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A Multiple Layer Model of Market- Oriented Organizational Culture: Measurement Issues and Performance Outcomes

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ABSTRACT

Previous research addressing market orientation from a cultural perspective has typically used behavioral measures of this construct. Drawing upon literature in the fields of organizational theory and marketing, the authors develop a multi-layer model of market-oriented organizational culture. They draw an explicit distinction among values supporting market orientation, norms for market orientation, artifacts indicating high and low market orientation, respectively, and market-oriented behaviors. Based on qualitative research and a subsequent survey, scales for measuring the different layers of market-oriented culture are developed. Relationships between the different components of market-oriented culture are also analyzed. Findings indicate that artifacts play a crucial role in determining behavior within organizations. Results also indicate that a market-oriented culture influences financial performance indirectly through market performance and that this relationship is stronger in highly dynamic markets.

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During the last decade, there has been a growing stream of research exploring the construct of market orientation. Research in this area has addressed the construct's conceptual clarification (Day 1994; Jaworski and Kohli 1996; Kohli and Jaworski 1990; Narver and Slater 1990), measurement issues (Deshpande and Farley 1998a; Kohli, Jaworski and Kumar 1993; Narver and Slater 1990), and market orientation's antecedents and performance outcomes (Jaworski and Kohli 1993; Slater and Narver 1994). Basically, two perspectives on market orientation can be distinguished (Griffiths and Grover 1998a, p. 311). They include a behavioral and a cultural perspective. While the behavioral perspective describes market orientation in terms of specific behaviors related to e.g., generation of market intelligence, dissemination of market intelligence and responsiveness to it (Kohli and Jaworski 1990), the cultural perspective is related to more fundamental characteristics of the organization. As an example, Narver and Slater (1990, p. 21) define market orientation as

"... the organizational culture ... that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business".

Our research falls into the cultural stream of market orientation research. The importance of this perspective has been emphasized in a recent statement by Narver and Slater (1998, p. 235):

"If a market orientation were simply a set of activities completely disassociated from the underlying belief system of an organization, then whatever an organization's culture, a market orientation could easily be implanted by the organization at any time. But such is not what one observes."

It is worth emphasizing that work within the cultural perspective, while being based on a cultural definition of market orientation, has typically conceptualized and measured market orientation in terms of behaviors (Deshpande, Farley, and Webster 1993; Narver and Slater 1990; Slater and Narver 1994) and not considered more fundamental components of a market-oriented culture. As an example, Narver and Slater (1990) model market orientation as a construct consisting of three behavioral components (customer orientation, competitor orientation, inter-functional coordination). The basic assumption behind this approach is that these behaviors reflect an underlying organizational culture (Narver and Slater 1998, p. 235). Thus, the cultural perspective has had a stronger impact on the definition than on the conceptualization and the development of measures of market orientation.

This approach does not account for the distinction between different layers of culture which scholars in the field of organizational culture have emphasized as being crucial for understanding this complex phenomenon. As an example, Trice and Beyer (1993) distinguish the substance (e.g., values and norms) and concrete manifestations (e.g., practices) of organizational cultures. Schein (1992) distinguishes three different layers of organizational culture, including basic underlying assumptions, espoused values, and artifacts. These layers differ in terms of their visibility and interpretability. Previous research on market orientation from a cultural perspective has not made this distinction between different layers of culture. Thus, the cultural dimensions behind the observable behaviors have not been considered (Griffiths and Grover 1998a, 1998b). A distinction between different layers of market-oriented organizational culture is particularly relevant since it allows for the analysis of interrelations between these layers which can ultimately lead to a better understanding of the forces driving market-oriented behavior.

Against this background, the purpose of this article is to develop a broader cultural perspective of market orientation. More specifically, we have four objectives. First, we aim at developing a model of market-oriented organizational culture which makes an explicit distinction between different layers of organizational culture as has been suggested by scholars in this field. Second, our research will develop and validate a measurement instrument of market-oriented organizational culture based on this multi-layer conceptualization. Third, we want to analyze structural relationships among the different layers of market-oriented culture. The importance of this objective is emphasized by the work of Schein (1992) who observed strong relationships between the different layers of culture. Fourth, our study aims at analyzing performance outcomes of a market-oriented organizational culture. Overall, these objectives are in accordance with Deshpande and Farley's comments on future research questions concerning market orientation: "(I) What kind of organizational culture encourages and rewards Market Orientation behaviors? ... and (II) Are there specific Customer-Focused Beliefs that are articulated in the cultural documents ... and rituals ... of companies, and how do these in turn relate to specific Market Orientation behaviors ..." (1998b, p. 238).

Model Development

We now develop a model of market-oriented organization culture making explicit distinctions between different layers of culture. We also develop hypotheses on the relationships between the different components of culture. This is followed by hypotheses concerning performance outcomes of a market-oriented culture.

Conceptualization of Market-Oriented Organizational Culture

The concept of culture, which is rooted in anthropology (Kluckhohn 1951a), was transferred to the context of organizations in the early 1980s. During that time, there was an increasing interest in the phenomenon of organizational culture from both organizational science (Allaire and Firsirotu 1984; Schein 1984; Smircich 1983) and business practice (Deal and Kennedy 1982; Pascale and Athos 1981; Peters and Waterman 1982).

While different definitions of organizational culture have been suggested in the literature (Kilman, Saxton, and Serpa 1985; Schein 1992), one of the most widely accepted definitions in marketing has been provided by Deshpande and Webster (1989). These authors defined organizational culture as

"... the pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them norms for behavior in the organization" (p. 4).

This definition emphasizes three different layers of culture including values, norms, and behaviors in the organization. Schein (1984) introduced an additional component of organizational culture referred to as artifacts. These include stories, arrangements, rituals, and language (Trice and Beyer 1993). Schein emphasized that artifacts are the most visible layer of organizational culture. However, the meaning of artifacts is typically hard to decipher. Researchers in the field of organizational culture tend to agree that the different layers of the construct are strongly interrelated (Hofstede et al. 1990; Schein 1992).

In summary, organizational culture consists of four distinguishable but interrelated components. They include shared basic values, behavioral norms, different types of artifacts, and behaviors. Following Kluckhohn (1951b), *values* can be defined as "... a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of action" (Kluckhohn

1951b, p. 395). *Norms* differ from values by a higher degree of specificity and a higher relevance for actual behaviors (Katz and Kahn 1978, p. 43). The shared values within an organization form the basis for the development of these norms which legitimate specific behaviors. More specifically, we define norms as expectations about behavior or its results which are at least partially shared by a social group (O'Reilly 1989; Thibaut and Kelley 1959). *Artifacts* include stories, arrangements, rituals, and language, created by an organization, that have a strong symbolic meaning (Schein 1992; Trice and Beyer 1993). The symbolic meaning of artifacts is more important than any instrumental function (Hatch 1993). In contrast, *behaviors* refer to organizational behavioral patterns with an instrumental function. It is worth mentioning that other conceptualizations of organizational culture exist in the literature (see Smircich 1983 and Deshpande and Webster 1989 for overviews). Our work is rooted in the organizational symbolism perspective of organizational culture (Smircich 1983, p. 342).

