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What Drives Managerial Use of Marketing and Financial Metrics and Does Metric Use Affect Performance of Marketing-Mix Activities?

To increase marketing's accountability, *Journal of Marketing*, Marketing Science Institute, and the Institute for the Study of Business Markets have advocated development of marketing metrics and linking marketing-mix activities with financial metrics. Although the marketing field has made progress, researchers have paid less attention to what drives managerial use of marketing and financial metrics and whether metric use is associated with marketing-mix performance. The authors propose a conceptual model that links firm strategy, metric orientation, type of marketing-mix activity, and managerial, firm, and environmental characteristics to marketing and financial metric use, which in turn are linked to performance of marketing-mix activities. An analysis of 1287 marketing-mix activities reported by 439 U.S. managers reveals that firm strategy, metric orientation, type of marketing-mix activity, and firm and environmental characteristics are more useful than managerial characteristics in explaining use of marketing and financial metrics and that use of metrics is positively associated with marketing-mix performance. The results help identify conditions under which managers use fewer metrics and how metric use can be increased to improve marketing-mix performance.

Keywords: metrics, marketing–finance interface, marketing mix, managerial decision making

> "We [marketers] don't speak the same language as senior management, so there is little trust and even less belief in our capabilities. If we don't find a better way to communicate the value of marketing and communication, none of the other factors will matter."
>
> —An anonymous manager quoted in Institute for the Study of Business Markets (2010) "B-to-B Marketing Trends Report"

To increase marketing's accountability, *Journal of Marketing* (*JM*; 2004, 2009), Marketing Science Institute (MSI; 1998, 2000, 2002, 2004, 2006, 2008) and the Institute for the Study of Business Markets (ISBM; 2010) have continually advocated developing marketing metrics and linking marketing-mix activities with financial metrics. Practitioners have recognized the demands for marketing accountability as well: a 2007 Deloitte study indicates that 83% of marketing managers are increasing their emphasis on marketing metrics, and Lenskold Group/MarketSphere (2009) report that 79% of managers indicate greater need for employing financial metrics to assess marketing-mix performance.

Marketing scholars have responded in three ways. First, researchers have proposed a menu of marketing metrics, defined as metrics that are based on a customer or marketing mind-set such as awareness, satisfaction, and market share, for different marketing-mix activities such as advertising, price promotion, pricing, product management, and so on (Ambler 2003; Farris et al. 2010; Lehmann and Reibstein 2006). Second, researchers have linked marketing-mix efforts to financial metrics, defined as metrics that are monetarily based, based on financial ratios, or readily converted to monetary outcomes such as net profit, return on investment (ROI), and target volume (for a review, see Srinivasan and Hanssens 2009). Third, researchers have found that metric-based information influences firm profits (Abramson, Currim, and Sarin 2005) and shareholder value (Schulze, Skiera, and Wiesel 2012) and that the effect of comprehensiveness of metric-based marketing performance measurement systems on firm performance is mediated by market alignment and knowledge (Homburg, Artz, and Wieseke 2012). Although several advances have been made in the development of marketing metrics, linking marketing efforts to financial metrics, and linking metric use to firm performance, to the best of our knowledge, there is little if

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any understanding of what drives the use of marketing or financial metrics in a managerial marketing-mix decision setting and whether metric use is associated with the performance of the marketing-mix decision (in contrast to firm performance).

Thus, the primary objective and key theoretical contribution of the current study is to propose and test a conceptual model of how factors such as firm strategy including market and strategic orientation and organizational involvement in the marketing-mix decision, metric-based compensation and training, the type of marketing-mix decision considered, and other characteristics of managers, firms, and the environment drive use of marketing and financial metrics in managerial marketing decisions. The main result is that it is not managerial characteristics but rather the setting in which the manager operates that drives metric use. The secondary objective is to link use of marketing and financial metrics to perceived performance of the marketing-mix activity. We find that increase in metric use is associated with improved marketing-mix performance. The key managerial contribution of the current study is that the two results noted previously enable us to identify several conditions, described in the "Results" and "Discussion" sections, under which managers are less likely to use metrics and five methods to increase managers' metrics use in such situations to increase marketing-mix performance. Such theoretical and managerial contributions are important steps toward the "accountability" of marketing (Lehmann 2004) and marketing "regaining a seat at the table" (Deshpandé and Zaltman 1982; Reibstein, Day, and Wind 2009).

Conceptual Model

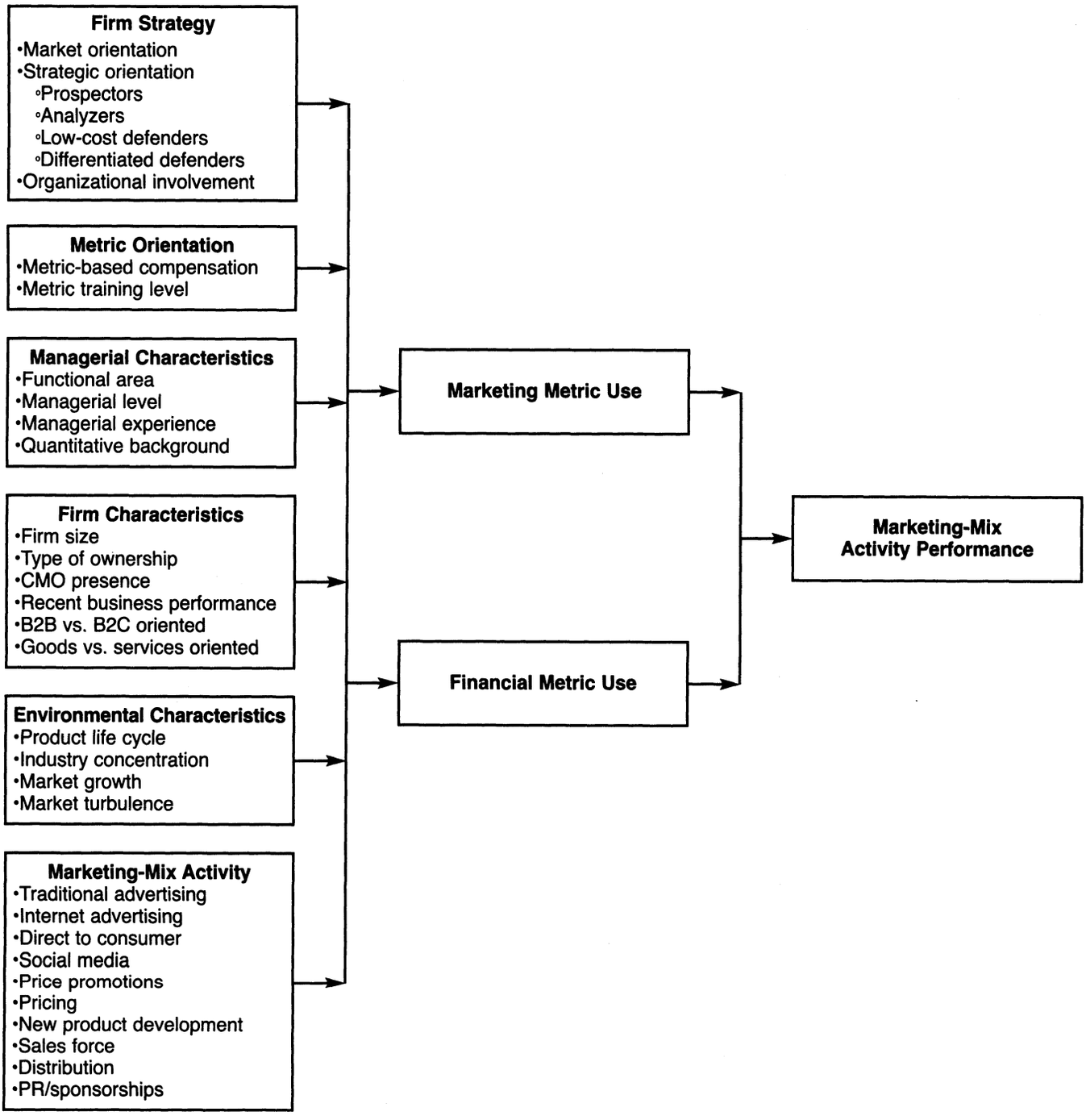
In this section, we provide the rationale for selection and definition of each construct, which is based on a review of literature streams in marketing, finance, strategy, accounting, and organizational behavior and discussions with 22 marketing executives who varied on their level in the organization, function, and industry. Because this is the first study on drivers of metric use and we identify a large number of potential drivers, we focus on establishing their main effects. Our main two dependent variables of interest are the number of marketing and financial metrics that managers employ when making a marketing-mix decision. In line with previous work (Ambler 2003; Farris et al. 2010; Lehmann and Reibstein 2006) and conversations with marketing executives, we consider (1) general marketing and financial metrics, defined as metrics suited to many marketing-mix decisions, and (2) specific marketing and financial metrics, defined as metrics largely suited to each of ten marketing-mix decisions considered (Table 1).

Our first driver of metric use is firm strategy (see Figure 1). Both the organizational behavior and the strategy literature theorize that firm strategy drives homophily, which results in managers employing similar decision-making processes throughout the firm (Finkelstein, Hambrick, and Cannella 2009). Homophily theory potentially explains why a manager in a particular firm setting employs a larger or smaller number of metrics when making marketing-mix decisions. Firm strategy is based on three strategic variables studied extensively in the marketing literature: (1) market orientation, defined as the extent to which the firm measures, monitors, and communicates customer needs and experiences throughout the firm and whether the firm's strategy is based on this information (Kohli and Jaworski 1990); (2) strategic orientation, defined as the strategy a firm employs to compete in an industry or market (Olson, Slater and Hult 2005); and (3) organizational involvement in managerial decision making, defined as the extent to which a firm's marketing-mix decision is based on the involvement of a wide range of managers across functions (Noble and Mokwa 1999).

Second, we consider metric orientation, which comprises (1) metric-based compensation, defined as the importance of metrics in a manager's compensation package, and (2) metric-based training, defined as a manager's level of training on the use of metrics as indicated by professional and educational experiences. Agency theory (Fama 1980; Jensen and Meckling 1976) suggests that compensation incentives align managers' goals with those of principals; consequently, principals who aim to promote metric use can design metric-based incentives. Whereas metric-based compensation could incentivize metric use, metric-based training could facilitate its use. Third, prior marketing and strategy research has suggested that managerial characteristics can influence a manager's priorities, abilities, and, thus, their use of information (Curren, Folkes, and Steckel 1992; Lehmann 2004; Lehmann and Reibstein 2006; Perkins and Rao 1990; Rust et al. 2004). Consequently, we consider the manager's (1) functional area (defined as marketing vs. nonmarketing), (2) level (vice president [VP] and higher vs. lower than VP), (3) length of experience (based on overall career, at the firm, and in the current position), and (4) quantitative background (based on education and work experience).

