set of items to capture the domain of market orientation. On the basis of the interviews conducted, two of the authors independently generated items for measuring each component of market orientation. From these efforts, 25 items were initially selected for their appropriateness, uniqueness, and ability to convey to informants "different shades of meaning" (see Churchill 1979). This list included nine items pertaining to market intelligence generation, eight pertaining to dissemination, and eight tapping the responsiveness component.

PURIFICATION OF SCALE ITEMS

First Pretest

Three pretests were conducted to assess the quality of the measure items. In the first, a brief questionnaire containing the items and additional scales designed to assess the measure's properties was administered in person to a total of 27 marketing and nonmarketing executives. They were asked to complete the questionnaire and point out any item that was either ambiguous or otherwise difficult to answer. On the basis of either the low item-total correlations or evidence of an item potentially cross-loading on two factors, four items were eliminated. This resulted in a pretested scale of 21 items.

Second Pretest

After completing the initial pretests, we obtained input from seven academic experts. In this phase, the scales for all constructs were clearly marked and the experts were asked to critically evaluate the items. On the basis of the detailed comments, some items were modified, others were eliminated, and new ones developed. The major modification at this phase was the expansion of the scale to 32 items. In Appendix A, we report the items that were modified and the new items that were added to the scale.

Third Pretest

The revised, expanded scale was then subjected to one final phase of pretesting: Seven managers were asked to complete the questionnaire and raise concerns as they completed the scales. At this stage, very few concerns were noted and only minor refinements were made. Collectively, the results of the three pretests suggest that the measure of market orientation was evolving to the point at which a full-scale test of the measure was warranted.

DATA COLLECTION

Single-Informant Sample

After the pretests, the refined survey was mailed to a national sample (N = 500) of marketing executives. This sample was drawn from a recently completed American Marketing Association membership roster. Three contacts were made with respondents. Of the 500 executives, 13 were excluded from the final response calculation (e.g., no longer with firm), leaving a base of 487. Of these, 230 responded, for a final response rate of 47.2%.

Multi-Informant Sample

A second test of the instrument, which used a multi-informant approach, consisted of two distinct sampling frames. The first data involved a sample of Marketing Science Institute member firms. To begin the process, the MSI Executive Director contacted each member firm to solicit participation. Of the 49 MSI firms, 13 agreed to participate. The contact in each firm was then asked to provide the names of a senior marketing and nonmarketing executive for up to seven SBUs. This request resulted in 27 matched pairs of executives. Similar to the single-informant study, the participants were contacted three times to solicit cooperation. Moreover, in some firms, the MSI contact also sent a letter to the informant encouraging their participation. The resulting response rates were high for both the marketing (88.9%) and nonmarketing (77.8%) executives.

Data collection for the second sampling frame was much more involved than the first since it involved a two-step process with a minimum of six mailings over a six-month period. In the first phase, we solicited participation from chief executive officers (CEOs) in the Dun and Bradstreet top 1000 U.S. firms. The approach was to select every other firm in this listing for a total potential sample size of 500 firms. The CEOs were contacted a maximum of three times. Of the 500 CEOs contacted, 21 could not be reached. The end result of this effort was the participation of 102 firms with a total of 229 SBUs.

At this point, we commenced soliciting the participation of the executives who would serve as informants. Again, up to three contacts per informant were employed. This effort led to 79.6% of the marketing and 70.0% of the nonmarketing executives participating in the study.

ANALYSIS

Overview

The analysis was done in three stages. In the first, the single-informant sample was used to eliminate from the 32-item scale, those items that did not adequately reflect any of the theoretical components of the construct.[1] Second, the multi-informant sample was then used to test several theoretically plausible alternative factor structure specifications and to select the most appropriate factor representation for those items retained at the end of the first stage. Last, various components of the construct were correlated with selected managerially relevant constructs in the multi-informant sample to assess the predictive validity of the market orientation measures.

Single-Informant Sample Analysis

Because both prior conceptual models and exploratory empirical analyses of the market orientation construct suggest that it should encompass the three conceptually distinct components of intelligence generation, dissemination, and responsiveness, several theoretically plausible alternative hypotheses can be specified a priori.

H_1: Though the market orientation construct is conceptualized as consisting of three distinct components, the covariation among the 32 items can be accounted for by a single factor (i.e., a general market orientation factor).

H_2: Covariation among the items can be accounted for by a restricted three-factor model wherein each factor represents a particular conceptual component of market orientation and each item is reflective only of a single component (i.e., loads only on one factor). The three factors may be correlated or uncorrelated.