Against this background we conceptualize *market-oriented organizational culture* as a construct including the four components of (1) organization wide shared basic values supporting market orientation, (2) organization wide norms for market orientation, (3) visible artifacts of market orientation, and (4) the market-oriented behaviors (see Figure 1). We will now consider each of the four components in more detail.

First, we argue that particular shared basic values are more likely to support a market orientation than others. The following two examples illustrate this argument (also see Figure 1). Organizations sharing the value of an open internal communication (Webster 1993, p. 113) are more likely to be market-oriented because market information is not kept by the marketing managers but is disseminated across the organization (Kohli and Jaworski 1990). As another example, the value of employee responsibility (Calori and Sarnin 1991, p. 57) supports decentralized decision making and, therefore, allows fast and market-oriented processes. Unlike the norms for market orientation to be discussed subsequently, we conceptualize these shared basic values as not being directly related to market orientation but rather as being supportive for market orientation.

Second, we argue that norms guide market-oriented behaviors within organizations. More specifically, we focus on market orientation as the concrete object of these norms. If, for example, the members of an organization share the value of openness of internal communication, a specific norm related to that value is the openness of market-related internal communication.

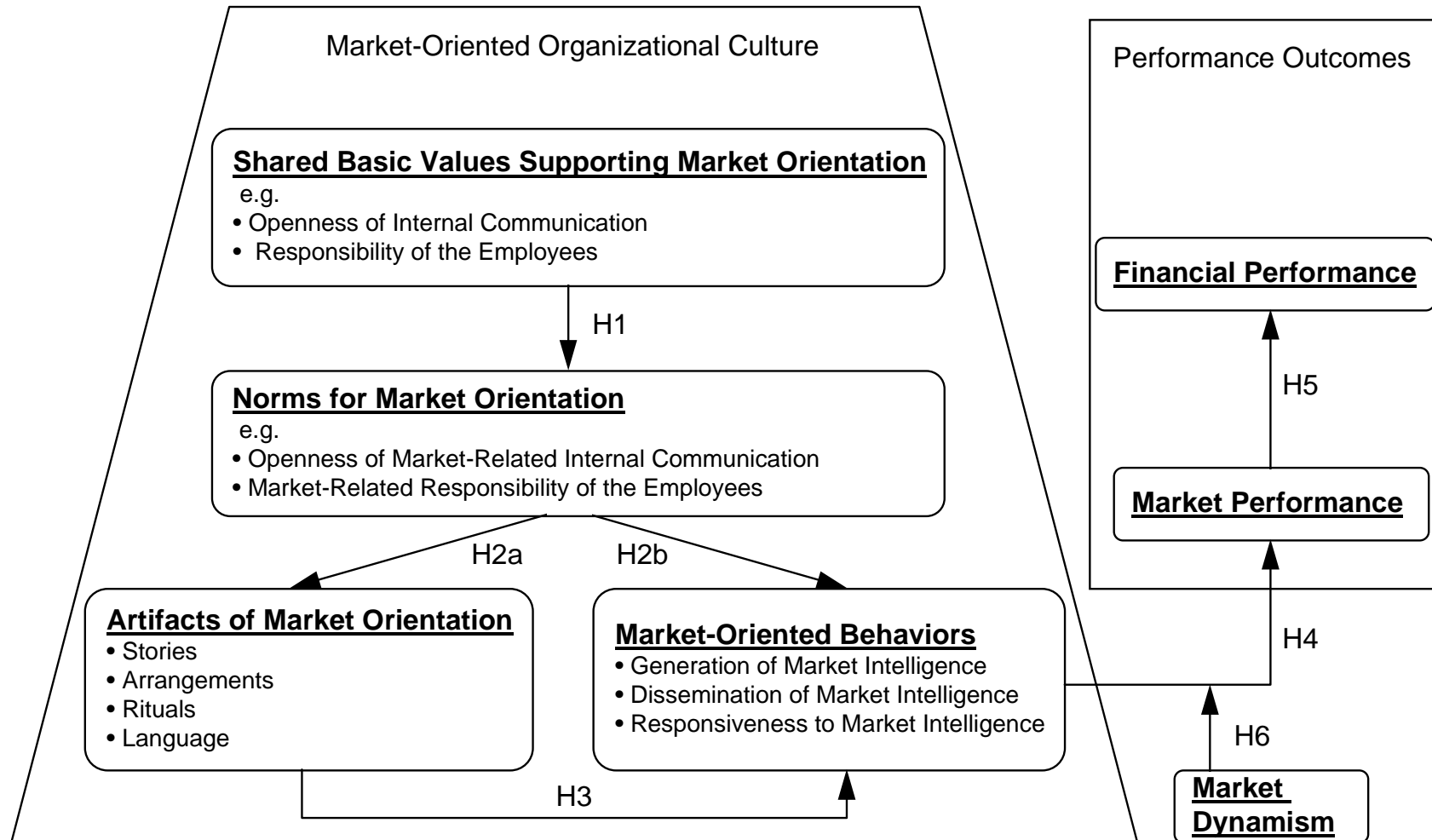
As another example, the norm of market-related responsibility of employees is a specification of the more general shared value of responsibility of the employees (see Figure 1). The difference between values and norms is that norms guide behaviors in a specific context whereas values represent general guidelines (O'Reilly 1989).

Third, we argue that there are artifacts which indicate a higher or lower level of market orientation. As we have seen in the literature review, four categories of artifacts can be distinguished: stories, arrangements, rituals, and language (Dandridge, Mitroff, and Joyce 1980; Trice and Beyer 1993). *Stories* in organizations frequently refer to exceptional behaviors of a senior manager (Martin et al. 1983). In our context, these stories might include employees performing "ideal" customer-oriented behaviors. An example of market-oriented *arrangements* might include an open and friendly styled customer entrance and welcome area (Trice and Beyer 1993; Zammuto and O'Connor 1992). The *rituals* of market orientation include events for customers (e.g., a meeting of product owners) or a regular award for customer-oriented employees (Trice and Beyer 1984). The last category of artifacts is the *language* within an organization that can also indicate the degree of market orientation. For example, a customer-focused (as opposed to an internally focused) discussion style during meetings indicates a higher degree of market orientation.

Finally, in terms of behaviors we use the conceptualization suggested by Kohli and Jaworski (1990) and Kohli, Jaworski, and Kumar (1993). This approach focuses on three components of market-oriented behaviors, including generation of market intelligence, internal dissemination of intelligence, and responsiveness to it.

In accordance with the model suggested by Schein (1984), we distinguish different layers of organizational culture. The first layer includes shared basic values supporting a market orientation. A second layer consists of norms for market orientation. Artifacts of market orientation and market-oriented behaviors represent the third layer of a market-oriented organizational culture (see Figure 1). The difference among the three layers is the degree of visibility: high in the case of market-oriented behaviors and artifacts, medium in the case of norms, and low in the case of shared basic values (Schein 1992).

FIGURE 1
The Framework



Hypotheses on Relationships between Components

In general terms, our model postulates a causal chain leading from values supporting market orientation through norms for market orientation to market-oriented behaviors. This structure is consistent with the theory of organizational behavior developed by Katz and Kahn (1978). These authors emphasize that behaviors of organizational members are driven by "... the norms prescribing and sanctioning these behaviors and the values in which the norms are embedded" (p. 43). Our hypothesized causal chain is also consistent with the logic of the extended Fishbein Model (Ajzen and Fishbein 1980) that is known from the consumer behavior literature. According to this model, basic values and beliefs have an impact on norms which then influence observable behaviors (Ajzen and Fishbein 1980).