Fourth, the resource-based view of the firm (March 1991; Wernerfelt 1984) suggests that firm characteristics account for differences in resources, motivations, and abilities, which can affect information use. Thus, we consider (1) firm size (number of full-time employees), (2) ownership (private vs. public), (3) chief marketing officer (CMO) presence, (4) recent business performance (relative to the firm's expectations and competitors' performance), and the extent to which sales come from (5) business-to-business (B2B) versus business-to-consumer (B2C) markets and (6) goods versus service markets. Fifth, contingency theory (Donaldson 2001; Homburg, Workman, and Krohmer 1999) suggests that firms aim to match managerial decisions and information use with environmental conditions because the environment in which the manager operates can affect their priorities, abilities, and need for information. Consequently, we consider (1) stage of the product life cycle (introductory/growth vs. maturity/decline), (2) industry concentration (percentage of sales controlled by four largest businesses), (3) market growth (annual growth/decline of the company and industry), and (4) market turbulence (rate at which products/services become obsolete). Verhoef and Leeflang (2009), Homburg, Workman, and Krohmer (1999), Deshpandé and Zaltman (1982), and Kuester, Homburg, and Robertson (1999) consider such firm and environmental variables to understand the use of information, managerial

FIGURE 1
Conceptual Model



decision making, and marketing's influence in the firm. Sixth, Lehmann and Reibstein (2006) discuss a value chain–based theory for metrics and identify the marketing-mix decision as a driver of the use of marketing and financial metrics. Consequently, we consider ten marketing-mix decisions as our final construct driving metric use: (1) traditional advertising, (2) Internet advertising, (3) direct to consumer, (4) social media, (5) price promotions, (6) pricing, (7) new product development, (8) sales force, (9) distribution, and (10) public relations (PR)/sponsorships.

Finally, following the literature on the relationship between use of information and decision making (Abramson, Currim, and Sarin 2005; Menon et al. 1999), we expect use of metrics, defined as employment of metrics as decision aids (e.g., for considering, benchmarking, monitoring) when making a marketing-mix decision, to be associated with perceived performance of the marketing-mix activity, defined as a firm's stated marketing (customer satisfaction, loyalty, and market share), financial (sales, profitability, and ROI), and overall outcomes relative to a firm's stated objec-

TABLE 1
Marketing and Financial Metrics

Marketing-Mix Activity	Marketing Metrics	Financial Metrics
General metrics	•Market share (units or dollars) •Awareness (product or brand) •Satisfaction (product or brand) •Likeability (product or brand) •Preference (product or brand) •Willingness to recommend (product or brand) •Loyalty (product or brand) •Perceived product quality •Consideration set •Total customers •Share of customer wallet •Share of voice	•Net profit •Return on investment •Return on sales •Return on marketing investment •Net present value •Economic value added •Marketing expenditures (percentage specifically on brand building activities) •Stock prices/stock returns •Tobin's q •Target volume (units or sales) •Customer segment profitability •Customer lifetime value
Traditional advertising	•Impressions •Reach •Recall	•Cost per customer acquired/cost per thousand impressions •Lead generation •Internal rate of return
Internet advertising	•Impressions •Hits/visits/page views •Click-through rate	•Cost per click •Conversion rate •Internal rate of return
Direct to consumer	•Reach •Number of responses by campaign •New customer retention rate	•Cost per customer acquired •Conversion rate •Lead generation
Social media	•Hits/visits/page views •Number of followers/tags •Volume of coverage by media	•Lead generation •Cost per exposure •Total costs
Price promotions	•Impressions •Reach •Trial/repeat volume (or ratio)	•Promotional sales/incremental lift •Redemption rates (e.g., coupons) •Internal rate of return
Pricing	•Price premium •Reservation price •Relative price	•Unit margin/margin percentage •Price elasticity •Optimal price
New product development	•Belief in new product concept •Attitude toward product/brand •Expected annual growth rate	•Expected margin (%) •Level of cannibalization/cannibalization rate •Internal rate of return
Sales force	•Reach •Number of responses by campaign •New customer retention rate	•Sales potential forecast •Sales force productivity •Sales funnel/sales pipeline
Distribution	•Out-of-stock percentage/availability •Strength of channel relationships •Product category volume	•Total inventory/total distributors •Channel margins •Sales per store/stockkeeping units
PR/sponsorship	•Volume of coverage by media •Reach •Recall	•Lead generation •Cost per exposure •Total costs

tives and to similar prior activities (Jaworski and Kohli 1993; Moorman and Rust 1999; Verhoef and Leeflang 2009).

Hypotheses

Antecedents of Marketing and Financial Metric Use

Firm strategy. Organizational behavior and strategy literatures suggest that managers in an organization follow similar decision-making processes largely shaped by overall firm strategy (Finkelstein et al. 2009). To shed light on whether and how firm strategy drives use of metrics, we consider three widely studied strategic concepts in the marketing literature: (1) market orientation (Deshpandé and Farley 1998; Kirca, Jayachandran, and Bearden 2005; Kohli and Jaworski 1990), (2) strategic orientation (Olson, Slater, and Hult 2005; Walker and Ruekert 1987), and (3) organizational involvement in managerial decision making (Noble and Mokwa 1999; Palmatier, Dant, and Grewal 2007).

Market orientation. Ambler, Kokkinaki, and Puntoni (2004) find that top managers in market-oriented firms emphasize marketing over financial metrics in their marketing-mix decisions because top management in market-oriented firms maintains more interest in assessing customer satisfaction and needs, the relationship between satisfaction and brand assets, and how marketing efforts influence satisfac-

tion than in how marketing efforts influence profits. Due to the customer-based focus of top management in market and customer oriented firms, we expect managers involved in generation and dissemination of marketwide intelligence in such firms to face greater pressure to employ marketing metrics but less pressure to employ financial metrics in their marketing-mix decisions.

H_1: The greater the market orientation of the firm, the more the use of marketing metrics and the less the use of financial metrics in marketing decisions.

Strategic orientation. Olson, Slater, and Hult (2005) combine Miles and Snow's (1978) and Porter's (1980) frameworks and contend that companies are classified into one of four strategic orientations: prospectors, analyzers, low-cost defenders, and differentiated defenders (for formal definitions, see Appendix A). We expect analyzers and both types of defenders to employ more marketing and financial metrics than prospectors for three reasons. First, prospectors are driven toward innovative new product-markets (Miles and Snow 1978), which comprise greater uncertainty about customers (e.g., who the customers will be, how will they react to the new product) and competition (e.g., where competition will come from, what types of competitive products will be introduced). Thus, it may be premature for managers in prospector firms to measure general marketing metrics such as satisfaction, preferences, loyalty, consideration sets, and share of market and predict general financial metrics such as net profit, ROI, return on sales (ROS), return on marketing investment (ROMI), and economic value added (EVA). In contrast, because analyzers and defenders enter a market subsequent to prospectors, there is less product-market uncertainty about customers and competition; thus, marketing and financial metrics may be less difficult to measure. Second, because analyzers and defenders do not have pioneering or first-mover advantages (Kalyanaram, Robinson, and Urban 1995), it becomes more important for such companies to ensure market success, which requires more reliance on metrics.

Third, prospectors usually have innovation-based company cultures, which reward discontinuous innovation (Finkelstein, Hambrick, and Cannella 2009), facilitate complex and disorderly innovation processes through significant latitude in decision making (Olson, Slater, and Hult 2005), and substitute rigid rules and policies with discretion and informal coordination mechanisms (Walker and Ruekert 1987). Thus, we expect managers in these firms to encounter less top management pressure for justification of marketing expenditures through formal marketing and financial metric use. In contrast, analyzers and both types of defenders maintain a cost–benefit perspective (Vorhies and Morgan 2003) that aims to improve on prospectors' offerings (Matsuno and Mentzer 2000); thus, decision making is more likely to require justification based on marketing and financial metrics with less latitude and flexibility to depart from norms. For efficiency purposes, we present all six expectations (three strategic orientations × two types of metrics) in Table 2 but summarize them here in one hypothesis:

H_2: Managers in analyzer, low-cost defender, and differentiated defender organizations employ more marketing and financial metrics than managers in prospector organizations.

Organizational involvement. The level of organizational involvement in marketing-mix decisions can be important because selection of metrics can depend on whether constituencies other than marketing are included in the decision (Palmatier, Dant, and Grewal 2007). In a longitudinal study, Palmatier, Dant, and Grewal (2007) consider a variety of theoretical perspectives to show that commitment–trust is the immediate precursor to and the key driver of exchange performance between constituencies involved in a decision. They define "commitment" as an enduring desire to maintain a valued relationship and "trust" as confidence in the reliability and integrity of exchange partners. To build trust and commitment between organizational groups (e.g., finance, accounting), marketers must consider goals and metrics relevant to each organizational group. Consequently, we expect that the greater the organizational involvement in the marketing-mix decision, the more frequent is the use of financial metrics. In addition, the more the use of financial metrics is being considered, we expect that for purposes of organizational balance between marketing and nonmarketing groups, firms will use more marketing metrics.

H_3: The greater the organizational involvement in marketing decisions, the more the use of marketing and financial metrics in managerial marketing decisions.

Metric orientation. Agency theory (Fama 1980) suggests that incentive pay aligns the interests of principals and agents to which principals delegate their duties (Jensen and Meckling 1976). Thus, if principals are interested in managers employing metrics in their managerial decisions, they can develop metric-based compensation incentives. Rajgopal and Shevlin (2002) and Coles, Daniel, and Naveen (2006) find that compensation-based incentives affect managerial decision making and firm value. Thus, we expect managers with greater metric-based compensation to employ more metrics in their marketing-mix decisions. Whereas metric-based compensation incentivizes the use of metrics, metric-based training facilitates the use of metrics. Clark, Abela, and Ambler (2006) show that training and use of dashboard systems populated with metrics helps employees employ metrics in their marketing-mix decisions. Thus:

H_4: The greater the extent of metric-based compensation and the greater the level of metric-based training, the more the use of marketing and financial metrics in marketing decisions.

