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A meta-analysis of the relationship between market orientation and business performance: evidence from five continents

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Abstract

Market orientation has emerged as a significant antecedent of performance and is presumed to contribute to long-term success. To investigate the impact of this predictor, a meta-analysis was conducted and findings suggest that the relationship between market orientation and business performance is positive and consistent worldwide. One of the unique contributions of this research is a sample that includes studies conducted in 23 countries spanning five continents. The moderating effects of business objective (profit, not-for-profit), industry type (manufacturing, service), socioeconomic development [gross domestic product (GDP) per capita, Human Development Index (HDI)], and Hofstede's individualism cultural dimension] are examined. Stronger correlations between market orientation and business performance were found for not-for-profit compared to profit firms and service compared to manufacturing firms.

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1. Introduction

In today's highly competitive global markets, managers seek to improve organizational effectiveness by identifying organizational metrics linked to business performance. Market orientation is one such metric that has emerged as a significant predictor of performance and is presumed to contribute to long-term success (Deshpandé & Farley, 1999). Market orienta-

tion is heavily influenced by the marketing concept (Drucker, 1954; McCarthy, 1960; McKitterick, 1957), and is the cornerstone of the marketing management and marketing strategy paradigms (Hunt, 2002). The Marketing Science Institute has recognized the importance of market orientation for many years, and today it remains a research priority. Over time, scholars have acknowledged that market orientation research has significantly influenced the development of marketing knowledge (Biggadike, 1981; Day, 1999; Kohli & Jaworski, 1990).

Scholars agree that meta-analysis is an important tool for conducting marketing research across different countries (Deshpandé & Farley, 1999). Early

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Table 1
Study-level coding

Study	Sample size	IND ^a	ORG ^b	Country	IND ^c	MO Scale ^d		PERF Scale ^e		ES ^f
						Type	α	Type	α	
Appiah-Adu (1998a)	74	X	P	Ghana	NA	X	0.740	S	NR ^g	0.230
Baker and Sinkula (1999)	411	X	X	USA	91	M	0.889	S	0.790	0.297
Balakrishnan (1996)	139	M	X	USA	91	K	NR ^g	S	NR ^g	0.150
Bhuiyan (1998)	115	M	P	Saudi Arabia	38	M	0.870	S	0.830	0.188
Caruana, Pitt, and Berthon (1999)	131	S	P	UK	89	M	0.780	S	0.790	0.143
Caruana, Ramaseshan, and Ewing (1997)	134	S	N	Australia	90	M	0.880	S	0.880	0.580
Caruana, Ramaseshan, and Ewing (1998a)	84	S	X	Australia	90	M	0.810	S	NR ^g	0.520
Caruana, Ramaseshan, and Ewing (1998b)	171	S	N	Australia	90	M	0.700	S	0.870	0.620
Caruana, Ramaseshan, and Ewing (1999)	171	S	N	Australia	90	M	0.889	S	0.880	0.606
Cervera, Mollá, and Sánchez (2001)	399	S	N	Spain	51	M	NR ^g	S	NR ^g	0.337
Dawes (2000)	93	X	P	Australia	90	M	0.857	X	NR ^g	0.198
Deshpandé and Farley (1998)	82	X	P	USA, Germany	82	X	0.710	S	NR ^g	0.430
Dobni and Luffman (2000)	210	S	P	USA	91	X	0.785	S	NR ^g	0.184
Doyle and Wong (1998)	344	X	P	UK	89	M	0.790	S	0.80	0.360
Duncan (2000)	173	S	N	USA	91	M	NR ^g	O	NR ^g	0.196
Farrell (2000)	268	X	P	Australia	90	K	0.900	S	0.750	0.326
Gray, Matear, Boshoff, and Matheson (1998)	490	X	P	Australia	90	X	0.696	X	NR ^g	0.184
Gray, Matear, and Matheson (2000)	21	S	P	Australia	90	M	NR ^g	S	NR ^g	0.469
Grewal and Tansuhaj (2001)	120	X	P	Thailand	20	M	0.773	O	0.930	0.020
Han, Kim, and Srivastava (1998)	134	S	P	USA	91	K	0.803	X	0.750	0.140
Harris and Ogbonna (2001)	322	X	P	UK	89	K	0.926	X	0.90	0.326
Hooley et al. (2000)	1396	X	P	Poland, Slovenia, Hungary	67	K	0.960	X	0.80	0.169
Hult and Ketchen (2000)	181	X	P	USA	91	K	0.820	O	NR ^g	0.142
Jaworski and Kohli (1993)	136	X	P	USA	91	M	0.783	S	0.830	0.500
Langerak (2001)	72	M	P	Netherlands	80	X	0.905	S	0.850	0.290
Langerak, Hutlink, and Robben (2000)	126	M	P	Netherlands	80	X	0.813	S	0.880	0.290
Matsuno and Mentzer (2000)	364	M	P	USA	91	M	0.840	O	NR ^g	0.326
Matsuno, Mentzer, and Rentz (2000)	275	M	P	USA	91	M	0.750	X	NR ^g	0.349
Mavondo (1999b)	146	M	P	Zimbabwe	NA	X	0.912	O	NR ^g	0.240
Narver and Slater (1990)	371	X	P	USA	91	K	0.881	S	NR ^g	0.345
Ngai and Ellis (1998)	73	M	P	Hong Kong	25	K	0.854	S	0.850	0.270
Ngansathil (2001)	147	M	P	Thailand	20	K	NR ^g	X	NR ^g	0.154
Oczkowski and Farrell (1998)	237	M	P	Australia	90	X	0.895	S	0.820	0.249
	190	M	P	Australia	90	X	0.895	S	0.780	0.307
Pelham (1997)	160	M	X	USA	91	X	0.880	S	0.780	0.280
Pelham (1999)	229	M	P	USA	91	X	0.820	S	0.840	0.339
Pelham (2000)	235	M	P	USA	91	X	NR ^g	S	NR ^g	0.347
Pelham and Wilson (1996)	68	X	X	USA	91	X	0.920	S	0.770	0.210
Pitt, Caruana, and Berthon (1996)	130	X	P	UK	89	M	0.880	S	0.780	0.318
	192	X	P	Malta	NA	M	0.838	S	0.750	0.296
Pulendran, Speed, and Widing (2000)	105	M	P	Australia	90	M	0.870	S	NR ^g	0.568
Raju and Lonial (2002)	293	S	P	USA	91	M	0.732	X	0.790	0.225
Raju, Lonial, and Gupta (1995)	176	S	X	USA	91	M	NR ^g	X	NR ^g	0.346
Saini et al. (2002)	117	X	P	USA Canada	86	X	0.910	S	NR ^g	0.190
Selnes, Jaworski, and Kohli (1996)	222	M	P	USA	91	M	0.890	X	0.830	0.235
	237	M	P	Netherlands, Norway, Sweden	71	M	0.890	X	0.670	0.165
Shoham and Rose (2001)	101	M	P	Israel	54	M	0.827	O	0.820	0.300
Siguaw and Honeycutt (1995)	268	M	P	USA	91	K	NR ^g	S	NR ^g	-0.170
Sin et al. (2000)	210	X	P	China	53	K	0.858	S	0.870	0.135