Our first hypothesis relates to the link between shared basic values supporting market orientation and the presence of norms for market orientation. As Katz and Kahn (1978, p. 43) emphasize, "Values are the more generalized ideological justifications for ... norms, and express the aspirations that allegedly inform the required activities". With similar logic, O'Reilly (1989) argues that the formation of norms within an organization is easier if they are in agreement with the fundamental values. This leads us to the following hypothesis:

H1: The presence of shared basic values supporting market orientation has a positive impact on the presence of norms for market orientation.

The existence of norms for market orientation is assumed to be a powerful predictor of observable market-oriented behaviors in an organization. Norms can be characterized by their prescriptive nature for goal directed behaviors (Heide and John 1992, p. 35). The importance of norms as predictors of behavior is also emphasized in sociology (Jackson 1965) and in social system theory (Bates and Harvey 1975; Katz and Kahn 1978). Norms describe the behavior that members of an organization pressure one another to follow (Kilman, Saxton, and Serpa 1985, p. 5). For example, it is supposed that the existence of a norm promoting internal communication of market information leads to a significantly higher degree of such communication behaviors, compared to organizations where this norm is not present.

Norms for market orientation are supposed to generate artifacts of market orientation. While norms describe desired behaviors and presumably affect behavior, they are partly

transmitted in an organization through artifacts such as stories, language, rituals, or objects (Kilman, Saxton, and Serpa 1985, p. 5 f.). The existence of norms is fundamental for the development of certain artifacts. Therefore, we put forward the following hypothesis:

- H2: The presence of norms for market orientation has
- (a) a positive impact on the presence of artifacts of market orientation, and
 - (b) a positive impact on market-oriented behaviors.

Given the symbolic power of artifacts of market orientation, those can strengthen the degree of market-oriented behaviors in an organization. As Dandridge, Mitroff, and Joyce (1980, p. 79) stated, one important function of symbols in an organization is that members are inspired or motivated through their impact. If an artifact symbolizes market orientation, it can inspire members of an organization to behave in a market-oriented way. Thus, we hypothesize:

- H3: The presence of artifacts of market orientation has a positive impact on market-oriented behaviors.

Hypotheses on Performance Outcomes

A number of researchers discuss performance outcomes of organizational culture with a theoretical orientation (Barney 1986; Fiol 1991; O'Reilly 1989). Barney (1986) argued that only a valuable, rare, and imperfectly imitable culture of a firm can be a source of sustained competitive advantage. Kotter and Heskett (1992) found empirical support for the performance impact of organizational culture. Their results indicate that firms with a strong culture which emphasize customer orientation, employee orientation, stockholder orientation, and leadership have higher long-term performance. With respect to the specific domain of market orientation a number of empirical studies reveal positive and significant correlational links between market orientation and different performance measures (e.g., Jaworski and Kohli 1993; Narver and Slater 1990; Slater and Narver 1994).

In studying performance outcomes of market-oriented organizational cultures we draw a distinction between market performance and financial performance. Market performance is defined as the effectiveness of an organization's marketing activities and is measured by items pertaining to achieving customer satisfaction, providing value to customers, retaining customers,

and attaining the desired market share. Financial performance is operationalized as return on sales in our study. Basically, we argue that a market-oriented organizational culture has an indirect effect on financial performance through market performance.

A market-oriented organization provides a unifying focus of individual efforts in the delivery of value to the customers while also providing a comparative impetus with competitors' activities (Kohli and Jaworski 1990). Therefore, a market oriented organization is likely to achieve higher customer satisfaction, keep existing customers loyal, attract new customers and subsequently attain the desired growth and market share. Hence, similar to Slater and Narver (1990), we predict that market-oriented organizational culture will have a positive impact on market performance. More specifically, we state that among the four components of a market-oriented organizational culture only behaviors have a direct performance impact. Values, norms, and artifacts are not assumed to have a direct impact on market performance. Rather, as can be seen from Figure 1, we hypothesize that they indirectly affect performance through market-oriented behaviors. In summary, this leads us to the following hypothesis.

H4: The presence of market-oriented behaviors in an organization has a positive impact on market performance.

Furthermore it is assumed that performance in the market is a necessary antecedent of financial performance. The literature on performance implications of customer satisfaction and loyalty (Anderson and Sullivan 1993; Fornell 1992; Rust and Zahorik 1993) provides evidence that these components of market performance are positively related to financial performance. Furthermore, Reichheld (1996) argued that loyal customers can increase a firm's profitability through the absence of acquisition costs, decreasing operating costs, referrals, and higher price tolerance. Further, PIMS studies identify product/service quality and market share as the most important factors that influence the percentage of return on sales (Buzzell and Gale 1987, p. 45). Thus, we hypothesize:

H5: Market performance has a positive effect on financial performance.

An additional aspect in studying performance outcomes is the consideration of variables that moderate the relationship. In this study we concentrate on market dynamism that is viewed as the most relevant moderating variable (Slater¹⁰ and Narver 1994). In markets with a low level

of dynamism, a moderate degree of market orientation is sufficient to serve the stable preferences of the customers (Kohli and Jaworski 1990). The effect of market-oriented organizational culture on market performance is stronger in situations with great market dynamism. Therefore, we put forward the following hypothesis:

H6: The greater the extent of market dynamism, the greater is the positive impact of market-oriented behaviors on market performance.

Methodology

We applied qualitative research prior to conducting the quantitative scale development. More specifically, two stages of qualitative research were conducted, including a content analysis and field interviews.

Content Analysis

The purpose of the content analysis was to identify the most relevant shared basic values and categories of artifacts of a market-oriented organizational culture. Content analysis has frequently been used in management research (e.g., Bettman and Weitz 1983; Kotabe and Swan 1995) and in consumer research (e.g., Belk 1987; Kolbe and Burnett 1991). The usefulness of the technique for studying organizational culture has been emphasized frequently (Sackman 1992). Berelson (1952) defines content analysis as "... a research technique for the objective, systematic, and quantitative description of the manifest content of communication" (p. 55). While this definition emphasizes the method's quantitative nature, content analysis is frequently extended to interpretive and qualitative research (Wind, Rao, and Green 1991).

The content analysis conducted in this study consists of systematic analyses of 50 reports on cultural change processes which focus on increasing market orientation in companies from different industries published in two popular German business magazines between January 1995 and May 1997. A codesheet was developed that covered 16 potential value dimensions and four major artifact categories that had been derived from the literature review (e.g., Hofstede et al. 1990; O'Reilly, Chatman, and Caldwell 1991; Slater and Narver 1995; Webster 1993).

Interjudge reliability above 85 percent was achieved and, therefore, satisfactory (Kassarjian 1977; Kolbe and Burnett 1991).

From the potential value dimensions, the following twelve were mentioned most frequently in the context of market orientation (in more than 40% of all cases): success, innovativeness, flexibility, openness, internal communication, quality, competence, speed, interfunctional cooperation, teamwork, responsibility of the employees, and appreciation of the employees. It is worth emphasizing that these values do not exclusively support market orientation. Rather, some of them (such as success) may also be in support of other orientations.