Managerial characteristics. Following the decision maker's perspective (Curren, Folkes, and Steckel 1992) and our interviews with managers, we posit that a manager's characteristics can influence his or her priorities, abilities, information use, and thus metric use (Lehmann 2004; Lehmann and Reibstein 2006; Perkins and Rao 1990; Rust et al. 2004). First, we include the manager's functional area (marketing vs. nonmarketing). Much has been written about marketing's lack of financial accountability, which has undermined its credibility in the eyes of top management (Anderson 2006; Day and Fahey 1988; Rust et al. 2004;

TABLE 2
Summary of Hypotheses

	Effect on Marketing Metric Use		Effect on Financial Metric Use	
Variable	**Hypothesis**	**Supported**	**Hypothesis**	**Supported**
Firm Strategy[a]				
Market orientation	+	Yes	–	No
Analyzers	+	Yes	+	Yes
Low-cost defenders	+	Yes	+	Yes
Differentiated defenders	+	No	+	Yes
Organizational involvement	+	Yes	+	Yes
Metric Orientation				
Metric-based compensation	+	Yes	+	Yes
Metric training level	+	Yes	+	Yes
Managerial Characteristics				
Functional area (marketing)	+	No	–	No
Managerial level	–	No	+	No
Managerial experience	+	No	+	No
Quantitative background	+	No	+	Yes
Firm Characteristics				
Firm size	+	No	+	No
Type of ownership (public)	?	—	+	Yes
CMO presence	+	No	+	Yes
Recent business performance (better)	+	Yes	+	Yes
B2C	+	Yes	+	Yes
Services	–	Yes	–	Yes
Environmental Characteristics				
Product life cycle stage (maturity/declining)	–	No	+	No
Industry concentration	+	Yes	+	Yes
Market growth	–	No	–	No
Market turbulence	+	Yes	+	Yes
Marketing-Mix Activity[b]				
Traditional advertising	+	No	+	Yes
Internet advertising	+	Yes	+	Yes
Direct to consumer	+	No	+	Yes
Social media	+	No	?	—
Price promotions	?	—	+	Yes
Pricing	?	—	+	Yes
New product development	+	Yes	+	Yes
Sales force	?	—	+	Yes
Distribution	?	—	+	No

	Effect on Marketing Activity Performance	
Variable	**Hypothesis**	**Supported**
Marketing metric use	+	Yes
Financial metric use	+	Yes

[a]Analyzers, low-cost defenders, and differentiated defenders are compared with prospectors.
[b]All marketing-mix activities are compared with PR/sponsorships decisions.
Notes: + = a positive hypothesized relationship, – = a negative hypothesized relationship, ? = unclear relationship, and — = not tested.

Srinivasan and Hanssens 2009). Therefore, in comparison with nonmarketing managers, we expect marketing managers to use more marketing but fewer financial metrics when making marketing decisions. Second, we include the level of the manager (VP and above vs. below VP). Managers at different levels have different goals that affect metric use: higher-level executives (VP, senior VP, CMO, chief financial officer, chief executive officer) are responsible for conveying performance of the firm through financial reporting, which affects firm valuation, whereas lower-level managers (marketing, product, and brand managers) focus on metrics more relevant to their own decisions (Lehmann and Reibstein 2006; Menon et al. 1999). Therefore, we expect higher-level managers to use more financial metrics and fewer marketing metrics than managers at lower levels.

Third, we include managerial experience. The literature comparing experts with novices suggests that experts have more highly developed cognitive structures, information in

memory, and rules for using information, all of which facilitate more effective problem structuring and successful problem solving (Harmon and King 1985; Sujan, Sujan, and Bettman 1988). Perkins and Rao (1990) find that more experienced managers view more kinds of information as useful and make more financially conservative decisions. Consequently, we expect more experienced managers to employ more marketing and financial metrics in their marketing-mix decisions. Fourth, we include the quantitative background of the manager with the expectation that managers who are more quantitative will use more formal metrics in their marketing decisions. For efficiency purposes, we summarize our eight expectations in the following two hypotheses.

H_5: Managers with marketing (vs. nonmarketing) titles, lower-level titles (lower than VP), more managerial experience, and more quantitative background employ more marketing metrics in their marketing decisions.

H_6: Managers with nonmarketing (vs. marketing) titles, higher-level titles (VP and above), more managerial experience, and more quantitative background employ more financial metrics in their marketing decisions.

Firm characteristics. The resource-based view of the firm suggests that firm characteristics influence resources, which in turn influence a manager's priorities, abilities, decisions, and information use (March 1991; Wernerfelt 1984). First, we include firm size. In larger firms, managers are able to access greater financial and marketing managerial resources and experience from previous marketing efforts (March 1991). Thus, we expect managers in larger firms to assemble and employ more marketing and financial metrics in their marketing-mix decisions. Second, we include type of ownership (private vs. public). Publicly traded firms rely on external financing from public equity markets, which demand financial statements and earnings reports (Burgstahler, Hail, and Leuz 2006). Hence, we expect managers in publicly traded firms to be incentivized to use more financial metrics in their marketing decisions. Third, we include CMO presence. Nath and Mahajan (2008) indicate that firms employ a CMO to reduce uncertainty top management faces in marketing areas. We expect the presence of a CMO to reduce such uncertainty through greater reliance on marketing metrics. In addition, as a member of top management, the CMO will convey the importance of financial metrics to other top managers, and as a result, we expect the CMO to encourage and facilitate use of financial metrics for marketing decisions.

Fourth, we include recent business performance. When performance falls below expectation levels, firms are expected to hold employees more accountable through financial metrics. However, our expectation follows Bromiley (1991), who argues that when recent business performance falls below expected aspiration levels, firms are more likely to undertake new risky investments involving greater uncertainty and difficulty in measurement of metrics. In contrast, when recent business performance is better than expected, managers are less pressured to undertake new risky investments and more likely to use metrics, either because they have more time to develop metrics or because measurement of metrics is simplified for continuing investments. Fifth, we consider whether the firm has a B2C or B2B orientation. Managers in B2C-oriented firms are more likely to focus their marketing efforts on "one-to-many," while those in B2B oriented firms are more likely to focus their marketing efforts on "one-to-one." We expect that it is more difficult to observe results achieved from many customers than it is to observe results from a single customer, so it will be more important and useful to develop and use metrics in B2C-oriented firms. Sixth, we consider the firm's goods versus service orientation. Coviello et al. (2002) find that managers in goods-oriented firms are more transaction focused than managers in service-oriented firms, which suggests that managers in goods-oriented firms may be more likely to rely on metrics than managers in service-oriented firms.

H_7: Managers in larger firms, firms with (vs. without) CMO presence, firms with better recent performance, and B2C and goods-oriented firms employ more marketing metrics in marketing decisions.

H_8: Managers in larger firms, public (vs. private) firms, firms with (vs. without) CMO presence, firms with better recent performance, and B2C and goods-oriented firms employ more financial metrics in marketing decisions.

Environmental characteristics. Contingency theory suggests that managers make decisions to match environmental and industry conditions because environmental conditions affect the manager's priorities, abilities, and need for information (Donaldson 2001; Homburg, Workman, and Krohmer 1999), which could influence metric use. Thus, we first consider stage of the product life cycle. In the introductory and growth stages of the product life cycle, managers are typically most concerned about customer acquisition and growth (Kotler and Keller 2009; Porter 1980) and thus are more likely to employ marketing metrics. In contrast, in maturity and decline stages, the market is not growing, and consequently, we expect managers to focus on financial-based efficiencies such as profit, ROI, and other financial metrics (Gupta, Lehmann, and Stuart 2004; Morgan, Anderson, and Mittal 2005). Second, we consider the level of concentration in the industry. Managers whose firms are in more concentrated industries face fewer major competitors, so metric computation is less complex than when there are a larger number of major competitors. Consequently, we expect managers of firms in more concentrated industries to employ more marketing and financial metrics.

Third, we consider market growth often associated with economic growth. Fiscal effectiveness is of less concern when markets are growing (Kohli and Jaworski 1990); thus, there may be less pressure for metric use. Conversely, when market's are shrinking, companies require greater financial accountability (Deleersnyder et al. 2009), so there may be more pressure for metric use. Fourth, we consider the level of market turbulence. In stable markets, consumers exhibit relatively invariant choices (Morgan, Anderson, and Mittal 2005), and as a result managers have less need for metrics. Conversely, in turbulent markets, there is more uncertainty as consumers exhibit more variant choices (Kohli and Jaworski 1990), so managers have greater need for metrics

to assess the effectiveness of their marketing-mix decisions. Thus, we expect managers in turbulent markets to use more marketing and financial metrics than when these markets are stable.

H_9: Managers in introductory/growth (vs. maturity/decline) product life cycle stages, in more (vs. less) concentrated industries, facing lower market growth, and experiencing more market turbulence employ more marketing metrics in marketing decisions.

H_{10}: Managers in maturity/decline (vs. introductory/growth) product life cycle stages, in more (vs. less) concentrated industries, facing lower market growth, and experiencing more market turbulence employ more financial metrics in marketing decisions.

Type of marketing-mix activity. Lehmann and Reibstein (2006) discuss a value chain for metrics and identify the marketing-mix activity as a driver of marketing and financial metric use. Ambler (2003) and Farris et al. (2010) propose a variety of metrics for each marketing-mix activity. Building on these works, we focus on how ten marketing-mix activities are expected to drive marketing and financial metric use. We begin with public relations (PR)/sponsorship decisions, which are considered the most difficult to measure (Kotler and Keller 2009) for two reasons. First, PR usually focuses on new information about a company, which lacks historical benchmarks and reduces the firm's ability to generate metrics for such decisions. Second, companies rarely conduct both supply-side measurements on extent of media coverage (e.g., reach, volume of media coverage, total costs, cost per exposure) and demand-side measurements on reported exposure by consumers (e.g., awareness, recall, lead generation), so linking to marketing and financial metrics is difficult to achieve (Ambler 2003). Consequently, we consider PR/sponsorship a base level for hypothesizing effects of each other marketing-mix activity.

First, we consider traditional advertising decisions. Although it is difficult to measure long-term effects of advertising (Bucklin and Gupta 1999), advertising involves a large ongoing financial investment with historical benchmarks and several traditional short-term measures. Therefore, managers are likely to experience pressure to use not just more marketing metrics such as awareness, reach, and impressions but also more financial metrics such as ROI to justify large investments (Joshi and Hanssens 2010). As a result, we expect managers to employ a larger set of marketing and financial metrics for traditional advertising decisions than for PR/sponsorship decisions. Second, we consider Internet-based advertising, which facilitates computation of metrics such as hits/visits/page views, click-through rates, impressions, cost per click, conversion rates, and ROI (Bucklin and Sismeiro 2009). Thus, we expect managers making Internet-based advertising decisions to employ more marketing and financial metrics than when making PR/sponsorship decisions.

Third, we consider direct-to-consumer marketing, which involves traditional marketing efforts such as direct mail, catalog marketing, and telemarketing, for which historical benchmark data exist. In addition, newer approaches such as e-mail marketing, interactive television, kiosks, and mobile devices (i.e., Internet-based advertising) facilitate the computation of metrics such as awareness, number of responses, lead generation, conversion rate, cost per customer acquired, and ROI. Consequently, we expect managers to use more marketing and financial metrics for direct-to-consumer decisions than for PR/sponsorship decisions. Fourth, we consider social media efforts, such as Facebook and Twitter campaigns, which allow consumers to cocreate brands and experiences, express themselves digitally, establish social networks, and share creations and expressions with their social networks (Steenburgh and Avery 2008). Social media efforts, like Internet advertising, are suited to the computation of marketing metrics such as hits/visits/page views, awareness, number of friends or followers, willingness to recommend, and lead generation. However, because of the relative newness of social media, consumer creations, expressions, and sharing have not as yet been linked to purchases on a larger scale and thus to financial metrics (eMarketer 2010; Hoffman and Fodor 2010). As a result, while we expect managers making social media decisions to employ more marketing metrics than when making PR/sponsorship decisions, it is unclear whether they will employ more financial metrics.