Table 1 (continued)

Study	Sample size	IND ^a	ORG ^b	Country	IND ^c	MO Scale ^d		PERF Scale ^e		ES ^f
						Type	α	Type	α	
Slater and Narver (1994)	107	M	P	USA	91	K	0.800	S	0.670	0.282
Slater and Narver (2000)	53	X	P	USA	91	K	0.770	S	NR ^g	0.362
Soehadi, Hart, and Tagg (2001)	159	M	P	Indonesia	NA	M	0.760	S	0.730	0.190
Stone and Wakefield (2000)	224	M	P	USA	91	M	0.820	S	NR ^g	0.256
Subramanian and Gopalakrishna (2001)	162	X	X	India	48	K	0.950	S	NR ^g	0.454
Wood, Bhuian, and Kiecker (2000)	237	S	N	USA	91	M	0.890	S	0.720	0.303
Yau, McFetridge, Chow, Lee, Sin, and Tse (2000)	156	M	X	Hong Kong	25	K	0.890	S	0.910	0.373
	252	S	X	Hong Kong	25	K	0.890	S	0.910	0.385
	150	S	X	Hong Kong	25	K	0.890	S	0.910	0.362

^a Industry: M = Manufacturing, S = Service, X = Mixed.

^b Organization Objective: P = Profit, N = Not-for-Profit, X = Mixed.

^c National Cultural Dimension: IND = Individualism. Index obtained from Hofstede (1997) and/or Spector et al., (2001).

^d Market Orientation Scale-M = MARKOR, K = MKTOR, X = Mixed.

^e Performance Scale: O = Objective, S = Subjective, X = Mixed.

^f Reported r or r equivalent (e.g., transformed from t -value, F -value, χ^2).

^g Not reported.

studies of the relationship between market orientation and business performance are limited to research conducted in the United States and, to a lesser extent, the United Kingdom (Bhuian, 1998; Deshpandé & Farley, 1999; Subramanian & Gopalakrishna, 2001). Empirical studies incorporating samples from multiple countries are sparse (e.g., Deshpandé, Farley, & Webster, 1997; Hooley et al., 2000; Saini, Johnson, & Grewal, 2002). Efforts aimed at studying the relationship between market orientation and business performance across countries have been hampered by methodological differences (Mavondo, 1999a; Shoham & Rose, 2001). Moreover, international studies in marketing most often compare developed, rather than developing countries. Marketing scholars recognize this limitation and called for the extension of research to an international context (Deshpandé, Farley, and Webster, 1997; Homburg & Pflesser, 2000; Kohli, Jaworski, & Kumar, 1993). This meta-analysis serves to bridge this gap in the literature by investigating studies of the relationship between market orientation and business performance conducted worldwide.

The notion that market orientation has a positive impact on business performance is well documented in scholarly research (e.g., Baker & Sinkula, 1999; Harris, 2001; Matsuno & Mentzer, 2000). Although a few studies report a negative or non-significant relationship (e.g., Grewal & Tansuhaj, 2001; Han, Kim, & Srivastava, 1998; Siguaw & Honeycutt, 1995), over-

whelming evidence shows a positive relationship between market orientation and business performance (Table 1). This study seeks to go beyond the assessment of the existence and the direction of this relationship by investigating two important research questions: (1) What is the strength of the relationship between market orientation and business performance? (2) What is the impact of contextual and methodological moderators on this relationship? For this purpose, a meta-analysis, which is appropriate to integrate research (Deshpandé & Farley, 1998), was conducted. Fifty-three (53) empirical studies representing an overall sample size of 12,043 respondents from 23 countries, across five continents, were included. This is the first such study to be undertaken.

2. Market orientation and business performance

Two streams of research have emerged in the last decade (Gray, Matear, Boshoff, and Matheson, 1998). First, Narver and Slater (1990) defined market orientation in terms of culture and related it to the fundamental characteristics of the organization (e.g., customer orientation, competitor orientation, and inter-functional coordination), although they operationalized market orientation in terms of employee behavior. Second, Kohli and Jaworski's (1990) approach defined market orientation in terms of organi-

zational behaviors (e.g., generation of information, dissemination of information, and responsiveness to information). Mavondo and Farrell (2000) noted that the cultural and behavioral approaches share the notion that the consumer is central in the manifestation of market orientation and stakeholders shape the needs and expectations of consumers. In addition, Deshpandé and Farley (1998) offered a conceptualization that includes both perspectives and emphasized a behavioral approach that defined market orientation as the set of cross-functional processes and activities directed at creating superior value for customers through continuous needs assessments.