Furthermore, specific stories and arrangements were the most frequently mentioned artifacts for market orientation (mentioned in more than 45% of all cases) followed by rituals and language (mentioned in more than 20% of all cases).

Field Interviews

Field interviews were conducted with ten managers (five general managers and five managers in different functional areas) from five different industries. The purpose of the interviews was fourfold: first, we wanted to validate the structure of the developed model (shown in Figure 1); second, we wanted to validate and supplement the findings of the content analysis; third, we wanted to get a richer understanding of possible artifacts of a market orientation; and fourth, we wanted to generate specific items for the subsequent scale development process. Each interview lasted approximately 60 to 90 minutes.

The result of the interviews was that managers found the suggested model of market-oriented organizational culture to be plausible and that this model covers most of the phenomena discussed during the interviews. Additionally, all twelve value dimensions were confirmed by the interviewees. However, since respondents found it difficult to distinguish between some of the value dimensions, the following eight dimensions were adopted: success, innovativeness and flexibility, openness of internal communication, quality and competence, speed, interfunctional cooperation, responsibility of the employees, and appreciation of the employees. Finally, as a result of the interviews, a list of items and observed artifacts were incorporated into the development of measures for market-oriented organizational culture.

Data Collection and Sample

A questionnaire was developed on the basis of the literature review, the content analysis, and the field interviews. A pre-test was conducted with nine managers and two academics with small resultant changes with respect to the wording of items and the instructions to answer the questionnaire. As proposed by Deshpande and Webster (1989, p. 11), we study organizational culture at the SBU rather than at the corporate level. The questionnaire was mailed to a sample of 1100 managers in 1100 SBUs from five different industries in Germany. The respondent's competence was assured before the mailing by conducting a telephone identification of key informants on the basis of addresses obtained from a commercial provider. The targeted key informants included general managers, marketing managers, and managers from other functional areas. Firms not responding after four weeks were mailed a follow-up letter and another questionnaire.

We obtained 173 responses which implies an overall response rate of 15.7 %. Eight respondents answered after the deadline. Five respondents reported a low level of confidence in their responses and were therefore dropped, leaving a final usable sample of 160 completed questionnaires. Given the length of our survey and the high level of managers targeted, we believe that the response rate is in line with those reported by other researchers studying complex organizational phenomena (Diamantopoulos and Schlegelmilch 1996; Harzing 1997).

Nonresponse bias was tested by comparing early and late respondents (Armstrong and Overton 1977). The data set was divided into thirds according to the number of days from initial mailing until receipt of the returned questionnaire. The basic rationale is that late respondents are more similar to non-respondents than early respondents. t-Tests for all the included variables indicated only two significant differences ($p < .05$) in the mean responses. This finding provides reasonable evidence that nonresponse bias was not a problem within these data.

Results

Scale Development and Validation

Scales for the study consisted of newly generated items and items that have been previously utilized in the literature. When a new scale was developed, guidance was obtained

from the literature review, the content analysis, and particularly from the field interviews. All measures were conducted with a 7-point rating scale ("strongly agree" and "strongly disagree" as anchors).

For measurement validation, we used conventional methods such as Coefficient Alpha, item-to-total correlations, and exploratory factor analysis (see Churchill 1979 for recommendations on measure validation), as well as the more advanced approach of confirmatory factor analysis (Bagozzi, Yi, and Phillips 1991; Gerbing and Anderson 1988). Regarding the threshold values of the different criteria for assessing adequate measurement properties we followed the suggestions of Anderson and Gerbing (1993), Bagozzi, Yi, and Phillips (1991), and Bagozzi and Yi (1988). First, we analyzed measurement issues at the level of individual factors. The corresponding results are shown in Table 1.

The measurement of values has been discussed controversially (Kale, Beatty, and Homer 1986; Rokeach 1979). Values can be measured by simple rating scales (Kale, Beatty, and Homer 1986), comparative instruments like ranking procedures (O'Reilly, Chatman, and Caldwell 1991), or by using multi-item scales (Hofstede 1980). Among these different approaches multi-item scales are viewed as superior in terms of validity (Hofstede et al. 1990). The measurement of values in our study is therefore conducted by multiple items on the basis of rating scales (see the Appendix for a complete list of items). In addition to this approach a ranking instrument that covers the eight dimensions was used to validate our measurement approach. The parallel-test reliability was assessed by computing a ranking based on the mean values of the multi-item scales and the rank correlation between the two alternative measurement approaches. The value of $r = .62$ is considered satisfactory.

Overall the results indicate acceptable reliabilities for all eight dimensions of shared basic values (see Table 1). The average variances extracted and composite reliabilities are clearly above the recommended minimum of .5 and .6, respectively (Bagozzi and Yi 1988). For the dimensions which have two-item measures, a confirmatory factor analysis cannot be conducted but the Coefficient Alpha values indicate acceptable measurement properties.

We adopted the same eight-dimensional structure for norms that had been developed for values. The difference between norms and values is that norms focus on market orientation whereas basic values are more generally supporting a market orientation. Measurement results of the eight dimensions of norms for market orientation are satisfactory (see Table 1).

The measurement of artifacts of market orientation is not studied in the previous literature and, therefore, exploratory in nature. In accordance with Trice and Beyer (1993) we distinguish stories, arrangements, rituals and language as potential dimensions of artifacts for market orientation. Furthermore the measurement incorporates positive and negative versions of artifacts; for example stories of the senior manager as a good or a bad example (Martin et al. 1983). The results of the literature review and the interviews form the bases for new scales for artifacts for market orientation. Different stories, arrangements, rituals and elements of language that can symbolize market orientation were used for the measurement (see the Appendix). As a first result of the measurement, we realized that the presence of positive and negative versions of artifacts were fairly independent from each other. Therefore, we distinguished positive and negative constructs whenever positive and negative items had been used. Consequently, we identified the following six dimensions of artifacts for market orientation: (1) stories about heroes of market orientation, (2) stories about problems of market orientation, (3) arrangements of market orientation, (4) rituals of market orientation, (5) market-oriented language, and (6) non-market-oriented language. Although some of the criteria are below the threshold values, results indicate acceptable reliabilities on an overall basis given the exploratory nature of the measurement of artifacts (Nunnally 1978, p. 245).

For the measurement of market-oriented behaviors we used the 20-item scale of Kohli, Jaworski and Kumar (1993) that covers the three behavioral dimensions of generation of market intelligence, dissemination of the intelligence and responsiveness to it. The original scale items were translated into German and back translated by a second person to assure translation equivalence. Measurement results indicate acceptable reliabilities for the three constructs. However, the application of the criterion suggested by Fornell and Larcker (1981) revealed a lack of discriminant validity between the three dimensions. Therefore, we used a one-dimensional conceptualization of market orientation which is consistent with recommendations by Deshpande and Farley (1998a). More specifically, items of all three originally proposed dimensions were included in a 12-item measure of market-oriented behaviors with desirable psychometric properties (see Table 1).