Fifth, we consider price promotions, which are not found to generate positive long-term effects (Pauwels, Hanssens, and Siddarth 2002) and could generate negative long-term effects on brand equity. Thus, we expect managers to experience greater pressure to justify their use of sales promotions financially and to employ a larger number of short-term financial metrics (compared with PR/sponsorship decisions) such as target volume, promotional sales or incremental lift, net profit, and ROI. Sixth, we consider pricing decisions, which have important implications for finance and thus will be supported by pricing models and data-based benchmarks (Bucklin and Gupta 1999). Consequently, we expect managers to employ a larger set of financial metrics in their pricing decisions (relative to PR/sponsorship decisions) such as margin, target volume, ROI, and price elasticity, but not necessarily a larger number of marketing metrics.

Seventh, we consider new product development, which requires substantial capital over long time horizons. Although longer horizons reduce confidence in metrics (Kahn 2009), because of the substantial capital involved, we expect managers to employ a larger set of marketing and financial metrics (relative to PR/sponsorship decisions) such as belief in or attitude toward the new product concept, expected margin, total customers and target volume, market share, net profit, and ROI as well as to periodically update such metrics to enhance confidence over long new product development periods.

Eighth, we consider sales force decisions. Salespeople are closer to the sale than marketers; therefore, their efforts (compared with marketers' PR/sponsorship decisions) are more readily tied to financial metrics such as forecasts of sales potential, productivity, target volumes, sales funnels and pipelines, net profit, and ROI. However, due to the typical rivalry and independence observed in firms between sales and marketing, it is not clear whether sales managers will apply more or fewer marketing metrics.

Ninth, we consider distribution decisions, which, like sales force decisions, are more readily tied to financial metrics (compared with PR/sponsorship decisions) such as channel margins, target volume, inventory, number of distributors, and net profit. However, because distribution decisions are less likely made by marketers and more likely made by sales organizations or operations, it is not clear whether such decision makers will use more or fewer marketing metrics. For efficiency purposes, we present all 13 hypotheses in Table 2, but we summarize them here in two hypotheses:

H_{11}: Managers employ more marketing metrics when making traditional advertising, Internet advertising, direct-to-consumer, social media, and new product development decisions than when making PR/sponsorship decisions.

H_{12}: Managers employ more financial metrics when making traditional advertising, Internet advertising, direct-to-consumer, price promotion, pricing, new product development, sales force, and distribution decisions than when making PR/sponsorship decisions.

Relationship Between Metric Use and Marketing-Mix Performance

We define metric use as the employment of metrics as decision aids (e.g., for considering, benchmarking, monitoring) when making a marketing-mix decision (Abramson, Currim, and Sarin 2005). We define perceived performance of a marketing-mix activity as a firm's stated marketing (customer satisfaction, loyalty, market share), financial (sales, profitability, ROI), and overall outcomes, relative to the firm's stated objectives and similar prior activities or decisions (Jaworski and Kohli 1993; Moorman and Rust 1999; Verhoef and Leeflang 2009). We focus on perceived performance of the marketing-mix activity (in contrast to a firm-based performance metric) because the unit of analysis is a particular marketing-mix activity and not all efforts that affect firm performance.

When managers use more metrics (e.g., awareness, net profit) as decision aids, they perform more comprehensive evaluations of marketing-mix decisions, which increases the quality of decisions (Abramson, Currim, and Sarin 2005) and results in better marketing-mix performance (Menon et al. 1999). We describe the theoretical rationale briefly as follows: When managers use a metric (e.g., net profit) as a decision aid in a marketing-mix decision (e.g., price promotions), just the consideration of the metric (without benchmarking or monitoring) can be better than when no metric is considered because it makes managers sensitive to a goal (e.g., net profit). In addition, given that they have information on the metric (net profit) before the marketing-mix decision, which can serve as a benchmark, it is likely that the metric will be computed after implementation of the marketing-mix decision (price promotion), so there would be an opportunity to monitor performance of the marketing-mix activity. Monitoring the performance of the marketing-mix activity is facilitated in two ways: (1) relative to the manager's stated objectives or goals (net profit) for the marketing-mix activity and (2) relative to similar marketing-mix activities (price promotions) made in the past. In addition, benchmarking and monitoring over time allows managers to assess performance differences between variants of the marketing-mix decision (e.g., price promotions with different price cuts) so that there is less uncertainty not just about the performance of the decision but also about whether the decision (the extent of the price cut) was the correct one (Abramson, Currim, and Sarin 2005). In summary, greater use of metrics enables better marketing-mix performance because it permits benchmarking and monitoring of performance and thus more comprehensive evaluations of marketing-mix decisions, which provides information to help planned marketing-mix activities produce desired results (Jaworski 1988; Menon et al. 1999).

Finally, it is important for managers to employ both marketing and financial metrics to assess the performance of the marketing-mix activity, because if only marketing metrics are employed (e.g., market share), there may be financial uncertainty (e.g., regarding net profit given that additional market share can come from loyals buying more and earlier than usual, which can later lead to postpromotion sales dips). Likewise, if only financial metrics are employed (ROI), there will be marketing uncertainty (regarding the extent to which sales come from switchers vs. loyals, which is important for targeting). Consequently, we expect that the greater the number of marketing and financial metrics used when making a marketing-mix decision, the better is the perceived performance of the marketing-mix activity.

H_{13}: Increasing use of marketing and financial metrics in marketing-mix decisions is associated with better perceived performance of the marketing-mix activity.

Research Methodology

Questionnaire Development and Measurement

We took operational measures for constructs in Figure 1 from a variety of extant literature, which we summarize in Appendix A. Specifically, we took measurement of (1) firm strategy from literatures on market orientation (Deshpandé and Farley 1998; Verhoef and Leeflang 2009), strategic orientation (Olson, Slater, and Hult 2005; Slater and Olson 2000), and organizational involvement (Noble and Mokwa 1999); (2) firm and environmental characteristics from literatures on market orientation (Jaworski and Kohli 1993), marketing's influence in the firm (Homburg, Workman, and Krohmer 1999; Verhoef and Leeflang 2009), firms' use of marketing research (Deshpandé and Zaltman 1982), new product entry (Kuester, Homburg, and Robertson 1999), and top management decision processes (Miller, Burke, and Glick 1998); (3) marketing-mix activity from the literature on marketing decision making (Menon et al. 1999); and (4) marketing and financial metrics from a three-step procedure—(i) a literature review (Ambler 2003; Ambler, Kokkinaki, and Puntoni 2004; Barwise and Farley 2004; Du, Kamakura, and Mela 2007; Farris et al. 2010; Hoffman and Fodor 2010; Lehmann and Reibstein 2006; Pauwels et al. 2009; Srinivasan, Vanhuele, and Pauwels 2010), (ii) conversations with 22 executives, as noted previously, mainly for validation and omission errors in the literature review; and (iii) equalization of the marketing and financial metrics

to avoid presentation bias in managerial elicitation of the marketing and financial metrics employed in a particular marketing-mix decision).[1] Finally, (5) we based marketing-mix activity performance on eight operational measures—two measures of overall performance relative to the firm's stated objectives and to similar marketing-mix activities in the past, based on Jaworski and Kohli (1993), and six performance measures relative to the firm's objectives and specific marketing and financial goals such as customer satisfaction, loyalty, sales, market share, profitability, and ROI based on Moorman and Rust (1999) and Verhoef and Leeflang (2009).

The questionnaire consisted of two sections. First, from a list of ten marketing-mix activities, managers indicated which marketing-mix decisions they recently undertook. Following Menon et al. (1999, p. 28), we asked them to focus on decisions that "(1) were not so recent that performance evaluation is premature and (2) not so long ago that memory about the decision and performance is fuzzy." Next, for each marketing-mix activity they undertook (managers were required to report at least one marketing-mix decision but could report more than one decision), we asked managers to indicate which marketing (financial) metrics they used before or while making the decision from a list of 12 general marketing (financial) metrics common to all marketing-mix activities and 3 specific marketing (financial) metrics related to the particular marketing-mix activity (Table 1). Managers could also view the definition of each listed metric, indicate any other unlisted metric used, or select a "no metric employed" option. To minimize simultaneity/endogeneity concerns, we followed this item with 8 measures of marketing-mix activity performance observed after the decision was made. Subsequently, managers indicated the level of organizational involvement for each activity. In the second section, managers provided information on firm strategy, metric orientation, and managerial, firm, and environmental characteristics.[2]

Data Collection and Sample Description

We used a variety of sources to obtain participants. First, we directly sent 500 members of the American Marketing Association and 560 MBA alumni of a West Coast university the study purpose, instructions on how to participate, and the questionnaire hyperlink, followed by two reminders ten days later and the week following the first reminder. Second, we approached marketing professional organizations such as Marketing Executives Group, Marketing Executives Network Group, Society of Marketing Professional Services, and Sales Marketing Executives, whose membership range from 1,800 to 30,000 marketing professionals. These organizations posted announcements to their respective members on LinkedIn with a request to participate. LinkedIn is the most successful and comprehensive professional social media medium, consisting of 135 million members, and is designed to encourage exchange of information, ideas, and opportunities among members. Professional organizations use LinkedIn to carefully select members and advance best practices, white papers, and networking opportunities, which make the website not just legitimate but a high-involvement setting for professional managers. Following Fredrickson and Mitchell (1984), we indicated in our cover letter post and questionnaire introduction that we were interested in responses from managers who do and do not employ metrics in their decision making. To encourage response, we offered managers a customized benchmark report comparing their use of metrics with other respondents. To ensure validity of reports on metric use and marketing-mix performance, we guaranteed anonymity of the individual and company. A total of 439 managers responded on 1287 marketing decisions, with 84% of managers (and 81% of decisions) from professional organizations and 16% of managers (and 19% of decisions) from the alumni group. We did not detect nonresponse bias among our respondents, using the Armstrong and Overton (1977) test, in which we compared late and early respondents scores on the included constructs ($p > .05$).

The sample consists of a good mix of top- and lower-level managers (56% vs. 44%); managers in prospector (26%), analyzer (25%), differentiated defender (37%), and low-cost defender (12%) organizations; companies in introductory/growth (43%) versus maturity/decline (57%) stages of the product life cycle; and in concentrated (40%) vs. fragmented (60%) industries. The average number of employees is 12,658, and the median is 125 employees, which indicates a good mix of large and small firms. In addition, there is good variation on each of the other drivers of metric use included in Figure 1.[3]

[1]Equalization involved minimal change to the metrics considered. We accomplished this by excluding a particular marketing or financial metric conceptually similar to an included metric but reported less often used by managers in the pretest. Across the ten marketing-mix decisions, less than 5% (3%) of managers wrote in marketing (financial) metrics used not presented to them, indicating that the set of metrics presented is thorough.

[2]We expected respondent drop-off in the second section of the questionnaire because the effects of length are more likely to be felt in the second section of the questionnaire than the first section of the questionnaire. However, we observed a 40% dropout rate for the first section of the questionnaire and a much smaller 5% dropout rate for the second section of the questionnaire. This suggests that drop-off was due less to length of the questionnaire and perhaps explained better by whether the manager was fully informed about the marketing-mix decision or whether the manager responding was the one most responsible for the marketing-mix decision.