The notion that market orientation affects business performance is a matter of extensive research (e.g., Kohli & Jaworski, 1990; Matsuno & Mentzer, 2000; Narver & Slater, 1990). Although some studies suggest a negative or non-significant relationship, most findings indicate a positive relationship between market orientation and business performance (e.g., Deshpandé & Farley, 1998; Matsuno & Mentzer, 2000; Slater & Narver, 2000). Furthermore, Doyle and Wong (1998) found market orientation to be the second most important driver, differential advantage being the first, of business performance. Accordingly:

H1. There will be a positive relationship between market orientation and business performance.

3. Potential moderators

Arthur, Bennett, and Huffcutt (2001, p. 85) define a moderator variable in meta-analysis as “any variable that by its inclusion in the analysis accounts for, or helps explain, more variance than would otherwise be the case.” Potential moderators are identified and coded based on their theoretical justification and explanatory power of the between-study variance. The moderators of the relationship between market orientation and business performance may be classified into contextual and measurement.

3.1. Contextual moderators

3.1.1. Cultural dimensions

The importance of culture in marketing research cannot be understated. First, international marketing

managers are concerned with “how to increase the market orientation and thereby performance of their transnational organizations” (Nakata & Sivakumar, 2001, p. 255). Second, during the next decades, awareness of cultural differences will be crucial for researchers and managers to gain a better understanding of market behavior (Luna & Gupta, 2001). Finally, cultural values shape interpretation and facilitate or impede adoption and implementation of the marketing concept, which is at the heart of market orientation (Nakata & Sivakumar, 2001).

Hofstede (1997) argues that there are four dimensions of national culture: individualism/collectivism, power distance, masculinity/femininity, and uncertainty avoidance. Of these dimensions, individualism/collectivism (IDV) has been the prevailing approach (e.g., Robert & Wasti, 2002). IDV has been the most useful and parsimonious explanation of cross-cultural differences in attitudes and behaviors (e.g., Cho, Kwon, Gentry, Jun, & Kropp, 1999; Heuer, Cummings, & Hutabarat, 1999). Moreover, this dimension is the only one of Hofstede’s cultural dimensions with acceptable levels of reliability and unidimensionality (e.g., Spector et al. (2001); Triandis, 1995).

Individuals from individualistic countries (e.g., United States, Great Britain) are self-oriented and self-actualization is their ultimate goal. In an individualistic culture, the employer–employee relationship is based on mutual advantage and tasks prevail over relationships (Hofstede, 1997). By contrast, individuals from collectivistic cultures (e.g., China, Hong Kong) tend to subordinate personal preferences and priorities to those of the group; harmony and consensus is their ultimate goal. In collectivistic cultures, relationships are a matter of moral foundation, mutual trust, and felt obligations (Kao & Sek-Hong, 1997).

It has been shown that culture impacts an individual’s work behavior, which in-turn influences business performance (e.g., Schein, 1985; Steers & Porter, 1991). Marketing oriented companies’ strategies focus on how external market wants, needs, and demands can be met. Research shows that when the employee’s values fit with corporation strategies, business performance is enhanced (e.g., Steers & Porter, 1991). Individuals from collectivistic, more so than those from individualistic cultures, embrace

external stakeholders' needs, because they subordinate their personal goals to those of others (e.g., customers, suppliers, co-workers). Furthermore, market-oriented strategies should be more effective in collectivistic rather than individualistic countries, because these customers value business relationships based on mutual trust and manifest felt obligations. Therefore:

H2. The relationship between market orientation and business performance will be stronger in collectivistic rather than individualistic cultures.

3.1.2. Profit vs. not-for-profit objectives

Organizations perform marketing-like activities “that go considerably beyond the selling of toothpaste, soap, and steel” (Kotler & Levy, 1969, p. 78). Kotler's (1972) broadening of the marketing concept proposed that marketing is relevant to different business objectives (profit, not-for-profit) and different industry types (service, manufacturing). Mainstream research considers mostly profit organizations, although research of not-for-profit organizations has gained considerable attention in the last decade. Research of the relationship between market orientation and business performance of not-for-profit organizations includes public sector (Caruana, Ramaseshan, and Ewing, 1997, 1999), hospitals (Duncan, 2000; Wood, Bhuian, and Kiecker, 2000), local government (Cervera, Mollá, and Sánchez, 2001), and universities (Caruana, Ramaseshan, and Ewing, 1998a).

Although researchers have long recognized that market-oriented strategies have a positive impact on the performance of not-for-profit organizations (e.g., Kotler & Andreasen, 1987; Cervera, Mollá, and Sánchez, 2001), market-oriented strategies remain less familiar to managers of not-for-profit compared to profit organizations (Kotler & Andreasen, 1987). Research indicates that firms implementing business strategies unusual in normal industry practices are likely to achieve a superior financial performance (e.g., Pelham, 1997). Managers of not-for-profit organizations may take advantage of the industries lack of familiarity with the market orientation concept and use it as a source of sustainable competitive advantage that results in improved business performance.

A second factor that offers support to the moderating effect of business objective (profit, not-for-profit) on the relationship between market orientation and business performance is the amount of interaction between employees and customers; not-for-profit experiencing a greater amount than profit (Kotler & Andreasen, 1987). Each employee–customer interaction gives the firm an opportunity to apply its market-oriented strategies, which in-turn impacts business performance. For example, employees of not-for-profit organizations, such as nurses in public hospitals and policemen come into regular contact with their customers. Therefore, not-for-profit organizations will leverage more on their market orientation strategies than profit organizations. Accordingly:

H3. The relationship between market orientation and business performance will be stronger in not-for-profit compared to profit organizations.