H_3: Responses to each item are reflective of two factors: a general market orientation factor and a specific component factor corresponding to one of the three conceptual components. Thus the covariation among the items can be accounted for by a four-factor model. The four factors may be uncorrelated or correlated.

All models' fits were evaluated using several criteria, including the chi-square goodness-of-fit test statistic, Joreskog and Sorbom's goodness-of-fit index (GFI), the rescaled noncentrality parameter (NCP) and the rescaled noncentrality index (RNI) of McDonald and Marsh (1990), the Tucker-Lewis index (TLI), the admissibility of the model solution, the number of significant residuals (NSR) and their distribution across the elements of the residual covariance matrix and in the Q-plot.[2] Summary results

[1]This approach is consistent with the suggestion of two anonymous reviewers. Furthermore, in addition to the possibility that some items may have low reliability/validity and consequently ought to be excluded, a reviewer pointed out that it may be impractical to administer a 32-item scale to managers/executives and suggested shortening the scale independent of reliability/validity considerations.

[2]For evaluations of overall goodness of fit McDonald and Marsh (1990) suggest only the noncentrality parameter (NCP) and a normed version thereof, the Tucker-Lewis index (TLI), and the relative noncentrality index (RNI) may be unbiased in finite samples.

Table 1
SUMMARY RESULTS—SINGLE INFORMANT SAMPLE

Model	*Content*	χ^2	*df*	*GFI*	*NCP*	*RNI*	*TLI*	*NSNR*
MOD1	One General Factor	897.46	464	.722	2.871	.733	.715	19
MOD2	Three correlated market orientation component factors	806.35	461	.756	2.287	.788	.771	24
MOD3	Three uncorrelated market orientation component factors	1,010.05	464	.722	3.616	.664	.641	236
MOD4	One general factor + three correlated market orientation component factors	710.01	429	.784	1.801	.833	.806	23
MOD5	One general factor + three uncorrelated market orientation component factors	718.95	432	.779	1.900	.823	.797	24
MOD6	Null Model	2,121.28	496	.281	10.763			376

for all models fit to the 32 items are given in Table 1.[3] We used the solution for model MOD4 as the basis for evaluating and eliminating items.

We used several criteria to evaluate items, including the magnitude of each item's error variance estimate, evidence of items needing to cross-load on more than one component factor as indicated by large modification indices, and the extent to which items gave rise to significant residual covariation. Though from a measurement theory standpoint there is no intrinsic necessity to eliminate items potentially reflective of more than one of the market orientation components, we believed that from a practical/managerial standpoint it might be desirable to have a scale consisting of single-component items because this would allow the scale to be partitioned into subscales, each of which assesses a specific component of the market orientation construct. The diagnosis for model MOD4, in conjunction with the need to provide adequate representation for all three components of market orientation, led us to eliminate 12 items—M2, M6, M7, M8, M11, M14, M17 M20, M23, M25, M30, and M31. This left 20 items for subsequent analyses: six for intelligence generation, five for dissemination, and nine for responsiveness. Refitting model MOD4 to the reduced set of 20 items resulted in considerable improvement in fit (χ^2 with 147 df = 223.55, GFI = .875).

Multi-Informant Sample Analysis

The multi-informant sample analysis was carried out in two parts. First, several theoretically plausible models of market orientation were fit to the 20 selected items to redetermine the most appropriate factor representation taking into account potential informant-specific and item-specific factors (Anderson 1985; Kumar and Dillon 1990). This replication stage involved 40 variables because two informants responded to each item. Second, factors of the market orientation construct identified in the first part were correlated with selected managerially relevant constructs to assess predictive validity (validation analysis).

Replication analysis. Because the number of plausible alternative models that could be fit to the 40 variables becomes relatively large at this point, we describe an informal algorithm we used for generating models instead of individually specifying each possible model. Every model we considered is a combination of some subset of three generic types of factors[4]: (1) a general market orientation factor (hereafter also referred to as a general factor) common to all 40 variables (i.e., a factor on which all 40 variables are allowed to load), (2) a component factor each for intelligence generation, intelligence dissemination items, and responsiveness items, respectively, and (3) an informant-specific factor, one common to all the responses of the marketing informant (hereafter also referred to as an M-factor or a factor for M) and another common to all the responses of the non-marketing informant (hereafter also referred to as an N-factor or factor for N).