[3]There is also good variance on metric-based compensation (M = 4.8, SD = 1.5, where 1 = "not important" and 7 = "extremely important"), metric training (M = 4.5, SD = 1.8, where 1 = "much less than average" and 7 = "much more than average"), B2B- and B2C-oriented companies (M = 2.9, SD = 2.2, where 1 = "mostly B2B" and 7 = "mostly B2C"), goods- and service-oriented firms (M = 5.0, SD = 2.4, where 1 = "mostly goods" and 7 = "mostly services"), firms experiencing market growth and decline (M = 5.1, SD = 1.9, where 1 = ">20% decline" and 7 = ">20% growth"), and market turbulence (M = 4.4, SD = 1.1, where 1 = "strongly disagree" and 7 = "strongly agree"). The mix of privately held versus publicly traded companies is 76% versus 24%, which is close to but higher than the 2007 U.S. Census (67% vs. 33%) and firms without versus those with a CMO (72% vs. 28%) and is also close to Nath and Mahajan's (2008) modalities of 75% versus 25%.

Validity and Reliability of Measures

Before the questionnaire was distributed, we pretested it with five academic experts of a dissertation committee and ten marketing managers. To help ensure construct validity, we asked academic experts to assess whether questions and scale items were representative of our underlying constructs. In line with the pretest results, we reduced length, altered wording, and skipped redundant items, and all our pretest academic experts and managers felt comfortable that other managers could answer the questions. To further assess reliability and validity of measures, we conducted three tests. First, we computed coefficient alphas; all but three were greater than .7 (market turbulence is .63, market growth is .66, managerial experience is .68). Second, we conducted exploratory factor analyses for our new constructs, which revealed appropriate loadings higher than .7 for each scale item belonging to a construct. Third, we tested for common method bias using Harman's one-factor test, which did not indicate any common method bias. We also employed the test that Lindell and Whitney (2001) propose and Podsakoff et al. (2003) suggest and adjusted the correlation matrix by the lowest positive pairwise correlation value to create a partial-correlation adjusted matrix. No pairwise correlation lost significance, again indicating no evidence of common method bias in our sample.

Econometric Model

Following our conceptual model, we formulate our econometric model as follows:

$$(1)\ \text{MMET} = \beta_0 + \sum_{p=1}^{5}\beta_p \text{FS}_p + \sum_{d=1}^{2}\beta_{d+5}\text{MO}_d + \sum_{g=1}^{4}\beta_{g+7}\text{MC}_g + \sum_{q=1}^{6}\beta_{q+11}\text{FC}_q + \sum_{c=1}^{4}\beta_{c+17}\text{EC}_c + \sum_{i=1}^{9}\beta_{i+21}\text{MA}_i + \varepsilon_{\text{MMET}},$$

$$(2)\ \text{FMET} = \omega_0 + \sum_{p=1}^{5}\omega_p \text{FS}_p + \sum_{d=1}^{2}\omega_{d+5}\text{MO}_d + \sum_{g=1}^{4}\omega_{g+7}\text{MC}_g + \sum_{q=1}^{6}\omega_{q+11}\text{FC}_q + \sum_{c=1}^{4}\omega_{c+17}\text{EC}_c + \sum_{i=1}^{9}\omega_{i+21}\text{MA}_i + \varepsilon_{\text{FMET}}$$

$$(3)\qquad \text{PERF} = \alpha_0 + \alpha_1\text{MMET} + \alpha_2\text{FMET} + \varepsilon_{\text{PERF}},$$

where MMET is the number of marketing metrics employed in a marketing-mix decision, FS_p are five firm strategy variables (analyzers, differentiated defenders, and low-cost defenders each relative to prospectors [which is the base level], market orientation, and organizational involvement), MO_d are two metric orientation measures, MC_g are four managerial characteristics, FC_q are six firm characteristics, EC_c are four environmental characteristics, and MA_i are nine marketing activities relative to PR/sponsorship, which is the base level. In Equation 2, FMET is the number of financial metrics employed in a marketing-mix decision, with independent variables similar to Equation 1. We account for potential dependence created by including multiple marketing-mix decisions made by a single manager by including managerial characteristics. In Equation 3, PERF assesses marketing activity performance, which is explained by MMET and FMET.

To estimate our econometric model, we use a seemingly unrelated regression (SUR) to allow for (1) contemporaneous correlations between error terms of Equations 1, 2, and 3 and (2) joint estimation of Equations 1, 2, and 3. In addition, we estimate the system of equations using ordinary least squares (OLS) and generalized least squares (GLS), the latter technique to account for variances of observations being unequal (heteroskedasticity) or when there is correlation between observations. We report SUR-GLS results because fits and significance levels were higher, though differences between SUR-GLS and SUR-OLS results were small. In addition, we ran Equation 3 with managerial characteristics, recent business performance, and growth as additional independent variables; however, the results were similar to our original model specification. Variance inflation factor scores computed for each independent variable are well below 6 (Hair et al. 1998), so estimation is not expected to suffer from multicollinearity in the aggregate based on all other independent variables. In addition, more than 99% of pairwise correlation coefficients (524 of 528) in Appendix B are less than .40 (e.g., Leeflang et al. 2000). One exception is firm size and ownership (.66). The null hypothesis that variance of the residuals is homogenous cannot be rejected in any of three equations ($p > .66$, .86, and .86, respectively), indicating no heteroskedasticity in any equation.

Results

Of the 439 managers reporting on 1287 marketing-mix decisions, more than 100 managers reported on 8 of 10 marketing-mix decisions, while 70 and 46 managers reported on price promotion and distribution decisions, respectively (Table 3). The news on the reported use of metrics appears to be good. Managers reported using 3.64 marketing and 3.18 financial metrics on average and between 2.8 and 4.8 marketing metrics and between 1.8 and 4.2 financial metrics across 10 marketing-mix decisions. In Table 4, Panels A and B, we present reported use (in percentage of times used) and rank order of use for each general and specific marketing and financial metric for each of ten marketing-mix activities. The results in Tables 3 and 4 have face validity and should be useful for researchers and managers interested in selecting metrics to link marketing-mix efforts to performance.

Antecedents of Marketing and Financial Metric Use

Table 5 presents the standardized coefficients for Equations 1 and 2. We begin with firm strategy. We found that firms with a greater market orientation use more marketing metrics ($p < .01$) but not more financial metrics, so the results support H_1 only for marketing metrics. We found that analyzers ($p < .05$) and low-cost defenders ($p < .01$) use more marketing metrics than prospectors, and analyzers ($p < .01$), low-cost defenders ($p < .01$), and differentiated defenders ($p < .05$) use more financial metrics (each $p < .01$) than prospec-

TABLE 3
Reported Usage of Metrics

Marketing-Mix Activity	Number of Managers	Marketing Metrics[a]	Financial Metrics[a]	Total Metrics[a]
Traditional advertising	136	3.81	2.94	6.75
Internet advertising	150	4.03	3.33	7.36
Direct to consumer	214	3.48	3.34	6.82
Social media	142	3.68	1.94	5.62
Price promotions	70	2.83	3.44	6.27
Pricing	104	3.88	3.99	7.87
New product development	144	4.76	4.15	8.91
Sales force	127	3.10	3.75	6.85
Distribution	46	3.76	4.09	7.85
PR/sponsorships	154	2.90	1.82	4.72
Overall	1,287	3.64	3.18	6.82

[a]Means are reported.

tors. Consequently, the results largely support H_2 (for five of six firm strategy–metric combinations). The greater the organizational involvement in the marketing decision, the more the use of marketing ($p < .01$) and financial ($p < .01$) metrics. Thus, H_3 is supported. Second, we discuss metric orientation. The greater the manager's metric-based compensation and metric-based training, the greater is the number of marketing and financial metrics used in marketing-mix decisions (all four $p < .01$). Consequently, H_4 is supported. Third, in contrast to firm strategy and metric orientation, we did not find evidence that managerial characteristics explained variance in the number of marketing and financial metrics employed. As we expected, only the quantitative background of the manager is positively associated with the use of financial metrics ($p < .01$). Thus, H_5 is not supported, and H_6 is minimally supported on only the quantitative background measure.

Fourth, we found that firm characteristics are associated with managerial use of metrics. Managers report a greater use of marketing metrics in public (vs. private) firms ($p < .05$), firms with better recent business performance, and in B2C vs. B2B and goods- vs. service-focused firms (each $p < .01$). Thus, H_7 is largely supported (three of five expectations). In addition, managers report more use of financial metrics in firms that are publicly owned (vs. private), with CMO presence, with better recent business performance, and with B2C vs. B2B and goods vs. service orientations (each $p < .01$). Thus, H_8 is largely supported (five of six expectations). A possible explanation for the hypotheses on firm size not being supported is the correlation between ownership and size (.66). Fifth, managers report more use of marketing and financial metrics when there is greater industry concentration ($p < .01$) and more market turbulence ($p < .01$). Consequently, H_9 and H_{10}, on environmental characteristics, are partially supported (two of four expectations each) for industry concentration and market turbulence. Finally, regarding marketing-mix activities, we found that, as hypothesized, managers use more marketing metrics for Internet advertising and new product decisions (each $p < .01$) than for PR/sponsorship decisions and use more financial metrics for traditional advertising, Internet advertising, direct-to-consumer, price promotions, pricing, new product development, and sales force decisions (each $p < .01$ except traditional advertising, which has $p < .05$), each relative to the PR/sponsorship decision. Consequently, H_{11} is partially supported only for Internet advertising and new product decisions, while H_{12} is largely supported (seven of eight expectations). Although we found that firm strategy, metric orientation, and firm and environmental (managerial) characteristics are approximately equally important (unimportant) in explaining variation in marketing and financial metrics used, type of marketing-mix effort is somewhat more important in explaining number of financial metrics used than number of marketing metrics used, in particular, for traditional advertising, direct-to-consumer, pricing, and sales force decisions.

Relationship Between Metric Use and Marketing-Mix Performance

Table 5 also reports estimation results of Equation 3. As hypothesized, we found that the increasing use of marketing and financial metrics results in better perceived marketing-mix performance (both $p < .01$), in support of H_{13}. This result supports the measurement of use of metrics and perceived marketing-mix performance. It is notable that after we correct or account for the use of financial metrics, the use of marketing metrics contributes almost equally to improved marketing-mix performance, with the additional use of a marketing (financial) metric in a marketing-mix decision being associated with a 3% (2%) increase in marketing-mix performance.