TABLE 1
Measurement Information for Individual Factors

Construct	Number of Items	Mean/SD	Range ^a	Reliability (α / ρ) ^b	Average Variance Extracted ^c
Shared basic values supporting market orientation					
Success	2	6.0 / .9	2.5 - 7	.75 / -	-
Innovativeness and flexibility	3	5.5 / 1.2	1.7 - 7	.81 / .85	.66
Openness of internal communication	4	5.7 / 1.2	1 - 7	.90 / .93	.77
Quality and competence	3	5.9 / .9	2 - 7	.83 / .88	.71
Speed	2	5.1 / 1.1	1.5 - 7	.77 / -	-
Interfunctional cooperation	3	5.6 / 1.2	1.3 - 7	.86 / .89	.72
Responsibility of the employees	2	5.5 / 1.2	1 - 7	.84 / -	-
Appreciation of the employees	3	5.4 / 1.1	1 - 7	.82 / .85	.66
Norms for market orientation					
Market-related success orientation	2	4.8 / 1.6	1 - 7	.87 / -	-
Market-related innovativeness and flexibility	4	5.5 / 1.1	1.5 - 7	.76 / .82	.53
Openness of market-related internal communication	4	5.3 / 1.1	1.5 - 7	.76 / .84	.59
Market-related quality orientation	3	5.3 / 1.1	1 - 7	.69 / .78	.54
Market-related speed	4	5.6 / 1.0	2 - 7	.75 / .84	.56
Market-related interfunctional cooperation	3	3.9 / 1.5	1 - 7	.78 / .83	.63
Market-related responsibility of the employees	2	6.0 / 1.0	2.5 - 7	.75 / -	-
Market-related appreciation of the employees	3	5.4 / 1.2	1.7 - 7	.76 / .83	.63
Artifacts for market orientation					
Stories about heroes of market orientation	1	4.1 / 1.8	1 - 7	-	-
Stories about problems with market orientation	3	3.0 / 1.2	1 - 6.3	.78 / .82	.61
Arrangements of market orientation	4	4.8 / 1.4	1.5 - 7	.78 / .83	.55
Rituals of market orientation	4	3.5 / 1.4	1 - 7	.67 / .74	.42
Market-oriented language	3	4.7 / 1.3	1 - 7	.74 / .79	.57
Non-market-oriented language	4	3.2 / 1.1	1 - 5.8	.63 / .70	.38
Market-oriented behaviors	12	5.0 / 1.2	1.8 - 7	.91 / .92	.50

^a The possible range for all measures was 1 through 7.

^b Reports coefficient alpha (if more than one item) and composite reliability (if more than two items).

^c Average variance extracted reported in case of more than two items.

After the operationalization of individual factors, an overall measurement model of market-oriented organizational culture with ¹⁶~~23~~ factors and 78 indicators was analyzed. Fit statistics indicate a good fit ($\chi^2_{(2673)} = 2456.55$, $p = 1.00$; GFI = .95; AGFI = .94, CFI = 1.00; RMSEA = .00).

Discriminant validity was assessed by comparing the average variances extracted with the squared correlations for all pairs of factors (Anderson and Gerbing 1993; Fornell and Larcker 1981). For the eight dimensions of shared basic values, the results provide good evidence of

discriminant validity. The results for the eight dimensions of norms for market orientation partly reveal problems concerning discriminant validity. For example the squared correlation between market-related quality orientation and market-related speed is higher than both average variances extracted. This result is very interesting because the structure of norms for market orientation was adopted from the structure of shared basic values for which discriminant validity is given. This phenomenon can be explained by the more focused perspective of norms that leads to a stronger overlap between the dimensions in comparison to values. Alternative measurement models for norms were considered (e.g., 1-dimensional and 3-dimensional) and compared to the original 8-dimensional model. However, the results of the 8-dimensional model were superior. Therefore and for conceptual reasons, we conclude that the model of market-oriented organizational culture should capture eight partially overlapping dimensions of norms for market orientation. On the level of the artifacts the results provide strong evidence for discriminant validity. Overall, discriminant validity between the different components of a market-oriented organizational culture is satisfactory. In particular, pairs of corresponding values and norms, although being very close conceptually, exhibited discriminant validity.

Of course, modeling 78 items with 23 underlying factors is not a very parsimonious structure. Considering the complexity of this structure, we will now analyze alternative measurement models with lower levels of complexity that are more adequate for hypothesis testing. More specifically, we consider three alternative models with a reduced number of factors (Bagozzi and Edwards 1998, see Table 2). The first alternative is a plausible 4-factor model with one dimension for each of the components of a market-oriented organizational culture, i.e., shared basic values, norms, artifacts and behaviors. The second alternative is a modified version of the first alternative which is obtained by splitting the artifact dimension into the two dimensions of artifacts indicating existence of market orientation and artifacts indicating absence of market orientation. The third alternative is a 1-factor model capturing all 78 indicators.

An accepted criterion for the selection of one of several alternative models which penalizes over-parameterization is the CAIC measure (Bozdogan 1987). The 5-factor model exhibits the lowest CAIC and the results of this model also indicate an acceptable fit (see Table 2). Also, composite reliabilities of the five factors range from .75 to .95. Moreover, individual item reliabilities (i.e., squared standardized factor loadings) exhibit an average value of .41.

Each of the factor loadings in this model was highly significant with t-values ranging from 10.2 to 46.1. Thus, a 5-factor model will be used for subsequent analysis.

TABLE 2
Comparison of Alternative Measurement Models

No.	Alternative Measurement Models	χ^2	df	RMSEA	GFI	AGFI	CFI	CAIC
0	23-Factor-Model (8 value dimensions, 8 norm dimensions, 1 market-oriented behaviors dimension, 6 artifact dimensions)	2456.55	2673	0.000	0.95	0.94	1.00	4889.39
1	4-Factor-Model (1 value dimension, 1 norm dimension, 1 market-oriented behaviors dimension, 1 artifact dimension)	3829.16	2919	0.047	0.92	0.92	0.98	4795.14
2	5-Factor-Model (1 value dimension, 1 norm dimension, 1 market-oriented behaviors dimension, 2 artifact dimensions)	3570.27	2915	0.040	0.93	0.93	0.98	4560.10
3	1-Factor-Model	4678.27	2925	0.065	0.91	0.90	0.96	5608.47

Market performance was measured with six items partly adapted from Irving (1995). The reliability coefficients ($\alpha = .89$; $\rho = .90$) and average variance extracted (.62) provide good evidence for the reliability of the measure. Financial performance is measured by a single item related to the average return on sales (ROS) of the SBU during the last three years. The moderator variable of market dynamism which is adapted from Maltz and Kohli (1996) is measured by three items. The scale has acceptable reliability ($\alpha = .76$; $\rho = .81$) and the average variance extracted is .60.