3.1.3. Services vs. manufacturing

Services have become the primary sector of the world's economy, accounting for approximately 64% of the world's estimated 2002 gross domestic product, GDP (Central Intelligence Agency, 2002). The 30 members of the Organization for Economic Cooperation and Development (OECD), which represent the World's larger economies, experienced an average increase in service sector participation of 8.3% between the years 1990 and 2000 (OECD, 2002). The importance of the service sector contributes to the increased interest in services marketing (Caruana, Ramaseshan, and Ewing, 1999). The continuing shift from manufacturing to service extends to research of the relationship between market orientation and business performance (e.g., Pitt, Caruana, and Berton, 1996; Van Egeren & O'Connor, 1998). This is consistent with the marketing concept, a philosophy that is not product/service specific.

In a recent editorial article that proposes a research agenda for investigating market orientation strategies of service firms, Gray and Hooley (2002) indicate that there is equivocal evidence as to the moderating effect of industry type (service vs. manufacturing) on the relationship between market orientation and business performance. However, Gray and Hooley (2002) argue that this relationship should be stronger for service compared to manufacturing firms, due to the

greater dependence on person-to-person interactions that are predominant in the service sector (e.g., Singh, 2000; McNaughton, Osborne, & Imrie, 2002). Given that service organizations have more customer interactions than manufacturing firms, service companies will leverage more on their market orientation strategies than manufacturing organizations. Hence:

H4. The relationship between market orientation and business performance will be stronger for service compared to manufacturing organizations.

3.2. Measurement moderators

Two of the most extensively used measures of market orientation are the “MARKOR” scale developed by Kohli, Jaworski, and Kumar (1993) and the “MKTOR” scale developed by Narver and Slater (1990) (Ngai & Ellis, 1998). Research indicates that although both scales are theoretically consistent, in general MKTOR outperforms MARKOR for explaining variance in business performance (Oczkowski & Farrell, 1998). Conceptual and statistical factors may explain a stronger relationship between market orientation and business performance when MKTOR rather than MARKOR is used. First, MKTOR has a more direct link to business performance than MARKOR, because it fully captures the notion of providing customer value and superior business performance (Narver & Slater, 1990; Oczkowski & Farrell, 1998). Second, MARKOR only deals with information generation, information dissemination, and responsiveness as to customer needs without considering other external forces (i.e., competitors); hence undermining the relationship with performance. Third, when referring to the attenuated effect size, MARKOR has a lower reliability compared to MKTOR. This lower reliability may underestimate the true relationship between market orientation and business performance (Oczkowski & Farrell, 1998). In the studies included in this meta-analysis, the weighted average Cronbach’s α for MARKOR was .83, compared to .91 for the MKTOR scale. Hence:

H5. The relationship between market orientation and business performance will be stronger when market orientation is measured using the MKTOR scale rather than the MARKOR scale.

Business performance has been investigated by both subjective (e.g., self-reported) and objective (e.g., ROI, market share, trend analysis) measures. The distinction between objective and subjective measures of business performance is blurred by the human element. Although most objective measures are based on financial data, the reporting of financial information may be subjectively constructed. For example, some financial data is subject to managerial decisions such as evaluation of investments and assets, reporting of liabilities, costing, and forecasting. Regardless of this characteristic of objective measures, researchers and practitioners continue to discriminate between subjective and objective measures.

Although both objective and subjective scales have been used in marketing research, the two scales have not produced identical findings (Bommer, Johnson, Rich, Podsakoff, & MacKenzie, 1995; Harris, 2001). The difficulty in obtaining objective data contributes to the wide use of subjective measures (e.g., Dawes, 1999; Harris, 2001). The use of subjective measures is substantiated on the basis that objective measures are “only as reliable as the product market definitions that underlie them” (Ngai & Ellis, 1998, p. 128) and that objective measures have not been found to be more predictive than subjective measures (Hoffman, Nathan, & Holden, 1991). The discrepancy between objective and subjective scales has been recognized in market orientation research. This is evident in the work of Sin, Tse, Yau, Lee, Chow, and Lau’s (2000) call for future research of the moderating effect of subjective and objective measures on the relationship between market orientation and business performance.

Objective measures are intended to directly record behaviors or outcomes and are frequently assumed to be free of systematic bias and random error (Bommer et al., 1995). There is a danger of obtaining a false positive (i.e., Type I error) when using subjective rather than objective measures (Dawes, 1999). Consequently, subjective measures of business performance may cause the correlation coefficient of the relationship between market orientation and business performance (i.e., effect size) to be artificially inflated. Another plausible explanation of the moderating effect of the measure of performance is the various conceptualization of performance: customer retention, new product success, sales growth, return on invest-

ment, and overall performance (Oczkowski & Farrell, 1998). Most of the studies that report objective measures of performance rely on only one of these elements. On the other hand, management evaluations of performance (i.e., subjective measures) are more holistic evaluations and may capture more than a single element of performance. Accordingly:

H6. The relationship between market orientation and business performance will be stronger when business performance is measured using subjective rather than objective measures.

4. Methodology

A large variety of marketing parameters have been meta-analyzed in the marketing literature (Appendix A), including research in advertising, channels, consumer behavior, research methods, new product development, diffusion of innovation, pricing, sales and strategy (Appendix A). Meta-analysis research in strategy is sparse and limited to the parameters of market share, profitability, and order of entry into the market (e.g., Szymanski, Bharadwaj, & Varadarajan, 1993). Although extensive research of market orientation exists, a meta-analysis of this parameter has not yet been undertaken. The market orientation and business performance link is a new and important relationship to be meta-analyzed.

Meta-analysis is a quantitative method of synthesizing empirical evidence across a collection of related studies. Meta-analysis offers advantages over conventional synthesis analyses (i.e., descriptive synthesis of literature, historical accounts of research, narrative forms of research findings) (Lipsey & Wilson, 2001), because it includes statistical analyses that detect effects or relationships that are obscured in other approaches.