Additional Analyses

First, we investigated conditions under which managers use more marketing than financial metrics (the third column in Table 5). The results demonstrate that firm strategy (three of five variables) and type of marketing-mix activity (six of nine variables) largely influence the relative use of marketing versus financial metrics, firm (two of six variables) and managerial characteristics (one of four variables) only somewhat influence the relative use of marketing versus financial metrics, and metric orientation (zero of two variables) and environmental characteristics (zero of four variables) do not influence the relative use of marketing versus financial metrics. Second, we investigated whether the effects of driver variables on marketing and financial metrics employed were different for private versus public firms. Of the 58 potential effects (29 driver variables × 2

TABLE 4
Reported Percentage Use and Rank Order of Metrics

A: General Metrics by Marketing-Mix Activity

	Overall	Traditional Advertising	Internet Advertising	Direct to Consumer	Social Media	Price Promotions	Pricing	New Product Development	Sales Force	Distribution	PR/Sponsorships
General Marketing Metrics											
Market share (units or dollars)	28% (5)	30% (11)	15% (16)	14% (24)	11% (22)	37% (5)	43% (4)	56% (3)	34% (7)	35% (7)	9% (21)
Awareness (product or brand)	41% (2)	60% (1)	42% (7)	45% (3)	53% (3)	29% (7)	28% (13)	38% (10)	28% (11)	30% (10)	55% (1)
Satisfaction (product or brand)	20% (11)	17% (18)	17% (13)	20% (15)	15% (18)	10% (22)	30% (12)	38% (9)	19% (14)	24% (13)	12% (19)
Likeability (product or brand)	15% (16)	19% (15)	13% (20)	14% (23)	25% (8)	9% (23)	10% (24)	21% (21)	10% (24)	15% (20)	14% (17)
Preference (product or brand)	17% (15)	22% (14)	14% (18)	16% (19)	15% (16)	6% (29)	25% (15)	28% (14)	12% (22)	15% (20)	17% (13)
Willingness to recommend (product or brand)	22% (7)	26% (12)	19% (12)	24% (12)	29% (6)	13% (19)	26% (14)	28% (14)	17% (18)	24% (13)	17% (13)
Loyalty (product or brand)	20% (12)	23% (13)	15% (16)	24% (13)	16% (15)	20% (11)	24% (16)	26% (18)	17% (16)	15% (20)	17% (13)
Perceived product quality	22% (8)	16% (19)	13% (21)	18% (17)	18% (14)	17% (15)	38% (7)	36% (11)	21% (13)	26% (12)	18% (12)
Consideration set	4% (24)	4% (27)	3% (31)	4% (30)	4% (28)	7% (27)	4% (32)	7% (28)	3% (30)	4% (29)	3% (27)
Total customers	37% (3)	31% (10)	27% (9)	30% (7)	25% (7)	51% (3)	38% (8)	44% (6)	48% (5)	57% (4)	23% (8)
Share of customer wallet	13% (18)	8% (25)	9% (23)	10% (25)	3% (29)	20% (11)	22% (18)	23% (20)	16% (20)	13% (24)	5% (24)
Share of voice	8% (21)	18% (17)	9% (25)	5% (29)	13% (20)	0% (33)	6% (31)	6% (30)	4% (28)	9% (27)	16% (16)
Other marketing metric	5% (23)	4% (27)	5% (28)	7% (27)	4% (27)	9% (23)	8% (26)	6% (30)	4% (28)	2% (32)	4% (26)
No marketing metric	12% (20)	12% (24)	5% (27)	9% (26)	15% (16)	13% (19)	8% (26)	8% (27)	17% (18)	11% (25)	20% (11)
General Financial Metrics											
Net profit	28% (6)	13% (23)	14% (18)	20% (15)	5% (26)	44% (4)	61% (1)	49% (5)	28% (11)	48% (5)	3% (27)
ROI	36% (4)	42% (5)	47% (6)	43% (4)	20% (12)	34% (6)	34% (10)	65% (2)	35% (6)	22% (18)	22% (9)
ROS	19% (14)	15% (21)	17% (13)	16% (19)	8% (24)	26% (8)	22% (18)	15% (23)	30% (9)	33% (9)	5% (24)
ROMI	20% (10)	32% (7)	34% (8)	26% (10)	13% (21)	19% (13)	15% (21)	9% (26)	13% (21)	28% (11)	14% (17)
Net present value	8% (22)	4% (27)	5% (28)	6% (28)	1% (30)	9% (23)	15% (21)	27% (17)	5% (27)	7% (28)	1% (31)
EVA	4% (25)	3% (31)	3% (31)	2% (31)	1% (30)	1% (31)	8% (26)	13% (24)	3% (30)	4% (29)	1% (32)
Marketing expenditures (% specifically on brand building activities)	21% (9)	48% (2)	27% (10)	21% (14)	23% (10)	9% (23)	13% (23)	12% (25)	11% (23)	24% (13)	27% (7)
Stock prices/stock returns	1% (27)	0% (33)	0% (33)	0% (33)	0% (33)	1% (31)	3% (33)	1% (32)	1% (33)	0% (33)	0% (33)
Tobin's q	0% (28)	0% (33)	0% (33)	0% (34)	0% (33)	0% (33)	0% (34)	0% (34)	1% (33)	0% (33)	0% (33)
Target volume (units or sales)	43% (1)	32% (7)	25% (11)	28% (9)	15% (18)	76% (1)	56% (2)	69% (1)	57% (1)	65% (1)	8% (22)
Customer segment profitability	19% (13)	16% (19)	17% (13)	16% (18)	10% (23)	19% (13)	23% (17)	29% (13)	17% (16)	35% (7)	7% (23)
Customer lifetime value	12% (19)	8% (25)	9% (23)	16% (19)	7% (25)	14% (18)	19% (20)	17% (22)	9% (25)	15% (20)	3% (29)
Other financial metric	3% (26)	1% (32)	8% (26)	2% (31)	1% (32)	3% (30)	8% (26)	1% (32)	3% (30)	4% (29)	3% (29)
No financial metric	14% (17)	13% (22)	10% (22)	15% (22)	32% (5)	11% (21)	8% (26)	7% (28)	9% (25)	11% (25)	28% (6)

TABLE 4
Continued

B: Metrics Specific to Marketing-Mix Activities

Traditional Advertising	Internet Advertising	Direct to Consumer	Social Media	Price Promotions	Pricing	New Product Development	Sales Force	Distribution	PR/ Sponsorships
Specific Marketing Metrics									
Reach 46% (3)	Click-through rate 75% (1)	Number of responses by campaign 61% (1)	Number of followers/tags 60% (1)	Trial/repeat volume (or ratio) 23% (10)	Relative price 40% (6)	Belief in new product concept 44% (6)	New customer retention rate 31% (8)	Strength of channel relationships 63% (2)	Reach 42% (2)
Impressions 37% (6)	Hits/visits/ page views 75% (1)	Reach 29% (8)	Hits/visits/page views 55% (2)	Reach 17% (15)	Price premium 37% (9)	Expected annual growth rate 39% (8)	Number of responses by campaign 29% (10)	Out of stock percentage/ availability 24% (13)	Volume of coverage by media 29% (4)
Recall 18% (16)	Impressions 51% (5)	New customer retention rate 25% (11)	Volume of coverage by media 23% (10)	Impressions 16% (17)	Reservation price 10% (24)	Attitude toward product/brand 36% (11)	Reach 18% (15)	Product category volume 20% (19)	Recall 11% (20)
Specific Financial Metrics									
Lead generation 46% (4)	Cost per click 64% (3)	Lead generation 58% (2)	Lead generation 47% (4)	Promotional sales/incremental lift 59% (2)	Unit margin/margin percentage 47% (3)	Expected margin percentage 55% (4)	Sales funnel/sales pipeline 56% (2)	Channel margins 61% (3)	Lead generation 40% (3)
Cost per customer acquired/cost per thousand impressions 32% (7)	Conversion rate 59% (4)	Conversion rate 42% (5)	Total costs 23% (9)	Redemption rates (e.g., coupons) 26% (8)	Price elasticity 42% (5)	Level of cannibalization/ cannibalization rate 28% (14)	Sales force productivity 54% (3)	Total inventory/ total distributors 39% (6)	Total costs 29% (4)
Internal rate of return 4% (27)	Internal rate of return 4% (30)	Cost per customer acquired 36% (6)	Cost per exposure 20% (12)	Internal rate of return 7% (27)	Optimal price 33% (11)	Internal rate of return 24% (19)	Sales potential forecast 54% (3)	Sales per store/stock-keeping units 24% (13)	Cost per exposure 21% (10)

TABLE 5
Seemingly Unrelated Regression-GLS Estimation Results

A: Antecedents of Metric Use

Variable	Marketing Metric Use	Financial Metric Use	Marketing–Financial Metric Use
Intercept	.00***	.00***	.00***
Firm Strategy[a]			
Market orientation	.17***	.04	.13***
Analyzers	.06**	.17***	−.11***
Low-cost defenders	.10***	.18***	−.08***
Differentiated defenders	.04	.07**	−.06*
Organizational involvement	.07***	.12***	−.04
Metric Orientation			
Metric-based compensation	.15***	.16***	−.03
Metric training level	.10***	.11***	.00
Managerial Characteristics			
Functional area (marketing)	.01	−.02	.04
Managerial level	.03	.05	.00
Managerial experience	.02	−.05*	.05
Quantitative background	−.04	.07***	−.11***
Firm Characteristics			
Firm size	−.05	−.07*	.04
Type of ownership (public)	.09**	.12***	−.05
CMO presence	.02	.11***	−.08***
Recent business performance (better)	.10***	.09***	−.04
B2C	.12***	.08***	.05*
Services	−.10***	−.19***	.09***
Environmental Characteristics			
Product life cycle stage (maturity/declining)	−.05*	.02	−.05*
Industry concentration (concentrated)	.11***	.08***	.03
Market growth	−.06*	−.04	−.01
Market turbulence (More Turbulent)	.10***	.07***	.05*
Marketing-Mix Activity[b]			
Traditional advertising	.04	.06**	−.01
Internet advertising	.10***	.18***	−.04
Direct to consumer	.03	.20***	−.15***
Social media	.05	−.03	.08**
Price promotions	−.08**	.08***	−.12***
Pricing	.05	.15***	−.10***
New product development	.14***	.17***	−.02
Sales Force	−.02	.18***	−.18***
Distribution	−.02	.04*	−.08***

B: Relationship Between Metric Use and Marketing-Mix Activity Performance

Variable	Marketing-Mix Activity Performance	Marketing-Mix Activity Performance
Intercept	.00***	.00***
Marketing metrics	.21***	—
Financial metrics	.15***	—
Marketing – financial metrics	—	.00

C: Model Diagnostics for SUR-GLS System

System weighted R-square	.21	.08
System weighted degrees of freedom	3796	2541
System weighted mean square error	1.00	1.00

*$p < .10$.
**$p < .05$.
***$p < .01$.
[a]Analyzers, low-cost defenders, and differentiated defenders are compared with prospectors.
[b]All marketing-mix activities are compared with PR/sponsorships.

types of metrics employed marketing and financial), we found no differences on 39 effects and differences on 19 effects (approximately a 2:1 ratio in favor of no differences). Most differences we found indicated that effects were greater for private firms and number of financial metrics employed. For example, the effects of firm strategy, metric orientation, and firm and environmental characteristics on financial metric use (to a greater extent) and market-

ing metric use (to a lesser extent) are greater for private firms. Third, we investigated whether the effects of driver variables on marketing and financial metric use were different for the sample of MBA alumni versus the sample of professional organizations' members and found that the alumni sample had no distorting effect or makes the results reported herein (with the inclusion of the alumni sample) more conservative for 90% of the hypotheses.[4] Fourth, we added squared terms for MMET and FMET in Equation 3. The coefficient for $FMET^2$ was insignificant ($p > .05$), while the coefficient for $MMET^2$ indicated diminishing returns of scale after one marketing metric.