With respect to inclusion of factors in a model we used the following guidelines: (1) either all three component factors would be included in a model or all three would be excluded, (2) either both the M-factor and the N-factor would be included in a model or both would be ex-

[3]Throughout our analyses across both samples, in all models including a general factor (i.e., those containing a factor on which all items are allowed to load), the general factor had to be restricted to be orthogonal to the market orientation component factors and/or factors specific to each informant for identification purposes, hence, the absence from Tables 1 and 2 of models wherein the general factor was allowed to correlate with one or more of the aforementioned component- and/or informant-specific factors.

[4]In our analysis, we also considered models with a fourth generic type of factor: an item-specific factor for each of the 20 items. However, attempts to estimate models including such factors resulted in nonconvergent and/or unidentified solutions. Detailed analysis indicated that in our data covariation due solely to repeated use of each item across the two informants apparently was not significant enough to warrant inclusion of item-specificity factors.

cluded. A priori, we had no reason to believe that component factors would be required only for one or two of the components or that the only one of the informants' responses was likely to give rise to an informant-specific factor. With respect to correlations between factors included in a model we used the following guidelines: (1) In no model would two different types of generic factors be allowed to correlate (i.e., correlations, if any, would only be allowed between factors of the same type as, for example, between the M- and N-factors but not the M-factor and any of the component factors), and (2) In models including the component factors either all three factors would be allowed to intercorrelate or all three factors would be modeled as orthogonal. As noted earlier in a footnote the general factor, when included in a model, had to be constrained for identification purposes to be orthogonal to all other included factors.

Summary fit results for models generated according to the algorithm described previously are given in Table 2. With respect to model descriptions in the table, all included factors are uncorrelated unless explicitly specified otherwise. In contrast to Table 1, the number of significant residuals (NSR) is partitioned into three components: those associated with covariances between responses of the marketing informant (M), those associated with covariances between responses of the nonmarketing informant (N), and those associated with "cross-block" covariances (C). We used this decomposition to pinpoint better systematic patterns in the residuals, if any.

In all models in which the M- and N-factors were allowed to correlate—models MOD9, MOD11, and MOD22—the correlation between the two factors was nonsignificant (t-values of 1.911, 1.491, and 1.623 in the three models, respectively), suggesting exclusion of these models from further consideration. In models MOD14, MOD20, and MOD22—all of which include a general factor and three component factors—the correlations between the intelligence dissemination component factor and the responsiveness component factor were .983, .996, and .991, respectively, suggesting that in models including a general factor, the two component factors may lack discriminant validity. In contrast, the correlations between the intelligence generation component factor and the other two component factors averaged .604, .478, and .488 in the three models, respectively. This led us to estimate an additional model (MOD25), similar to model MOD20, wherein the component factors of intelligence dissemination and responsiveness were collapsed into a single dissemination/responsiveness factor.

Though retrospective, one potential explanation for the lack of discriminant validity between the intelligence dissemination and responsiveness factors, as well as the relatively modest correlations between these components and the intelligence generation factor, derives from the traditional division of intelligence collection tasks within an organization. Traditionally, technology developments are scanned by research and development, production innovations are monitored by manufacturing, and customer information is filtered through marketing.[5] Therefore, in a traditional structure, each department is able to collect marketplace information without necessarily having to interact with other departments. In contrast, many of the items measuring the other two components directly or indirectly tap into the extent to which interdepartmental exchanges occur on a regular basis, for both information exchange and planning and decision-making purposes. If regular interdepartmental exchanges are the norm within an organization (i.e., a salient aspect of an organization's culture), then it is as likely to be manifested through informational exchanges as through collaboration on planning/decision processes. In other words, the intelligence generation process may be more reflective of the extent to which each department independently engages in the process, whereas the processes embodied in the other two components are likely both simultaneously circumscribed or facilitated by the organizational norms governing interdepartmental exchanges/coordination in general. In short, the intelligence generation process can vary relatively independently of the other two components which, however, may tend to covary to a greater extent with each other.

The summary results in Table 2, in conjunction with other detailed model diagnostics provided in the LISREL output, led us to select model MOD25 as the best representation for the 40 variables; estimates of model parameters are given in Table 3. In model MOD25 the correlation between the intelligence generation factor and the dissemination/responsiveness factor was .483 (t-value=4.194). In interpreting the results it should be noted that for each informant (i.e., within each block) items 4, 9, 18, 19, 21, 28, and 29 are negatively worded and therefore should have signs opposite that of the loadings of other items. In this regard only the loading of M24 on the general market orientation factor is both significant and aberrant.