Hypothesis Testing

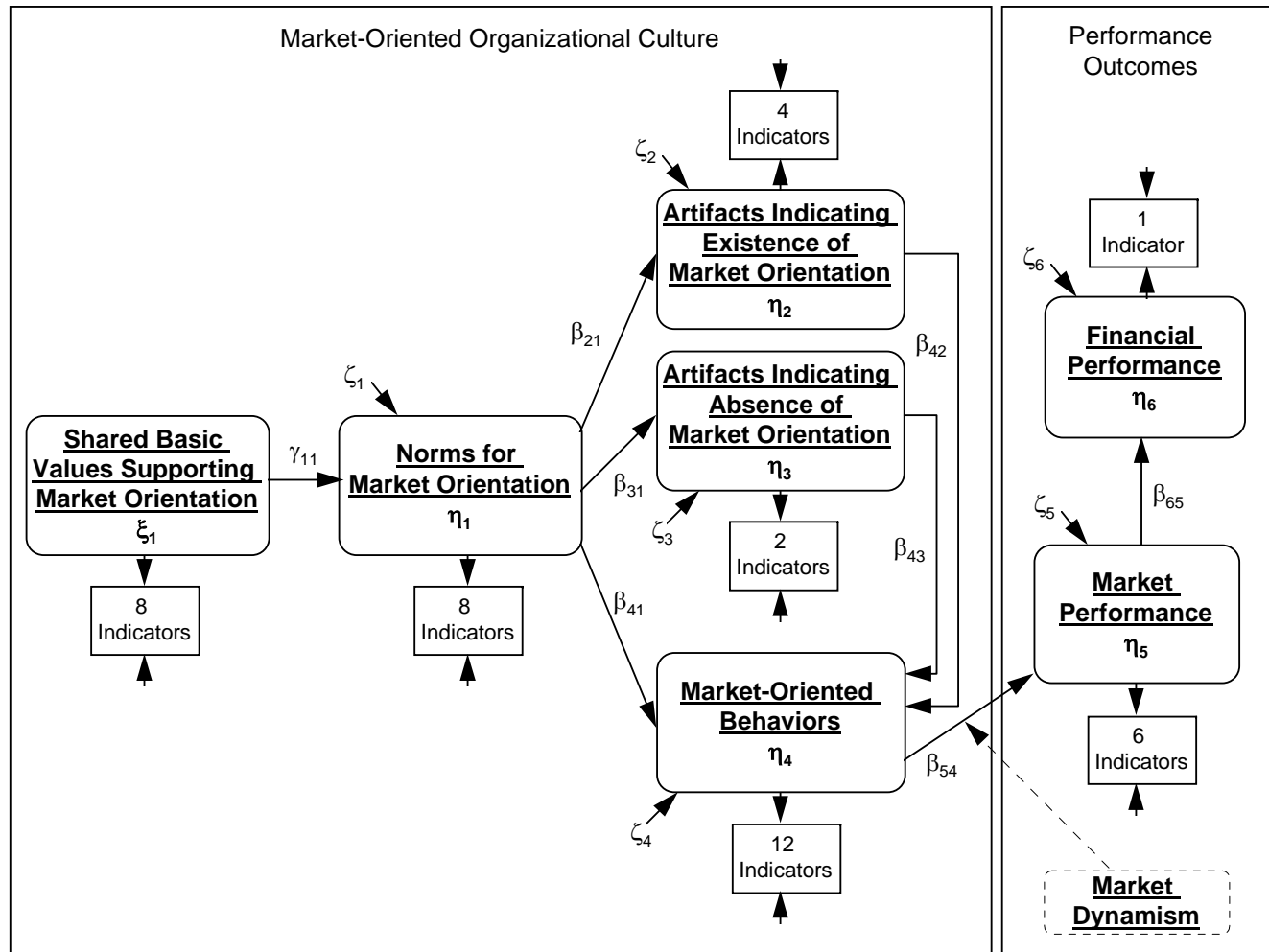
18

After establishing the structure of the measurement model, we analyzed the overall causal model shown in Figure 2 using LISREL 8 (Jöreskog and Sörbom 1993). In order to obtain a more favorable relationship between our sample size and the number of parameters to be estimated we conducted an additional simplification of our five-factor model. More specifically, for each of the eight value dimensions we averaged the corresponding indicators leading to a single composite indicator per value dimension. This leads to a value factor with eight

indicators. The same procedure was carried out for the factor related to norms and for the two artifact factors. Thus, with the exception of market-oriented behaviors composite indicators were used for the measurement of market-oriented organizational culture. As a result, the different components of market-oriented organizational culture are measured by a total of 34 indicators in the model shown in Figure 2.

It is worth emphasizing that measurement statistics for this simplified model are still favorable. More specifically, the following composite reliabilities were computed for the five factors: .71 for market-oriented values, .72 for market-oriented norms, .51 for artifacts indicating a high level of market orientation, .58 for artifacts indicating a low level of market orientation, and .59 for market-oriented behaviors. Individual item reliabilities for indicators of market-oriented organizational culture exhibit an average value of .48. With respect to the overall fit, the chi square statistic and the RMSEA indicate some discrepancies between the data and the proposed model ($\chi^2_{(772)} = 2330.19$, $p = .00$; RMSEA = .12). A possible explanation for this observation is that the use of composite indicators typically worsens model fit. However, other global fit statistics suggest an adequate fit of the model (GFI = .97; AGFI = .96; CFI = .97). On an overall basis, the global model fit is acceptable.

FIGURE 2
The Causal Model



We will now discuss the results concerning the hypotheses (see Table 3). As predicted by H1, shared basic values supporting market orientation have a significant positive effect on norms for market orientation ($\gamma_{11} = .83$; $p < .01$). Because of the split of artifacts into the two dimensions of artifacts indicating existence of market orientation and artifacts indicating absence of market orientation, H2a is now twofold. Norms for market orientation have a significant positive effect on artifacts indicating existence of market orientation ($\beta_{21} = .88$; $p < .01$) and a significant negative effect on artifacts indicating absence of market orientation ($\beta_{31} = -.53$; $p < .01$). Thus, H2a is supported by our findings.

TABLE 3
Estimated Effects Within the Causal Model

Hypotheses	Parameters	Estimate	t-Value
H 1	γ_{11}	.83	36.29
H 2a	β_{21}	.86	25.43
H 2a	β_{31}	-.53	-19.55
H 2b	β_{41}	.05	.28
H 3	β_{42}	.76	3.79
H 3	β_{43}	-.16	-3.38
H 4	β_{54}	.59	28.90
H 5	β_{65}	.57	24.08

On the other hand, we find no support for H2b predicting a positive effect of norms of market orientation on market-oriented behaviors ($\beta_{41} = .05$; $p > .10$). Thus, we find no evidence for the existence of a direct behavioral effect of norms for market orientation. However, we will later see that there is a strong indirect effect.

Similar to H2a, H3 has to be split. The artifacts indicating existence of market orientation have a significant positive effect ($\beta_{42} = .76$; $p < .01$) and the artifacts indicating absence of market orientation a significant negative effect ($\beta_{43} = -.16$; $p < .01$) on market-oriented behaviors. Thus, H3 is supported.

Market-oriented behaviors have a significant positive effect on market performance ($\beta_{54} = .59$; $p < .01$) (H4). To complete the causal chain, market performance has a significant positive effect on financial performance ($\beta_{65} = .57$; $p < .01$), (H5). These empirical results strongly support the two hypotheses concerning performance outcomes.