4.1. Eligibility criteria

The study eligibility criteria serve three major purposes (Lipsey & Wilson, 2001). First, the characteristics of the criteria create an explicit population from which research studies are identified and examined. Second, the criteria offer a straightforward communication of the research domain of interest to consumers

of the meta-analysis. Finally, the criteria serve as an essential guidance to the process of selecting or rejecting candidates for inclusion in the study. Published and unpublished studies conducted between 1/1/1990 and 6/30/2002, available in English, and reporting an effect size between market orientation (using MARKOR and/or MKTOR) and business performance (subjective and/or objective measures) were eligible for inclusion in the study (Table 1).

4.2. Coding schema

Data was coded for sample size, effect size, and potential moderators (i.e., industry type, organizational objective, country, scales used to measure market orientation and business performance) (Table 1). The 187 potential studies resulting from the literature searches were divided among the three researchers. Each researcher independently coded the assigned studies for sample size, effect size and moderating variables. Next, the studies were redistributed and a different researcher recoded the studies. Inconsistencies in coding were resolved through investigation, analysis, and consensus.

4.3. Literature search

Computer-based and manual searches of published empirical studies were conducted. The online databases searched include ABI/Inform, EMERALD, First-Search ECO, IDEAL, LEXIS/NEXIS Academic Universe, Kluwer, and JSTOR. The searches were conducted using the following key words: market orientation, marketing concept, performance, MARKOR and MKTOR. Wildcard symbols (e.g., *, ?) were used to account for multivariations of the key words. Dissertations in North America and Europe were located using the UMI database. Manual searches were conducted of journal articles' references identified through the online database search. Manual searches of the *Journal of Marketing*, *Journal of Marketing Research*, *Journal of the Academy of Marketing Science*, *Journal of International Marketing*, and *International Journal of Research in Marketing* from January 1990 through June 2002 were also conducted. A call for working papers, forthcoming articles, and unpublished research was posted on ELMAR (3000+ members) and DocSig (≈ 900 members), which reached

both faculty and PhD students in marketing and other business related disciplines.

4.4. Independent samples

To assure mutual exclusivity, multiple studies by author(s) were reviewed and the sample for each compared across journal articles, proceedings, dissertations, and working papers. When overlapping or duplicate samples were detected, the sample reporting the more useable information was retained for the meta-analysis and the other samples were excluded.

4.5. Model

The random effects model has two advantages over the fixed effects model. First, the random effects model is a conservative approach (i.e., the confidence intervals about the mean effect size are larger when the random effects model rather than the fixed effects model is used) to meta-analysis and is suited for relatively under-studied relationships (Overton, 1998). Second, due to its larger confidence intervals, the random effects model is not subject to Type I bias in significance test of mean effect sizes and moderator variables (Hunter & Schmidt, 2000).

The effect size of each study was adjusted using the weighted inverse variance, w_i . To calculate the mean effect size of the groups and confidence interval around that mean (moderators), an analog to analysis of variance was conducted to test categorical moderators (MKTOR/MARKOR, profit/not-for-profit, services/manufacturing). In addition, a weighted least square multiple regression model that included all categorical moderators as independent variables, and the disattenuated effect size as a dependent variable was estimated. As prescribed by Farley and Lehmann (1986), this model can assess the total impact of the categorical moderators on the disattenuated effect size, and possible multicollinearity of the independent variables. Finally, three independent simple weighted least squared regression models were conducted to test continuous moderators (IDV, GDP_{PC}, and HDI).

The analog ANOVA technique groups the effect sizes into categories defined by the moderators and tests for between and within sample differences for each category. The Q -statistic is used to measure the

between-and within-sample difference, and as such is similar to an F -test in a regular ANOVA. The analog ANOVA partitions the total Q -statistic into the portion explained by the categorical variable and the residual pooled within groups (Lipsey & Wilson, 2001).

4.6. Attenuation

To adjust for unreliability of measures, effect sizes were disattenuated based on the argument that statistical artifacts are independent of effects of moderating variables (Arthur, Bennett, and Huffcutt, 2001; Hunter & Schmidt, 1990; Nunnally & Bernstein, 1994). Although other meta-analysts argue that alternative approaches may be appropriate for adjustment of measurement error (James, Demaree, Mulaik, & Ladd, 1992), substantial support for the Hunter and Schmidt's (1990) adjustment for measurement error is evident in both marketing (e.g., Henard & Szymanski, 2001; Rich, Bommer, MacKenzie, Prodsakoff, & Johnson, 1999) and psychology (e.g., Glass, McGaw, & Smith, 1981; Nunnally & Bernstein, 1994; Rosenthal, 1984). Failure to consider reliability tends to underestimate the true relationship between variables (Caruso, 2000). The authors of this meta-analysis consider the disattenuated mean effect size the best estimator of the relationship between market orientation and business performance, as prescribed by Lipsey and Wilson (2001). Effects of range restriction were not analyzed, because the research participants were not selected on the basis of their scores on the research instruments of interest.

5. Findings and discussion

5.1. Sample description

The literature search generated 187 manuscripts comprised of 183 refereed publications, 3 dissertations, and 1 proceeding. Through the coding and recoding process, 134 studies not meeting the eligibility requirements were eliminated. The remaining 53 studies, drawn from 27 publications and 3 dissertations, produced 59 effect sizes. A review to assure mutual exclusivity of samples detected two overlapping studies; one study was eliminated yielding 58 useable effect sizes.

Two researchers coded each eligible study independently. For each of the two coders, a total of 522 data entries were recorded resulting from nine variables (sample size, industry, organizational objective, country, type of market orientation (MO) scale, α of MO scale, type of performance scale, α of performance scale, effect size) times the 58 effect sizes. The 522 data entries were compared and 28 inconsistencies were resolved by further investigation. The interrater reliability for this process was .946.