Validation Analysis

Validation analysis was also carried out in two parts. First, items measuring each construct used for validation were subject to confirmatory factor analyses, both to determine the appropriate factor representations for the items as well as to prune items that were poor measures of the underlying construct. This was done separately for each construct. Then the factors representing each construct were simultaneously correlated with all five factors of Model MOD25, i.e., the selected model of market ori-

[5]It should be stressed, however, that earlier work has suggested that this role may be descriptive of organizations but that normatively all departments should take part in this process (Kohli and Jaworski 1990).

Table 2
SUMMARY RESULTS—MULTI-INFORMANT SAMPLE

Model	Content	χ^2	df	GFI	NCP	RNI	TLI	NSR M	NSR C	NSR N
MOD7	One general factor	1,397.90	740	.503	8.02	.413	.381	74	6	3
MOD8	1 factor for M + 1 factor for N	1,168.11	740	.627	5.22	.618	.597	7	27	3
MOD9	1 factor for M + 1 factor for N (both factors correlated)	1,164.80	739	.627	5.19	.620	.599	7	18	3
MOD10	1 general factor + 1 factor for M + 1 factor for N	1070.81	700	.652	4.52	.669	.631	2	16	2
MOD11	1 general factor + 1 factor for M + 1 factor for N (M and N factors correlated)	1,068.46	699	.652	4.51	.670	.632	4	9	3
MOD12	3 correlated market orientation component factors	1,388.26	737	.505	7.94	.419	.385	73	5	3
MOD13	3 orthogonal market orientation component factors	1,481.10	740	.505	9.04	.339	.303	82	10	96
MOD14	3 correlated market orientation component factors + 1 general factor	1,091.74	697	.642	4.81	.648	.606	5	2	4
MOD15	3 orthogonal market orientation component factors + 1 general factor	1,161.00	700	.631	5.62	.589	.542	46	4	4
MOD16	3 correlated market orientation component factors + 1 factor for M + 1 factor for N (M and N factors correlated)	IS								
MOD17	3 orthogonal market orientation component factors + 1 factor for M + 1 factor for N (M and N factors correlated)	NCS								
MOD18	3 correlated market orientation component factors + 1 factor for M + 1 factor for N	IS								
MOD19	3 orthogonal market orientation component factors + 1 factor for M + 1 factor for N	NCS								
MOD20	3 correlated market orientation component factors + 1 general factor + 1 factor for M + 1 factor for N	955.14	657	.681	3.64	.734	.684	1	4	2
MOD21	3 orthogonal market orientation component factors + 1 general factor + 1 factor for M + 1 factor for N	NCS								
MOD22	3 correlated market orientation component factors + 1 general factor + 1 factor for M + 1 factor for N (M and N factors correlated)	953.07	656	.681	3.62	.735	.685	1	3	1
MOD23	3 orthogonal market orientation component factors + 1 general factor + 1 factor for M + 1 factor for N (M and N factors correlated)	NCS								
MOD24	Null Model	1,900.57	780	.340	13.665			95	27	139
MOD25	1 factor for intelligence generation + 1 factor for dissemination and responsiveness + 1 factor for M + 1 factor for N + 1 general factor (first two factors correlated)	955.21	659	.681	3.612	.736	.687	1	4	2

IS = Improper solution; estimated matrix of factor correlations was not positive definite
NCS = Non-convergent solution

entation whose solution is shown in Table 3. Once again this was done separately for each construct.[6]

Five of the six constructs used for validation—top management emphasis on market orientation, interfunctional conflict, extent of SBU reliance on market-based rewards, employees' organizational commitment, and assessments of business performance—were measured using multiple items. The sixth "construct" was a single-item global measure of market orientation, responses to which were obtained from both marketing and nonmarketing informants (see Appendix B). With each of the five constructs measured using multiple items, the best factor representation, even after eliminating unreliable items in certain cases, was a single factor for the marketing informant's responses and another factor the nonmarketing informant's responses, that is, in each case there was an M- and an N-factor for the construct concerned. Given this stable pattern across the five constructs with multiple items, we decided to keep separate as well the single responses of the two informants to the global measure of market orientation in the predictive validation analysis.

Table 4 reports the correlations of the M- and N-specific components of each of the six constructs with every factor in the market orientation model.[7] There is a general tendency for M's perceptions to be more strongly correlated with the dissemination/responsiveness component, whereas N's perceptions tend to be more strongly correlated with the general factor. To some extent this might be because of the relatively higher loadings of M's responses on the dissemination/responsiveness component and the similarly higher loadings of N's responses on the general market orientation factor (see Table 3). With respect to top management emphasis, the negative coefficients associated with N's perceptions reflect the fact that the loadings for N's responses to the items measuring top management emphasis on the corresponding factor were all negative; hence the true correlations for N's perceptions with all factors (except the dissemination/responsiveness component) are positive. Overall, these findings are moderately supportive of the validity of the market orientation construct.