In summary, the results demonstrate that type of marketing-mix activity, firm strategy, metric orientation, and firm and environmental characteristics are more useful than managerial characteristics in explaining metric use. Firm strategy, metric orientation, and firm characteristics explain both marketing and financial metric use; however, the type of marketing-mix activity is more useful in explaining financial metric use than marketing metric use. Firm strategy and type of marketing-mix activity also influence relative marketing versus financial metric use, while the aforementioned results largely hold when the sample is split by public and private firms and when pooled or not.

Discussion and Managerial Recommendations

Our main result suggests that a manager's use of metrics is not based on who the manager is but rather on the cluster of other variables describing the setting in which the manager operates (e.g., firm strategy, metric orientation, type of marketing-mix decision, firm and environmental characteristics). In other words, the strategic theory of homophily, agency theory, the resource-based view of the firm, and contingency theory are more powerful than the decision maker's perspective in explaining metric use. Our secondary result is that use of metrics is positively associated with marketing-mix performance. In particular, we found that marketing metrics are positively associated with marketing-mix performance and equally important to financial metrics, which supports the current demand for development and use of both marketing and financial metrics for marketing accountability.

Our results help us identify settings in which managers use fewer marketing and financial metrics both independently and relative to one another, subsequent to which we make recommendations on how to encourage managers to use more metrics in such settings. On the independent use of metrics, we found that managers use fewer marketing metrics in firms with lower market orientation and in prospector and differentiated defender firms (vs. low-cost defender and analyzer firms). Moreover, we found that managers use fewer marketing metrics for traditional advertising, direct-to-consumer, social media, price promotions, pricing, sales force, and distribution decisions than for new product development and Internet advertising decisions. In addition, we found that managers use fewer financial metrics in firms that are prospectors, are private, and have no CMO presence. We also found that managers employ fewer marketing and financial metrics when there is less organizational involvement in the marketing-mix decision, when their compensation is less metric based, and when there is less metric-based training, as well as in firms with worse recent business performance, in greater B2B and service orientations, and industries that are less concentrated and turbulent. On the relative use of metrics, managers use fewer marketing (than financial) metrics in firms that are analyzers and low-cost defenders (both relative to prospectors), when managers have a greater quantitative background, and when the firm has a CMO presence, as well as in direct-to-consumer, price promotion, pricing, sales force, and distribution decisions. Managers use fewer financial (than marketing) metrics when the firm has a greater market orientation, when sales come more from services than goods, and in social media decisions.

Our results suggest five strategies to increase the overall use of metrics. First, top management can link managerial compensation to metrics. Second, managers should receive training on the development and use of metrics. Third, managers from other functions in the organization (e.g., accounting, finance) could be involved in the marketing-mix decision, so the decision is not just a marketing effort but companywide. Fourth, top management can hire a CMO to participate in top management decisions to increase the relative use of financial over marketing metrics. Fifth, managers with quantitative backgrounds should be involved in the marketing-mix decision to increase relative use of financial over marketing metrics. Although these five recommendations are straightforward and easy to implement, the reward for marketing can be great (Lehmann 2004). Indeed, if top management is less forthcoming on these aspects, it is in the interest of marketing managers to encourage top management to move independently on these aspects.

This study has its limitations. First, we only study firms in one country. Clearly, there is need for an international study that compares metric use across countries. Second, we use self-reported performance from a single informant. In general, the use of self-reported performance can lead to stronger relationships between metric use and performance (e.g., Verhoef and Leeflang 2009). However, we do use eight subjective measures based on three separate published studies from the literatures on the role of marketing, market orientation, and marketing's influence in the firm. Multiple respondents per firm could increase reliability of findings. Third, the use of cross-sectional data has inherent limitations for inferring causal relationships and dynamics. How-

[4]We also conducted an analysis to investigate how the alumni sample, compared with the sample of members of professional organizations, affects support for hypotheses proposed in the study. The sizes of the two samples vary in that the alumni sample accounts for 241 marketing-mix decisions, while the member of professional organizations sample accounts for 1046 marketing-mix decisions. Of the 52 hypotheses, we found that the alumni sample had no differential effect on the results of 32 hypotheses, weakened support for 13 hypotheses proposed, and strengthened support for 7 hypotheses. As a result, for 45 (32 + 13) of the 52 hypotheses (or close to 90% of the hypotheses), the alumni sample had no distorting effect or made the reported results (with the inclusion of the alumni sample) more conservative.

ever, these three limitations are shared with majority of published studies in literature streams on the role of marketing, market orientation, and marketing's influence in the firm. Fourth, although we study the use of metrics, we do not comment on the importance of metrics used to judge marketing-mix performance. We did measure importance of each metric used; however, the results were similar to the reported results. Fifth, we excluded a few overlapping metrics to equalize the number of marketing and financial metrics, though we considered 42 marketing and 42 financial metrics and allowed managers to write in any unlisted marketing or financial metric used. Consequently, the exclusion problem is minimal. Sixth, the level of accountability and long- versus short-term orientation of the firm could affect the use of metrics, though we do consider firm strategy and metric orientation, which mitigate this issue.

A future direction to extend this work is to explore heterogeneity across managers' decisions in the variety of settings in the study. In this first study on drivers of metric use, we focus on establishing main effects of marketing-mix activities, firm strategy, metric orientation, and managerial, firm, and environmental characteristics to understand which variables are useful in driving metric use. A subsequent study might focus on interaction effects to judge whether importance of drivers is moderated by variables considered. We hope such further research will build on our efforts.

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APPENDIX A
Definition of Constructs and Operational Measures

Construct Basis	Definition and Operational Measures	α
Market Orientation (Deshpandé and Farley 1998; Kohli and Jaworski 1990; Verhoef and Leeflang 2009)	**Definition**: The extent to which a firm measures, monitors, and communicates customer needs and experiences throughout the firm and whether the firm's strategy is based on this information. **Measures**: How strongly do you agree or disagree with each of the following statements: (1 = "strongly disagree," and 7 = "strongly agree") •Our business objectives are driven primarily by customer satisfaction. •We constantly monitor our level of commitment and orientation to serving customer needs. •We freely communicate information about our successful and unsuccessful customer experiences throughout all business functions. •Our strategy for competitive advantage is based on our understanding of customer needs. •We measure customer satisfaction systematically and frequently. •We have routine or regular measures for customer service. •We are more customer focused than our competitors. •I believe this business exists primarily to serve customers.	.86
Strategic Orientation (Olson, Slater, and Hult 2005; Slater and Olson 2000)	**Definition**: The strategy a firm employs to compete in an industry or market, categorized based on two dominant frameworks of strategic orientation; Miles and Snow's (1978) typology, which focuses on the firm's intended rate of product-market change; and the Porter (1980) typology, which focuses on the firm's differentiation or cost advantage. **Measures**: Please select one of the following descriptions that best characterizes your organization: •*Prospectors*: These firms are frequently the first to market with new product or service concepts. They do not hesitate to enter new market segments in which there appears to be an opportunity. These firms concentrate on offering products that push performance boundaries. Their proposition is an offer of the most innovative product, whether it is based on substantial performance improvement or cost reduction. •*Analyzers*: These firms are seldom first-in with new products or services or first to enter emerging market segments. However, by monitoring market activity, they can be early followers with a better targeting strategy, increased customer benefits, or lower costs. •*Low-cost defenders*: These firms attempt to maintain a relatively stable domain by aggressively protecting their product market position. They rarely are at the forefront of product of service development; instead, they focus on producing goods or services as efficiently as possible. In general, these firms focus on increasing share in existing markets by providing products at the best prices. •*Differentiated defenders*: These firms attempt to maintain a relatively stable domain by aggressively protecting their product market position. They rarely are at the forefront of product or service development; instead, they focus on providing superior service and/or product quality. Their prices are typically higher than the industry average.	N.A.
Organizational Involvement (Noble and Mokwa 1999)	**Definition**: The extent to which a firm's marketing-mix decision or action is based on involvement of a wide range of managers across functions. **Measures**: How strongly do you agree or disagree with each of the following statements: (1 = "strongly disagree," and 7 = "strongly agree") •This marketing action was a real company-wide effort. •People from all over the organization were involved in this marketing action. •A wide range of departments or functions in the company got involved in this marketing action.	.94
Metric-Based Compensation	**Definition**: The importance of metrics in a manager's compensation package. **Measures**: Please indicate how important each metric type is related to your compensation package: (1 = "not at all important," and 7 = "extremely important") •Overall metrics •Marketing metrics •Financial metrics	.82

APPENDIX A
Continued

Construct Basis	Definition and Operational Measures	α
Metric-Based Training	**Definition**: A manager's level of training on the use of metrics. **Measures**: Please indicate your level of training with metrics (can be through work or educational experiences): (1 = "much less than average amount of training," and 7 = "much more than average amount of training") •Overall metrics •Marketing metrics •Financial metrics	.94
Functional Area and Managerial Level (Finkelstein, Hambrick, and Cannella 2009)	**Definition**: (Functional Area) Whether a manager works in the marketing department; (Managerial Level) Whether a manager is (a) VP level or higher (e.g., senior VP, C-level, or owner) or (b) lower than VP-level (e.g., director, manager). **Measures**: Please indicate your job title: •CEO/Owner, CMO, C-Level (other than marketing), SVP/VP of Marketing, SVP/VP Sales, SVP/VP (other than marketing and sales), Director of Marketing, Director of Sales, Brand Manager, Marketing Manager, Product Manager, Sales Manager, Other (please list)	N.A.
Managerial Experience	**Definition**: A manager's experience in number of years as a manager, at the firm, and in the current position. **Measures**: •How many years of managerial experience do you have? •How many years have you been working for this company? •How many years have you been working at your current position?	.68
Quantitative Background	**Definition**: A manager's qualitative/quantitative orientation based on education and work experience. **Measures**: Please rate your qualitative/quantitative background: (1 = "entirely qualitative," and 7 = "entirely quantitative") •Overall orientation •Educational background •Work experience background	.85
Firm Size	**Definition**: The number of full-time employees in a firm. **Measure**: Approximately how many full-time employees does your firm have?	N.A.
Type of Ownership (Verhoef and Leeflang 2009)	**Definition**: Whether a firm is publicly traded or privately held. **Measure**: Is your firm publicly traded?	N.A.
CMO Presence	**Definition**: Whether a firm employs a chief marketing officer (CMO). **Measure**: Does your firm employ a chief marketing officer (CMO)?	N.A.
Recent Business Performance (Jaworski and Kohli 1993)	**Definition**: A business unit's overall performance last year, relative to its own expectations and its competitors' performance. **Measures**: •To what extent did the overall performance of the business unit meet expectations last year" (1 = "poor," and 7 = "excellent") •To what extent did the overall performance of your business unit relative to your major competitors meet expectations last year? (1 = "poor," and 7 = "excellent")	.84
B2B vs. B2C (Verhoef and Leeflang 2009)	**Definition**: The extent to which a manager's sales come from B2B or B2C markets. **Measure**: Please indicate the extent to which your sales come from B2B or B2C markets. (1 = "mostly B2B," and 7 = "mostly B2C")	N.A.
Goods vs. Services (Verhoef and Leeflang 2009)	**Definition**: The extent to which a manager's sales come from goods or services markets. **Measure**: Please indicate the extent to which your sales come from goods or services markets. (1 = "mostly goods," and 7 = "mostly services")	N.A.