The total sum of all samples equals 12,043 with study sample sizes range from 21 to 1396 and a mean of 207.6. The studies originated from 23 countries (Australia, Canada, China, Denmark, Germany, Ghana, Hong Kong, Hungary, India, Indonesia, Israel, Malta, Netherlands, Norway, Poland, Saudi Arabia, Slovenia, Spain, Sweden, Thailand, United Kingdom, United States, and Zimbabwe) spanning five continents. A profile of the organizational characteristics shows a fairly balanced distribution between manufacturing and service. The majority of the respondents were top-level executives from large, profit oriented organizations. Market orientation was mostly measured using the MARKOR scale and business performance was primarily subjectively assessed (Table 1).

5.2. Outlier analysis

One outlier, 3.5 standard deviations from the mean, was detected ($n = 268$, effect size = $-.17$). Deletion of the outlier would result in a higher correlation between the two constructs. Although there is no consensus among scholars on eliminating or retaining outliers, a conservative approach was adopted and the outlier was retained in the study. A post hoc analysis was conducted by excluding the outlier from the sample and no differences were found as to the results of the hypotheses testing.

5.3. Homogeneity

In a fixed effects model, an observed effect size is an estimation of the population effect with random error that stems only from the chance factors associated with subject-level sampling error (homogeneous distribution of the effect size is assumed). The random effects model assumes a heterogeneous distribution of the

effect size. The variance associated with each effect size distribution has two components: one associated with the random variance due to error and another associated with systematic variance due to moderators (Overton, 1998).

A homogeneity test to detect differences between studies due to situational factors was found to be significant at $\alpha = .05$ ($Q = 389.9$). The Q -statistic is distributed as a χ^2 with $k - 1$ ($k = 58$) degrees of freedom and is significant when its absolute value is larger than the χ^2 ($k - 1, \alpha = .05$) statistic. “A significant Q rejects the null hypothesis of homogeneity and is evidence that the variability among the effect sizes is greater than is likely to have resulted from subject level sampling error alone” (Lipsey & Wilson, 2001, p. 117). The significant Q -statistic demonstrates that the effect size distribution is heterogeneous. Such a composition of effect sizes suggests that the population varies by subject level sampling plus other sources of variability (Lipsey & Wilson, 2001). The theoretical framework and statistical analysis (Q -statistic) bring forward the execution of a random effects model. This model accounts for a random effect variance component of .029 for the disattenuated effect size (.018 for attenuated effect size), which is the between subject variance explained by the model.

5.4. Reliability of measures

The reported reliability for the market orientation and business performance scales range from .70 to .96 and .67 to .93, respectively. Thus, on average the scales used for measuring the relationship between market orientation and business performance showed a relatively strong internal consistency (Nunnally & Bernstein, 1994). The average reliability index weighted by sample size for the market orientation measures was .83 for MARKOR and .91 for MKTOR. This index was .88 for subjective measures of performance, and .81 for objective measures of performance.

5.5. Meta-analysis results

5.5.1. Market orientation–business performance relationship

Using the statistical analyses developed by Lipsey and Wilson (2001), the means and confidence inter-

vals were calculated using the sample size and effect size (Table 2). Findings revealed that the disattenuated weighted mean effect size (Pearson's correlation coefficient) of the relationship between market orientation and business performance was .35; the 95% confidence interval about the mean was .33–.37. Thus, the degree of market orientation of a firm explains about 12% of the variance in business performance. The upper and lower bounds of the 95% confidence interval are positive; hence, H1 is supported and the relationship between market orientation and business performance is positive.

To assure that the disattenuated and observed weighted mean effect sizes are consistent, a comparison of the two statistics was computed and revealed no substantive differences as to results of testing H1 (Table 2). These findings are in line with previous

research that suggests a clear positive relationship between market orientation and business performance (e.g., Baker & Sinkula, 1999; Deshpandé & Farley, 1998; Harris, 2001; Matsuno & Mentzer, 2000; Slater & Narver, 2000). Furthermore, at $\alpha=.05$, 1079 file drawer cases (unpublished studies) reporting null results would be needed to make the relationship between market orientation and business performance non-significant (Table 2).

5.6. Contextual moderators

5.6.1. Cultural dimensions

A weighted least square regression model is appropriate for investigating the moderating effect of continuous variables (Lipsey & Wilson, 2001). A model with disattenuated effect size as the dependent vari-

Table 2
Comparison of effect size and confidence intervals

Description		Attenuation	Mean ES	– 95% CI	+ 95% CI	Fail safe N^a
Overall		Disattenuated	0.352	0.334	0.370	1079
		Observed	0.285	0.267	0.303	
<i>Scale moderators</i>						
Market orientation	MKTOR	Disattenuated	0.281	0.251	0.310	152
		Observed	0.231	0.201	0.260	
	MARKOR	Disattenuated	0.424	0.396	0.451	356
		Observed	0.339	0.313	0.366	
	Mixed	Disattenuated	0.326	0.286	0.366	99
		Observed	0.266	0.226	0.306	
Business performance	Objective	Disattenuated	0.289	0.229	0.349	42
		Observed	0.233	0.173	0.293	
	Subjective	Disattenuated	0.406	0.382	0.429	616
		Observed	0.328	0.305	0.352	
	Mixed	Disattenuated	0.269	0.237	0.301	82
		Observed	0.217	0.185	0.249	
<i>Contextual moderators</i>						
Business objective	Profit	Disattenuated	0.308	0.287	0.329	690
		Observed	0.248	0.227	0.268	
	Not-for-profit	Disattenuated	0.554	0.499	0.609	49
		Observed	0.452	0.397	0.507	
	Mixed	Disattenuated	0.430	0.383	0.477	48
		Observed	0.352	0.305	0.399	
Industry	Service	Disattenuated	0.449	0.411	0.487	117
		Observed	0.368	0.330	0.406	
	Manufacturing	Disattenuated	0.327	0.297	0.358	240
		Observed	0.260	0.229	0.291	
	Mixed	Disattenuated	0.320	0.293	0.347	245
		Observed	0.260	0.233	0.288	

^a Attenuated at $\alpha = 0.05$.

able and IDV (Hofstede, 1997) as the independent variable was tested.

$$ES_{MO-PERF} = \beta_0 + \beta_1 IND + \varepsilon$$

The model was non-significant at $\alpha=0.05$ (F -value=.85), suggesting that individualism/collectivism does not explain additional variance across effect sizes. The model using the observed effect sizes (attenuated) rendered similar results. Individualism/collectivism does not influence the strength of the relationship between market orientation and business performance. Therefore, H2 is not supported. This finding is consistent with Deshpandé, Farley, and Webster (2000) who found no difference across countries in the relationship between market orientation and business performance, bringing forward evidence of a relationship that is not cultural specific. Deshpandé, Farley, and Webster (2000) tested five countries residing at polar ends of the individualism/collectivism continuum and found no significant differences in the relationship between market orientation and business performance.