DISCUSSION

The market orientation measure (MARKOR) assesses the degree to which a SBU (1) engages in multi-department market intelligence generation activities, (2) disseminates this intelligence vertically and horizontally through both formal and informal channels, and (3) develops and implements marketing programs on the basis of the intelligence generated. Key attributes of the measure include (1) a focus on customers of the SBU *and* the forces that drive their needs and preferences, (2) activity-based items, not business philosophy, and (3) a demarcation of a general market orientation factor and associated component factors. Though the measure represents a significant step forward, several methodological, substantive, and application issues warrant consideration.

Methodological Issues

Two methodological issues raise interesting areas for future research: (1) a potential causal ordering among the various components of market orientation, and (2) revision, expansion, and revalidation of the scale items. Consistent with emerging work on the use of market information (Barrabba and Zaltman 1991), one could argue that there is an ordering among the various types of intelligence, with generation naturally occurring to a greater degree than what is disseminated. In turn, on the basis of this disseminated information, the business unit might or might not act on the intelligence.[8] If this conceptualization is accurate, then it may imply that a Guttman scaling procedure would be an appropriate analysis approach.

Concerning the scale items, revision of the deleted scale items to reflect specific stakeholders (e.g., we survey our distributors but not retailers) or within-stakeholder variation (e.g., informal hall talk concerning our most direct competitor versus all competitors) may be a useful direction to consider. Relatedly, it may be the case that specific items need to modified to more accurately reflect the dispersion in the population (e.g., periodically circulates versus never circulates). Finally, though the proposed scale was correlated with a second general measure of market orientation and predictive validity tests were performed, further work on scale validation might consider using unobtrusive measures (e.g., company records or annual reports), interviews with key industry analysts, and customer assessments to assess the soundness of the measure.

[6]The conduct of our analysis in various stages, in contrast to the recommendations made by Gerbing and Anderson (1988) in their two-step approach, was necessitated by practical reasons. If all variables were to be considered simultaneously in the multi-informant sample, we would have had to fit LISREL models involving 92 variables: 40 from the market orientation scale and 52 items for the six constructs used in the validation analysis. Preliminary attempts to fit some measurement models simultaneously to all 92 variables, or even a large subset thereof, led to three major, potentially intractable problems: (1) significant loss of respondents because of the consistent use of the listwise deletion option for all analyses, (2) our inability to obtain convergent solutions in many cases, most likely because of the large number of variables involved, and (3) the extreme difficulty of analyzing meaningfully any solution we could obtain to prune troublesome items or to accurately pinpoint potential sources of model misspecifications.

[7]When the appropriate models were estimated for interfunctional conflict and top management emphasis, a nonsignificant negative variance estimate was obtained in each case for item M9. Both models were reestimated by first constraining the variance for M9 to be zero and alternatively constraining it to be equal to its estimated value in model M28. In each scenario, the correlations obtained were very close to those reported in Table 4.

[8]This causal order was noted by an anonymous reviewer.

Table 3
ESTIMATES FOR MODEL M28

Variable	Intelligence Generation	Dissemination/ Responsiveness	General Marketing Orientation	M-factor	N-factor	Error Variance
M-block						
1	.172		.081	.368[a]		.828
3	.111		.117	.581[a]		.637
4	−.628[a]		−.050	−.321[a]		.499
5	.069		−.101	.736[a]		.444
9	−.901[a]		.096	−.018		.179
10	.332[a]		−.133	.238		.815
12		.452[a]	.076	.222		.741
13		.443[a]	−.031	.332[a]		.692
15		.450[a]	.000	.155		.773
16		.102	.004	.615[a]		.612
18		−.618[a]	−.079	−.063		.608
19		−.319[a]	−.155	−.023		.874
21		−.464[a]	−.002	−.036		.783
22		.488[a]	−.042	.457[a]		.551
24		.501[a]	−.321[a]	.257[a]		.580
26		.663[a]	.167	.100		.522
27		.532[a]	−.007	.248		.655
28		−.366[a]	.044	−.015		.864
29		−.655[a]	−.061	.034		.565
32		.513[a]	.205	.348[a]		.574
N-block						
1	−.026		.353[a]		.418[a]	.700
3	.121		.219		.222	.888
4	−.203		−.605[a]		−.044	.591
5	−.174		.106		.488[a]	.720
9	−.132		−.575[a]		−.270	.579
10	.058		.211		.469[a]	.732
12		.203	.292		.582[a]	.534
13		.076	.399[a]		.316[a]	.736
15		.183	.425[a]		.267	.715
16		.156	.170		.691[a]	.469
18		−.125	−.525[a]		−.364[a]	.576
19		−.246	−.716[a]		−.009	.426
21		.049	−.684[a]		−.421[a]	.353
22		−.078	.606[a]		.071	.622
24		.251[a]	.450[a]		.455[a]	.527
26		.160	.565[a]		.091	.647
27		.265[a]	.635[a]		.210	.482
28		−.120	−.301[a]		−.137	.876
29		−.229	−.790[a]		−.011	.324
32		.062	.636[a]		.106	.581