Additionally, the hypothesized moderating effect of market dynamism within the market orientation-market performance relationship is tested (H6). A LISREL multi-group analysis was conducted to examine this hypothesis (Jöreskog and Sörbom 1993). Based on a median-split, the data are divided in two groups characterized by a high (group 1) and a low (group 2) degree of market dynamism. The multi-group analysis of the model with separate estimation of the performance-effects results in two differing estimates: β_{54} (group 1) = .65 and β_{54} (group 2) = .57, both significant on the 1%-level. Furthermore, the common estimation of the mentioned effect results in an overall chi-square statistic that is significantly higher compared to the separate estimation ($\chi^2_{diff(1)} = 33.85$, $p < .01$). Thus, we can conclude that H6 is supported. A similar effect has been hypothesized but not empirically supported by Slater and Narver (1994).

In summary, we found strong support for our hypotheses. It is also worth emphasizing that the explanatory power of the model is good. The squared multiple correlations of the endogenous variables vary from .28 to .80 ($r^2\eta_1 = .68$; $r^2\eta_2 = .74$; $r^2\eta_3 = .28$; $r^2\eta_4 = .80$; $r^2\eta_5 = .35$; $r^2\eta_6 = .33$). In particular, the market-oriented behaviors exhibit the highest squared multiple correlation ($r^2\eta_4 = .80$). It is interesting to observe that norms for market orientation do not have a direct impact on market-oriented behaviors. Rather, there is a strong indirect effect through positive and negative artifacts. It is also worth mentioning that, in addition to testing our hypotheses, we analyzed whether there is a significant effect of values supporting market orientation on market-oriented behaviors. Including such a direct effect into the model did not significantly improve the model's fit. This finding shows that values also affect market-oriented behavior only in an indirect way. Thus, our findings emphasize the important role of artifacts as a determinant of market-oriented behavior.

Discussion

The key objective of the study was to develop and empirically test a multi-layer model of market-oriented organizational culture. Our research has implications for research and

managerial practice alike. We will first discuss these two areas and then discuss future avenues for research.

Research-related Implications

Previous empirical research within the culturally oriented perspective on market orientation has not made explicit distinctions between different layers of culture. Based on theoretical work in the area of organizational culture we have suggested a new model of market-oriented culture including basic values, norms, artifacts, and behaviors. It is worth emphasizing that we find discriminant validity between the different layers of market-oriented organizational culture. Thus, while being interrelated, these different layers are both conceptually and empirically distinct. On a general level, while admittedly increasing the complexity of construct conceptualization, our research provides a more detailed understanding of the phenomenon of market-oriented organizational culture.

In a comment on future research issues in the field of market orientation Deshpande and Farley (1998b, p. 238) raised the question "[a]re there specific Customer-Focused Beliefs ... and how do these in turn relate to specific Market Orientation behaviors?". Our research provides specific answers to this question. We have identified eight value dimensions that support market orientation.

Additionally, our analysis provides insights concerning the relationships between the different components of culture. The most interesting result is the critical importance of artifacts for guiding market-oriented behaviors. More specifically, both values and norms have only indirect impacts on market-oriented behaviors. This means that an organization that has strong norms for market orientation will not exhibit market-oriented behaviors unless the corresponding artifacts are present in the organization. Thus, this research provides fundamentally new insights into the nature of market-oriented organizational culture.

Artifacts have not been considered in the marketing literature so far. Clearly, our results reveal that they should receive more attention in the future. This issue will be further elaborated upon when we discuss future research avenues.

An admittedly minor contribution of our study relates to performance outcomes of market orientation. While the main effects of market-oriented behaviors on performance measures have been shown numerous times before (e.g., Jaworski and Kohli 1993; Narver and Slater 1990;

Slater and Narver 1994) we observe an interesting moderator effect on the relationship between market-oriented behaviors and market performance. This finding, that a high level of market dynamism makes a market-oriented culture even more important, provides a little more depth to marketing academics' understanding of market orientation's performance outcomes.

Finally, our research also contributes to knowledge development in the marketing discipline by developing a comprehensive scale for market-oriented organizational culture that integrates values, norms, artifacts, and behaviors. This scale might be used in future empirical research in this area.

Managerial Implications

Besides being theoretically insightful, our study also has a number of important managerial implications. First, our study provides managers with a detailed understanding of some of the processes that drive behavior in organizations. It is very important to realize that within our model market-oriented behaviors are only influenced through positive or negative artifacts of market orientation. A lot of managerial activity to guide behavior in organizations is based on the establishment of norms. Our research tells managers that the establishment of norms will not produce the desired behavioral outcomes unless the norms are supported by appropriate artifacts. Also, written value statements can only be effective if supported by adequate artifacts.

Second, managers need to recognize the importance of consciously managing artifacts within their organizations. As an example, establishing stories on a top management "hero" of market orientation may be a potential lever. Our results also encourage managers to be conscious about eliminating dysfunctional artifacts. Our results are in line with Phillips and Brown (1993) who argued that "[i]n modern corporations, success in management directly depends on the ability of managers to manipulate symbols ..." (p. 1572). In short, our research encourages managers to devote some energy and time on "symbolic management" (Peters 1978; Pfeffer 1981; Schein 1992).

Third, our findings concerning performance implications of market-oriented organizational culture are managerially relevant. Our findings show that a market-oriented culture appears especially important in, among other things, a turbulent market environment. Also, our findings show that a market-oriented culture influences financial performance

indirectly through market performance. Thus, customer satisfaction ratings and customer loyalty figures are appropriate outcome measures for companies trying to enhance their market orientation.

Fourth, our scale can be used by managers for measuring the degree of market orientation of their firm's culture. As this instrument makes a distinction between different layers of culture, it is adequate for identifying possible inconsistencies between the different layers of culture.

Finally, our research provides managers guidance on the wording of a company philosophy. We have identified a set of values that foster the development of corresponding norms and thus influence market-oriented behaviors. Managers should take these values into consideration when formulating a company philosophy or writing a mission statement.

Limitations and Future Research

One limitation of our study is the national character of our sample. Like other studies of market orientation, our study needs to be extended to an international context (e.g., Deshpande, Farley and Webster 1997; Selnes, Jaworski, and Kohli 1996). Further, these studies need to consider international aspects of measurement equivalence. This is particularly necessary for the measurement of values (Hofstede 1980).

Another limitation of our research is the use of single informants in each SBU. Thus, we can't assess informant bias which may be present in the context of abstract concepts such as organizational culture. Future research should investigate the concept of market-oriented organizational culture using data from multiple informants as it has been done by Kohli, Jaworski, and Kumar (1993) within the behavioral research stream on market orientation.

The developed scale for market-oriented organizational culture involves a large number of items. Thus, from a managerial perspective, it might be useful to develop more parsimonious measures of market-oriented organizational culture still making a distinction between different layers.

The exploratory nature of our measurement of artifacts for market orientation exhibits lower reliabilities compared to other measures used within this study. Therefore, further research should be conducted to develop better measures of artifacts. If we consider the strong effects of artifacts on market-oriented behavior²⁵, this direction for future research is even more essential.

APPENDIX

Measures and Items ^a

Shared basic values supporting market orientation

Success (new scale)

1. In our SBU we place great value on performance-oriented employees.
2. In our SBU we strive for success very strongly.

Innovativeness and flexibility (new scale)

1. In our SBU we particularly emphasize innovativeness and creativity.
2. In our SBU we rate the flexibility of the employees very highly.
3. In our SBU we are very open towards innovations (e.g., related to products or processes).