5.6.1.1. GDP per capita. A post hoc investigation of the moderating effect of country was conducted. The notion concerning the use of country as a moderator is that differences across countries are the result of underlying differences in key variables (Farley & Lehmann, 2001). Two widely accepted key variables that explain country differences are gross domestic product per capita (GDP_{PC}) and the United Nations Human Development Index (HDI) (Human Development Report, 2001).

The GDP_{PC} data used in the study is based on the United Nations Human Development Indicators Report (United Nations, 2001), which covers 118 countries. A weighted regression conducted to detect the significance of GDP_{PC} on the relationship between market orientation and business performance was not significant at $\alpha=.05$ (F -value = 1.16). The findings imply that GDP_{PC} does not explain additional variance in the mean effect size. The insignificance of the moderating effect of GDP_{PC} indicates that the relationship between market orientation and business performance is generalizable across countries of varying GDP_{PC} .

5.6.1.2. Human development index (HDI). The HDI is based on life expectancy at birth, adult literacy,

GDP_{PC} , and combined primary, secondary, and tertiary gross enrollment. A weighted regression conducted to detect the significance of HDI on the relationship between market orientation and business performance was not significant at $\alpha=.05$ (F -value=1.99). The findings suggest that HDI, like GDP_{PC} , does not explain additional variance in the mean effect size. The insignificance of the moderating effect of HDI, as well as individualism and GDP_{PC} , suggests that the relationship between market orientation and business performance is generalizable across countries of different stages of socioeconomic development.

5.6.2. Profit vs. not-for-profit objectives

The sample was comprised of mostly profit organizations (42) and studies conducted in the United States (16). The not-for-profit organizations accounted for six of the effect sizes with half of the studies conducted in Australia. The relationship between market orientation and business performance was positive for both profit and not-for-profit organizations, suggesting that the market orientation concept is beneficial regardless of the organizational objective. However, the relationship was stronger for not-for-profit organizations ($r=.55$, CI .50–.61) than for profit organizations ($r=.31$, CI .29–.33). Hence, for the same level of market orientation, ceteris paribus, business performance is higher for not-for-profit than profit firms. Therefore, H3 is supported, suggesting that it is more valuable for not-for-profit rather than profit companies to adopt a market orientation strategy (Table 2). These findings are aligned with Alderson (1957), who suggests that not-for-profit organizations compete for resources in order to survive. This study shows that market orientation of not-for-profit companies leads to a stronger capacity for obtaining resources. The strength of the relationship may be attributed to the fact that the market orientation concept has been applied for a longer period in the profit sector than in the not-for-profit sector.

5.6.3. Service vs. manufacturing

Similar to the findings for profit/not-for-profit moderating effect, significant difference between services ($r=.45$, CI .41–.49) and manufacturing ($r=.33$, CI .30–.36) industries as to the relationship between market orientation and business performance were found ($\alpha=.05$). For the same level of market

orientation, *ceteris paribus*, business performance is higher for service than manufacturing firms. Therefore, H4 is supported. Service providers, by the nature of their business, maintain a close relationship with their customer (Kotler, 2000) making the marketing concept a dominant element of success. Furthermore, service is a relatively understudied area as compared to tangible goods (Langford & Cosenza, 1998) making organizational nature a subject of future research of the relationship between market orientation and business performance.

5.7. Measurement moderators

5.7.1. Market orientation

The relationship between market orientation and business performance was stronger when the MARKOR scale ($r=.42$, CI .40–.45) rather than the MKTOR scale ($r=.28$, CI .25–.31) or mixed scale ($r=.33$, CI .29–.37) were used to measure market orientation. These findings are contrary to previous research that suggests that MKTOR explains more variance than MARKOR (Oczkowski & Farrell, 1998). Hence, H5 is not supported, suggesting the MARKOR scale explains more variance in the relationship between market orientation and business performance than the MKTOR scale. These findings are consistent with Deshpandé and Farley (1998) who found that the relationship between market orientation and business performance measured using MARKOR was .44 compared to .39 when the relationship was measured using MKTOR. Future research is needed to investigate why the relationship between market orientation and business performance is stronger when market orientation is measured using MKTOR rather than MARKOR. A comparison of the disattenuated and observed mean effect sizes reveals no substantive differences as to the results of testing H5 (Table 2).

5.7.2. Business performance

Measures of business performance were statistically different at $\alpha=.05$ (Table 2). As hypothesized, the relationship between market orientation and business performance is stronger when the subjective scale ($r=.41$, CI .38–.43) rather than the objective ($r=.29$, CI .23–.35) scale was used to measure business performance. This means that for the same level of

market orientation, *ceteris paribus*, business performance is higher when subjective rather than objective measures of business performance are used. Therefore, H6 is supported. The findings are consistent with Bommer et al. (1995) and Harris (2001) who argued that the two scales are not interchangeable. A comparison of the disattenuated and observed mean effect sizes reveals no substantive differences as to the results of testing H6 (Table 2).