[a]t-value greater than 2 in absolute terms.

Substantive Issues

On the substantive side, it may be beneficial to focus on the intersection of the present view of market orientation with (1) work employing a different scale (i.e, Narver and Slater 1990), (2) the Day and Wensley (1988) focus on customer- and competitor-oriented organizations, and (3) the externally focused view of competitive rationality (Dickson 1992). The Narver and Slater (1990) scale is aligned closely with the Day and Wensley (1988) conceptualization since the three component factors in their scale are competitor-oriented, customer-oriented, and interfunctional coordination. As noted in earlier work (Kohli and Jaworski 1990), interfunctional coordination takes on a specific meaning in a market orientation context, namely, coordination as it relates to the needs and wants of the marketplace. Second, though customers and competitors are two significant external stakeholders, the firm must also balance their demands with (1) the needs of other external stakeholders (e.g, regulatory), and (2) the forces that shape the underlying needs and expectations within a market (i.e., demographic, social, political, and technological change). Therefore, the principal difference seems to be in the breadth of stakeholders considered and our desire to focus on factors that shape customer needs and competitive behavior. On a comparative basis, the proposed scale is more closely aligned with Dickson's (1992) view of competitive rationality. As he cogently states (p. 75), "Because the marketplace

Table 4
SUMMARY RESULTS FOR PREDICTIVE VALIDITY ANALYSIS

	Market Orientation Model Factors				
	Intelligence Generation	*Dissemination/ Responsiveness*	*General Marketing Orientation Factor*	*M-Factor*	*N-Factor*
Global Measure of Market Orientation					
M's Response	.165	.354[a]	.077	.385[a]	.254[a]
N's Response	.070	.104	.445[a]	.212	.197
Top Management Emphasis					
M's Response	.112	.501[a]	.051	.771[a]	.097
N's Response	−.005	.238	−.218	−.268[a]	−.520[a]
Interfunctional Conflict					
M's Response	−.073	.558[a]	.172	.086	.157
N's Response	−.059	.198	.571[a]	−.168	.084
Market-based Rewards					
M's Response	.330[a]	.605[a]	−.208	.533[a]	.079
N's Response	−.153	.205	.217	−.057	.845[a]
Employees' Commitment					
M's Response	.174	.590[a]	.295[a]	.268[a]	.034
N's Response	.001	.063	.560[a]	.050	.320[a]
Subjective Performance					
M's Response	.426[a]	.419[a]	.133	.158	.171
N's Response	.070	.257[a]	.350[a]	.173	.063

[a]t-value greater than two in absolute terms.

consists of consumers, competitors, distribution facilitators such as retailers and wholesalers, information agents such as consultants and trade associates, and regulatory institutions, changes in the behavior of *all* of those parties must be scanned and analyzed by the market planner." This scanning emphasis on all forces is a central theme of the proposed market orientation perspective (see Kohli and Jaworski 1990).

Application Issues

On the application side, the proposed 20-item, MARKOR measure could initially be used to establish a baseline level of market orientation within an SBU. As intervention programs are implemented, the organization could quantitatively chart its progress. Equally important, charting the progress of *all* SBUs within an organization would enable the organization to develop target market orientation levels that are feasible for the organization. Comparative measurements of this sort will allow the organization to isolate problem areas related to one or more components of market orientation and address these deficiencies in future intervention efforts.

Turning now to scale properties, a key managerial property of the scale is its focus on *activities* that need to take place for the firm to be considered market oriented. It is modeled on general philosophical adherence to certain marketing principles. As such, interventions can be targeted to certain areas as reflected in the scale items. For example, if the firm scores poorly on the degree of intelligence generation, further analyses may reveal specific areas for improvement. This tight connection between the scale items and subsequent interventions reinforces the managerial significance of the scale.