APPENDIX A
Continued

Construct Basis	Definition and Operational Measures	α
Product Life Cycle (Deshpandé and Zaltman 1982)	**Definition**: The stage of the product life cycle. **Measure**: At which one of the following stages would you place your product? (shown in a product life cycle diagram, introductory, growth, maturity, decline)	N.A.
Industry Concentration (Kuester, Homburg, and Robertson 1999)	**Definition**: The percentage of sales the four largest businesses competing in a market control. **Measure**: Approximately what percentage of sales does the largest 4 competing businesses in your market control? •0%–50%, 51%–100%	N.A.
Market Growth (Homburg, Workman, and Krohmer 1999)	**Definition**: The average annual growth or decline of the company and the industry over the last three years. **Measure**: •Over the last three years, what was the average annual market growth or decline for your company? •Over the last three years, what was the average annual market growth or decline for your industry?	.66
Market Turbulence (Miller, Burke, and Glick 1998)	**Definition**: The rate at which products or services become obsolete, the ease of forecasting consumer preferences, and how often a firm needs to change its marketing and production/service technology to keep up with competitors and/or consumer preferences. **Measures**: How strongly do you agree or disagree with each of the following statements: (1 = "strongly disagree," and 7 = "strongly agree"): •Products/services become obsolete very slowly in your firm's principal industry. (R) •Your firm seldom needs to change its marketing practices to keep up with competitors. (R) •Consumer demand and preferences are very easy to forecast in your firm's principal industry. (R) •Your firm must frequently change its production/service technology to keep up with competitors and/or consumer preferences.	.63
Marketing-Mix Decision (Menon et al. 1999)	**Definition**: A major marketing-mix decision undertaken not so recently that performance evaluation is premature and not so long ago that memory of the decision and its performance is fuzzy. **Measures**: Please indicate which types of major marketing decisions you have undertaken (or implemented) that (1) were not so recent that performance evaluation is premature and (2) not so long ago that memory about the decision and performance is fuzzy: •Traditional advertising (i.e., TV, magazine, radio, etc.), Internet advertising (i.e., banner ads, display ads, SEO, etc.), direct to consumer (i.e., e-mails, CRM, direct mail, etc.), social media (i.e., Twitter, Facebook, MySpace, etc.), price promotions, pricing, new product development, sales force, distribution, PR/sponsorships	N.A.
Marketing and Financial Metrics Used (Partial list: Ambler 2003; Barwise and Farley 2003; Farris et al. 2010; Hoffman and Fodor 2010; Lehmann and Reibstein 2006; Pauwels et al. 2009)	**Marketing Metric Definition**: Marketing metrics are based on a customer or marketing mind set. A metric is defined to be used in a marketing-mix decision if a manager employed the metric as a decision aid when making the marketing-mix decision. **Financial Metric Definition**: Financial metrics are either monetary based, based on financial ratios, or readily converted to monetary outcomes. **Measure**: Please indicate if you used any of the following MARKETING or FINANCIAL metrics when making your marketing-mix decision: •See Table 1 for 12 general marketing and 12 general financial metrics that were listed for each of 10 marketing-mix decisions. •In addition, see Table 1 for three specific marketing metrics and three specific financial metrics listed for each of ten specific marketing-mix decisions.	N.A.

APPENDIX A
Continued

Construct Basis	Definition and Operational Measures	α
Marketing-Mix Activity Performance (Jaworski and Kohli 1993; Moorman and Rust 1999; Verhoef and Leeflang 2009)	**Definition**: The performance of a marketing-mix activity is defined based on a firm's stated marketing, financial, and overall outcomes, relative to a firm's stated objectives and to similar prior decisions. **Measures**: •Relative to your firm's stated objectives, how is the last major marketing activity undertaken performing overall? (Jaworski and Kohli 1993) (1 = "much worse," and 7 = "much better") •Relative to similar prior marketing activities you've undertaken, how is the last major marketing activity undertaken performing? (Jaworski and Kohli 1993) (1 = "much worse," and 7 = "much better"; N.A. if unsure or never undertook activity) •Relative to your firm's stated objectives, how is the last major marketing activity undertaken performing on: (1 = "much worse," and 7 = "much better"; N.A. if unsure) ◦Customer satisfaction (Moorman and Rust 1999; Verhoef and Leeflang 2009) ◦Profitability (Moorman and Rust 1999; Verhoef and Leeflang 2009) ◦Customer loyalty (Verhoef and Leeflang 2009) ◦Sales (Moorman and Rust 1999) ◦Market share (Moorman and Rust 1999; Verhoef and Leeflang 2009) ◦ROI (Moorman and Rust 1999)	.94

Notes: (R) = reverse scored. N.A. = not applicable.

APPENDIX B
Correlation Matrix

	Market Orientation	Analyzer	Low-Cost Defender	Differentiated Defender	Organizational Involvement	Metric Compensation	Metric Training	Functional Area	Manager Level	Work Experience	Quantitative	Firm Size	Ownership	CMO	Recent Performance	B2C	Services	Life Cycle	Industry Concentration	Market Growth	Market Turbulence	Traditional Advertising	Internet Advertising	Direct to Consumer	Social Media	Price Promotions	Pricing	New Product Development	Sales Force	Distribution	Marketing Metrics	Financial Metrics	Performance
Market orientation	1.00																																
Analyzer	.03	1.00																															
Low-cost defender	−.21	−.20	1.00																														
Differentiated defender	−.04	−.41	−.27	1.00																													
Organizational involvement	.16	.01	−.08	−.09	1.00																												
Metrics compensation	.19	.08	−.09	−.13	.27	1.00																											
Metrics training	.17	−.01	−.06	−.12	.23	.33	1.00																										
Functional area	−.09	−.09	−.01	.03	−.04	−.09	−.03	1.00																									
Manager level	.03	.07	−.14	−.02	.08	.13	.08	−.53	1.00																								
Work experience	.13	.09	−.04	.01	.11	.11	.03	−.29	.39	1.00																							
Quantitative	−.03	.13	−.03	−.13	.08	.16	.31	−.12	.16	.09	1.00																						
Firm size	−.14	.04	−.06	.07	−.02	.03	.10	.27	−.23	−.12	.12	1.00																					
Ownership	−.15	.08	.00	−.03	.06	.05	.15	.14	−.11	−.03	.14	.66	1.00																				
CMO	−.06	.09	−.02	−.06	.04	.07	.04	.06	.04	.13	.05	.21	.14	1.00																			
Recent performance	.30	.05	−.11	.00	.02	.03	.07	.11	−.08	−.05	−.01	.17	.02	−.02	1.00																		
B2C	.06	.07	.10	−.10	.08	.03	.05	.05	−.01	.00	.08	.10	−.03	.07	.03	1.00																	
Services	.11	.01	.09	.07	−.05	−.17	−.09	.04	.00	.03	−.14	−.17	−.19	.02	−.06	.04	1.00																
Life cycle	−.16	.10	.00	.19	−.09	−.07	−.02	−.03	.01	.17	.07	.21	.15	.02	−.12	.06	.06	1.00															
Industry concentration	−.09	−.06	−.04	−.01	−.03	.03	.07	.02	−.05	.01	.03	.12	.12	.03	.04	−.17	−.23	−.04	1.00														
Market growth	.06	−.04	−.04	−.13	.08	.12	.06	.00	−.01	−.14	.01	.01	.04	.04	.37	−.03	−.21	−.34	.17	1.00													
Market turbulence	.02	.15	.03	−.25	.11	.18	.14	−.02	.03	.05	.06	−.01	.10	.13	.02	.06	.01	−.05	−.05	−.03	1.00												
Traditional advertising	.00	.02	.03	.00	−.05	−.02	.00	.06	−.05	.01	−.01	.02	−.05	−.02	.00	.11	.02	.03	−.02	−.07	.00	1.00											
Internet advertising	−.01	.01	.00	−.01	−.13	−.03	−.02	.02	.00	−.03	.00	−.03	−.04	−.01	.03	.02	.01	−.02	−.04	.02	−.01	−.12	1.00										
Direct to consumer	.04	−.02	.01	.02	−.01	−.01	−.03	.04	−.06	−.04	−.04	−.01	−.02	−.03	−.03	.05	.10	.00	−.06	−.06	−.02	−.15	−.16	1.00									
Social media	.05	.01	.00	−.01	−.05	−.02	−.02	.00	.00	−.02	−.02	−.12	−.12	−.02	−.01	−.02	.07	−.04	−.04	−.04	.04	−.12	−.13	.16	1.00								
Price promotion	−.05	−.01	−.01	.02	.04	.02	.01	−.03	.02	−.02	.04	.05	.04	.04	.00	.01	−.12	.03	.04	.04	.04	−.08	−.09	−.11	−.08	1.00							
Pricing	−.01	.01	−.02	−.01	.03	.03	.04	−.02	.05	.01	.03	.03	.07	.00	−.01	−.01	−.08	.06	.05	.01	−.03	−.10	−.11	−.13	−.10	−.07	1.00						
New product development	−.04	.00	.02	−.05	.20	.04	.07	−.04	.05	.05	.06	.04	.11	.00	−.03	−.04	−.10	−.01	.08	.06	.03	−.12	−.13	−.16	−.12	−.09	−.11	1.00					
Sales force	−.01	−.01	−.02	−.02	.05	.05	.02	−.09	.05	.05	.03	.02	.04	.04	−.01	−.06	−.01	−.03	.02	.06	−.02	−.11	−.12	−.15	−.12	−.08	−.10	−.12	1.00				
Distribution	−.01	.04	.01	−.02	.00	.05	.06	−.03	−.01	.03	.05	.02	.08	.01	.04	−.03	−.11	.00	.05	.06	−.01	−.07	−.07	−.09	−.07	−.05	−.06	−.07	−.06	1.00			
Marketing metrics	.19	.06	.04	−.12	.17	.26	.25	−.05	.07	.07	.07	.00	.06	.06	.09	.13	−.12	−.07	.10	.06	.16	.02	.05	−.03	.01	−.07	.03	.14	−.06	−.01	1.00		
Financial metrics	.04	.13	.07	−.14	.21	.33	.30	−.08	.10	.07	.22	.07	.18	.14	.07	.10	−.25	.00	.11	.10	.13	−.03	.02	.03	−.17	.03	.10	.14	.08	.04	.54	1.00	
Performance	.17	.08	.00	−.09	.28	.15	.17	−.01	−.04	.05	.06	.10	.07	.03	.28	.07	−.09	−.10	.00	.16	.06	−.11	−.02	.00	−.01	.01	.04	.07	.04	.04	.21	.19	1.00

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