Openness of internal communication (new scale)

1. In our SBU open communication is valued very highly.
2. In our SBU we aspire to a high degree of interfunctional information exchange.
3. In our SBU we put very much value on information flow.
4. In our SBU we aspire to proactive communication.

Quality and competence (new scale)

1. In our SBU error-free work results are valued very highly.
2. In our SBU we put very much value on high quality work results.
3. In our SBU we aspire to a maximum of qualification and competence in the subject.

Speed (new scale)

1. In our SBU we aspire to speed in all work processes.
2. In our SBU every employee aspires to speed in the work processes.

Interfunctional cooperation (new scale)

1. In our SBU we place great value on interfunctional teamwork.
2. In our SBU, cooperation between different functions (e.g., marketing and R&D) is valued very highly.
3. In our SBU we aspire to cooperative work.

Responsibility of the employees (new scale)

1. In our SBU we value very highly that every employee thinks and acts like an entrepreneur.
2. In our SBU the responsibility of the single employee is stressed very strongly.

Appreciation of the employees (new scale)

1. In our SBU the appreciation of the single employee is stressed very strongly.
2. In our SBU we place great value on a feeling of belonging among the employees.
3. In our SBU we aspire to high employee satisfaction.

Norms for market orientation

Market-related success orientation (new scale)

1. In our SBU market performance (e.g., market share, customer satisfaction) is measured regularly.
2. In our SBU market performance (e.g., market share, customer satisfaction) is controlled regularly.

Market-related innovativeness and flexibility (new scale)

1. In our SBU we expect that generally accepted standardized programs are examined regularly to become more effective in serving our markets.

2. In our SBU we expect that unbureaucratic solutions are found quickly in difficult situations (e.g., in cases of massive customer complaints).
3. In our SBU we expect that new value-adding products and services are detected and developed permanently.
4. In our SBU we appreciate unconventional ideas (especially if they come from the side of the customer).

Openness of market-related internal communication (new scale)

1. In our SBU we expect that interfunctional meetings (e.g., discussions about market trends) are organized regularly.
2. In our SBU we expect that market-related problems are mentioned directly and openly.
3. In our SBU we expect the dissemination and storage of market intelligence.
4. In our SBU the dissemination and storage of market intelligence are controlled.

Market-related quality orientation (new scale)

1. In our SBU we expect that quality is assessed by customers or at least from the customer's perspective.
2. In our SBU task-related and social competencies of employees with customer contact are absolutely expected.
3. In our SBU the competence of employees with customer contact (e.g., sales, customer service, reception) is controlled regularly.

Market-related speed (new scale)

1. In our SBU we expect that customer requests are answered at once.
2. In our SBU we expect that customer-related processes are increased in speed continuously.
3. In our SBU the speed of customer-related processes is controlled regularly.
4. In our SBU a quick response on market changes is expected.

Market-related interfunctional cooperation (new scale)

1. In our SBU every employee expects that customers are integrated in the planning of a new product or service program (e.g., by conducting interdisciplinary teamwork or focus groups).
2. In our SBU the availability of market information in different functional areas (e.g., marketing and R&D) is controlled.
3. In our SBU the degree of coordination of decisions about marketing-activities in different areas is controlled.

Market-related responsibility of the employees (new scale)

1. In our SBU we expect that every employee feels responsible for the detection and solution of potential and actual customer problems.
2. In our SBU every employee is expected to be highly responsible for the customers.

Market-related appreciation of the employees (new scale)

1. In our SBU the individuality of each employee is viewed as a competitive advantage.
2. In our SBU we accept that high-quality performance can be reached very individual and in many different ways.
3. In our SBU a high involvement of the employees for the fulfillment of customer needs is expected.

Artifacts for market orientation

Stories about heroes of market orientation (new scale)

Please indicate the frequency of stories among the employees of your business unit concerning the following topic:

Exemplary customer-oriented behavior of an executive (e.g., founder, chief executive, manager)

Stories about problems with market orientation (new scale)

Please indicate the frequency of stories among the employees of your business unit concerning the following topics: 28

1. Communication problems between different areas which negatively affect market orientation
2. Problems of the SBU because of a low level of market orientation
3. Unwritten laws (hidden rules) in the SBU which prevent market orientation

Arrangements of market orientation (new scale)

1. In our SBU, buildings and the exterior complex are styled very clearly so that visitors/customers find their ways easily.
2. In our SBU the customer reception is well organized and clearly styled.
3. In our SBU, meeting rooms and offices are built in a style that supports communication.
4. In our SBU attractive meeting and discussion areas (e.g., cafeterias) exist where information can be exchanged informally.

Rituals of market orientation (new scale)

1. In our SBU employees which are customer-oriented in an exemplary way are awarded regularly.
2. In our SBU we regularly organize events for important customers.
3. In our SBU we receive customers very individually (e.g., by specifically trained employees or by a written welcome on a blackboard at the reception).
4. In our SBU we regularly organize special sales events for customers for the delivery of products or services.

Market-oriented language (new scale)

Please indicate the frequency of the articulation of the following or similar sentences during meetings in your SBU:

1. "If we now try to look at this problem from the customer's point of view ..."
2. "Which is the value added to the customer by doing that?"
3. "Can we offer the customer the thing that he is expecting from us?"

Non-market-oriented language (new scale)

Please indicate the frequency of the articulation of the following or similar sentences during meetings in your SBU:

1. "This idea sounds very interesting but it is not realistic for our SBU."
2. "I know very well what the customers desire."
3. "I am not interested in what competitor XY plans! We have to ..."
4. "Why should we change something in this context? I think it still works fine."

Market-oriented behaviors (adapted from Kohli, Jaworski, and Kumar 1993)

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.
2. We are slow to detect changes in our customers' product preferences. (r)
3. We poll end users at least once a year to assess the quality of our products and services.
4. We are slow to detect fundamental shifts in our industry (e.g., competition, technology, regulation). (r)
5. We have interdepartmental meetings at least once a quarter to discuss market trends and developments.
6. Marketing personnel in our business unit spend time discussing customers' future needs with *other* functional departments.
7. When something important happens to a major customer or market, the whole business unit knows about it within a short period.

8. Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis.
9. We periodically review our product development efforts to ensure that they are in line with what customers want.
10. Several departments get together periodically to plan a response to changes taking place in our business environment.
11. The activities of the different departments in this business unit are well coordinated.
12. When we find that customers would like us to modify a product or service, the departments involved make concerted efforts to do so.

Outcomes

Market performance (adapted from Irving 1995)

In the last three years, relative to your competitors, how has your business unit performed with respect to ...

1. Achieving customer satisfaction.
2. Providing value for customers.
3. Keeping current customers.
4. Attracting new customers.
5. Attaining desired growth.
6. Securing desired market share.

Financial performance (ROS)

Over the last three years, what was the average annual return on sales of your strategic business unit?

Moderator variable

Market dynamism (adapted from Maltz and Kohli 1996)

Please indicate the frequency of changes in the following aspects of the business environment of your business unit:

1. Changes in products offered by your competitors.
2. Changes in sales strategies by your competitors.
3. Changes in sales promotion/advertising strategies of your competitors.

^a The possible range for all measures was 1 through 7, except financial performance (1 - 5).

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