As globalization issues assume the forefront of marketing practice, it is important to consider whether (1) the scale items "make sense" in other languages and (2) subsequent measure assessment would produce similar results. For the former question, it may be case that the items need to be modified to reflect differing hierarchical and departmental arrangements. For the latter issue, it will be interesting to see if the positive effects of market orientation on performance (see Narver and Slater 1990) generalize to non-U.S. economies. This will be particularly interesting in developing economies.

Finally, in the interest of pursuing the limits of the concept, the most exciting measurement extensions may lie in non-profit organizations, non-traditional organizational forms, or non-standard marketing applications (e.g., economic development). We expect that the component perspective and many of the scale items can be transferred directly to these less mainstream areas. For example, in the economic development area, many U.S. states are currently experiencing severe financial difficulties. One central issue is the attraction of new business (and maintenance of current business mix) through various marketing programs. Are the successful states more market-oriented in their economic development when compared to less successful states? How can the current measurement instrument be modified to address this issue?

In summary, our objective was to develop a measure of market orientation. Though additional work remains in both the methodological and substantive arenas, the results reported are encouraging. The findings combined with the suggestions for further work provide useful direction for future research.

Appendix A
MARKET ORIENTATION SCALE

Scale Items	Marketing		NonMarketing	
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*
Intelligence Generation				
1. In this business unit, we meet with customers at least once a year to find out what products or services they will need in the future.	4.41	.92	3.91	1.27
2. Individuals from our manufacturing department interact directly with customers to learn how to serve them better.	—	—	—	—
3. In this business unit, we do a lot of in-house market research.	3.39	1.22	3.19	1.06
4. We are slow to detect changes in our customers' product preferences. (R)	2.45	.96	2.40	1.03
5. We poll end users at least once a year to assess the quality of our products and services.	3.94	1.33	3.38	1.48
6. We often talk with or survey those who can influence our end users' purchases (e.g., retailers, distributors).*	—	—	—	—
7. We collect industry information by informal means (e.g., lunch with industry friends, talks with trade partners).	—	—	—	—
8. In our business unit, intelligence on our competitors is generated independently by several departments.	—	—	—	—
9. We are slow to detect fundamental shifts in our industry (e.g., competition, technology, regulation). (R)*	2.29	.95	2.22	.98
10. We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers.*	3.73	.96	3.90	.94
Intelligence Dissemination				
11. A lot of informal "hall talk" in this business unit concerns our competitors' tactics or strategies.*	—	—	—	—
12. We have interdepartmental meetings at least once a quarter to discuss market trends and developments.*	3.63	1.24	3.63	1.31
13. Marketing personnel in our business unit spend time discussing customers' future needs with *other* functional departments.	3.74	.91	3.57	1.09
14. Our business unit periodically circulates documents (e.g., reports, newsletters) that provide information on our customers.*	—	—	—	—
15. When something important happens to a major customer of market, the whole business unit knows about it within a short period.*	3.87	1.14	3.89	1.07
16. Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis.	3.49	1.22	3.17	1.13
17. There is minimal communication between marketing and manufacturing departments concerning market developments. (R)	—	—	—	—
18. When one department finds out something important about competitors, it is slow to alert other departments. (R)*	2.52	.92	2.45	.98
Responsiveness				
19. It takes us forever to decide how to respond to our competitor's price changes. (R)	2.07	1.03	2.39	1.16
20. Principles of market segmentation drive new product development efforts in this business unit.	—	—	—	—
21. For one reason or another we tend to ignore changes in our customer's product or service needs. (R)	2.22	1.05	2.23	.96
22. We periodically review our product development efforts to ensure that they are in line with what customers want.	3.71	.97	3.83	.93
23. Our business plans are driven more by technological advances than by market research. (R)	—	—	—	—
24. Several departments get together periodically to plan a response to changes taking place in our business environment.	3.41	.99	3.55	1.01
25. The product lines we sell depends more on internal politics than real market needs. (R)*	—	—	—	—
26. If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately.	3.84	.99	3.61	1.15
27. The activities of the different departments in this business unit are well coordinated.*	3.34	.98	3.27	.90
28. Customer complaints fall on deaf ears in this business unit. (R)*	1.76	.88	1.93	1.00
29. Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fashion. (R)*	2.46	1.16	2.39	1.17
30. We are quick to respond to significant changes in our competitors' pricing structures.*	—	—	—	—
31. When we find out that customers are unhappy with the quality of our service, we take corrective action immediately.*	—	—	—	—
32. When we find that customers would like us to modify a product of service, the departments involved make concerted efforts to do so.*	3.51	.99	3.61	.87

(R) denotes reverse coded item.
*Refers to addition of item during or after completion of the second pretest.

APPENDIX B
Validation Scale

Please indicate the degree to which your business unit resembles the two companies described below by distributing 100 points between them. Thus, if your *business unit* was primarily like Company A and only remotely like Company B, you might allocate 90 points to Company A and 10 points to Company B.

Company A relies heavily on its sales people to use a variety of selling techniques for getting customers to say "yes." The primary emphasis in the company is on selling. Customer satisfaction is considered important but the emphasis is on going out and pushing the company's products.

Company B does a lot of research to learn the concerns of its customers, and responds by developing new products and marketing programs. The emphasis is on understanding why customers act and feel the way they do, and exploiting this knowledge. Selling is considered important, but the emphasis is on making products that will almost "sell themselves."

Company A: _____points; Company B: _____points. (Total = 100 pts.)

REFERENCES

Anderson, James C. (1985), "A Measurement Model to Assess Measure-Specific Factors in Multiple-Informant Research," *Journal of Marketing Research*, 22 (February), 86–92.

Barrabba, Vincent and Gerald Zaltman (1991), *Hearing the Voice of the Market*. Boston: Harvard Business School Press.

Churchill, Gilbert A. Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research*, 16 (February), 64–73.

Day, George (1990), *Market-Driven Strategy*. New York: The Free Press.

——— and Robin Wensley 1988),"Assessing Advantage: A Framework for Diagnosing Competitive Superiority," *Journal of Marketing*, 52 (April), 1–20.

Dickson, Peter Reid (1992), "Toward a General Theory of Competitive Rationality," *Journal of Marketing*, 56 (January), 69–83.

Felton, Arthur P. (1959), "Making the Marketing Concept Work," *Harvard Business Review*, 37 (July-August), 55–65.

Gerbing, David W. and James C. Anderson (1988), "An Updated Paradigm for Scale Development Incorporating Undimensionality and Its Assessment," *Journal of Marketing Research*, 25 (May), 186–92.

Kanopa, L.J. and P.J. Calabro (1971), "Adoption of the Marketing Concept by Large Northeastern Ohio Manufacturers," *Akron Business and Economic Review*, 2 (Spring), 9–13.

Kohli, Ajay K. and Bernard J. Jaworski (1990), "Market Orientation: The Construct, Research Propositions, and Managerial Implications," *Journal of Marketing*, 54 (April), 1–18.

Kotler, Philip (1988), *Marketing Management*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kumar, Ajith and William R. Dillon (1990), "On the Use of Confirmatory Measurement Models in the Analysis of Multlple-Informant Reports," *Journal of Marketing Research*, 27 (February), 102–11.

Lavidge, R.J. (1966), "Marketing Concept Often Gets Only Lip Service," *Advertising Age*, 37 (October), 52.

Lawton, Leigh and A. Parasuraman (1980), "The Impact of the Marketing Concept on New Product Planning," *Journal of Marketing*, 44 (Winter), 19–25.

Marketing Science Institute (1988), "Measures of Market Orientation and the Value Created by Marketing Strategies," Conference held September 1988, Boston.

——— (1990), "Organizing to Become Market-Driven," Conference held September 1990, Boston.

McDonald, Roderick and Herbert W. Marsh (1990), "Choosing a Multivariate Model: Noncentrality and Goodness of Fit," *Psychological Bulletin*, 107 (2), 247–55.

McKitterick, J.B. (1957), "What is the Marketing Management Concept?" in *The Frontiers of Marketing Thought and Science*, Frank M. Bass, ed. Chicago: American Marketing Association, 71–92.

McNamara, Carlton P. (1972), "The Present Status of the Marketing Concept," *Journal of Marketing*, 36 (January), 50–57.

Narver, John and Stanley Slater (1990), "The Effect of Market Orientation on Business Profitability, *Journal of Marketing*, 54 (October), 20–35.

Shapiro, Benson P. (1988), "What the Hell is 'Market-Oriented'?", *Harvard Business Review*, 66 (November-December), 119–25.

Viebranz, Alfred C. (1967), "Marketing's Role in Company Growth," *MSU Business Topics*, 15 (Autumn), 45–49.

Webster, Frederick, E., Jr. (1988), "Rediscovering the Marketing Concept," *Business Horizons*, 31 (May-June), 29–39.