5.8. Multivariate analysis

The point biserial correlation coefficient between industry and business objective ($\rho=.62$) was significant at $\alpha=.05$. This relationship may be attributed to the sample; all not-for-profit firms were also service industries. Therefore, as prescribed by Farley and Lehmann (1986), a multivariate analysis was conducted to account for possible multicollinearity of these variables. Dummy variables were created using the (0,1) coding scheme for industry type (service, manufacturing), MO scale (MARKOR, MKTOR), business performance (subjective, objective), and business objective (profit, not-for-profit).

A model with disattenuated effect size as the dependent variable and dummy variables of the moderators (industry type, MO scale, business performance scale, and business objective) as independent variables was estimated. Following the Lipsey and Wilson (2001) procedure, the significance of the model, estimation of the standard error of the β coefficients, and significance level of the t -values were adjusted for testing and interpretation.

$$\begin{aligned} ES_{MO-PERF} = & \beta_0 + \beta_1 \text{ Industry} + \beta_2 \text{ MO Scale} \\ & + \beta_3 \text{ Business Performance Scale} \\ & + \beta_4 \text{ Business Objective} \end{aligned}$$

$$\begin{aligned} ES_{MO-PERF} = & .13 + .17 \text{ Industry} + .29 \text{ MO Scale} \\ & \quad \quad \quad (p=.13) \quad \quad \quad (p=.01) \\ & + .13 \text{ Business Performance Scale} \\ & \quad \quad \quad (p=.17) \\ & - .30 \text{ Business Objective} \\ & \quad \quad \quad (p=.01) \end{aligned}$$

The model (adjusted $R^2=.22$) and both the MO scale and business objective were significant at $\alpha=.05$. How-

ever, although the signs of all β coefficients were consistent with the hypotheses (H3–H6), contrary to the analog ANOVA univariate results, industry type (services, manufacturing) and business objective (profit, not-for-profit) become non-significant. This result is due to both variables containing equivalent information and sharing explanatory power of the variance of business performance. Given the characteristics of our sample (i.e., all not-for-profit firms were services and all manufacturing firms were profit oriented), this study cannot determine which of the two variables should be included (or excluded) in the model.

6. Discussion

The findings of this study support the widely held marketing notion that the attainment of organizational goals is achieved by satisfying the needs of customers more efficiently and effectively than competitors. A rapidly changing environment requires quick and continual adaptation by management, whose ability to enhance operational efficiencies may lie in their ability to develop and embrace an organization-wide commitment to market orientation (Wood, Bhuian, and Kiecker, 2000).

The results of this meta-analysis support Sheth's (2001) argument that powerful macroeconomic forces are reshaping the world and national boundaries are becoming obsolete in determining differential marketing practices. Regional integration, ideology-free world, technology advances, and borderless markets (Sheth, 2001) contribute to the findings that, across countries, the relationship between market orientation and business performance is significantly positive and not influenced by the various degrees of socioeconomic development and national culture (i.e., individualism). The movement to a borderless world brings forward the importance of defining other elements that impact the relationship between market orientation and business performance. Two such elements are uncovered in this meta-analysis: organizational objective (profit, not-for-profit) and industry type (service, manufacturing). The fact that the relationship between market orientation and business performance is stronger in a service setting than in a manufacturing setting and stronger for not-for-profit organizations compared to profit organizations brings support to the broaden-

ing of the marketing concept (Kotler & Levy, 1969). However, a limitation of this study is that due to the high correlation between industry type and organization objective ($\rho=0.62$), this study cannot determine which one of the two variables is the true moderator.

6.1. Profit vs. not-for-profit

Faced with a competitive environment, a not-for-profit organization's survival rests on its ability to offer high quality services and products while competing for scarce resources (Alderson, 1957; Balabanis, Stables, & Phillips, 1997; McLeish, 1995). The findings of this study indicate that for the same level of market orientation, the impact on business performance will be greater in a not-for-profit organization than in a profit organization. An explanation may be that marketing orientation is less used in not-for-profit organizations than in profit organizations. Therefore, not-for-profit organizations are more likely to gain a source of comparative advantage by implementing a market orientation strategy. This is consistent with Hunt's (2002) resource advantage theory that suggests, "if a firm is market oriented and its competitors are not, then a market orientation strategy may be a resource that moves the firm's market place position [to competitive advantage and superior performance]" (p. 282).

6.2. Services vs. manufacturing

Service firms depend on person-to-person interactions and as such market orientation is a critical strategy for success. This connectivity with the consumer allows firms to align their capabilities with customers' needs, wants and demands and deliver superior customer value (Day, 1999). The findings of this study bring evidence in support of Gray and Hooley's (2002) position that the relationship between market orientation and business performance is stronger for service than manufacturing firms.

6.3. Measurement

Measurement also influences the relationship between market orientation and business performance, such that it is stronger when market orientation is measured using the MARKOR rather than the MKTOR scale. The strength of this relationship might

be overstated when business performance is measured using subjective scales and understated when using objective scales. Marketers must consider these differences when evaluating research results.

6.4. Managerial implications

The positive effects of market orientation are explained by the superior ability of market-oriented firms to understand markets (i.e., sensing emerging opportunities, anticipating competitor's moves, and making fact-based decisions) and to attract and keep customers (i.e., deliver superior value, encourage loyalty, leverage market investments) (Day, 1999). The findings of this study are of particular importance to managers who are responsible for developing and implementing strategies that cross country borders, since the relationship between market orientation and business performance is unaffected by national culture and socioeconomic development. Giving more importance to market orientation, a source of competitive advantage, becomes an indispensable strategy for cross-cultural, global marketing.

To enjoy the advantages of market orientation, leadership is essential in the organization's ability to motivate organizational change that is vital to the development and maintenance of market-oriented strategies (Locander, Hamilton, Ladik, & Stuart, 2002). Organizational change towards market orientation often results in the flattening of organizational structures, managing processes rather than functional specialization, outsourcing of non-critical activities, forming networks of relationships with other organizations, and mostly with creating an organizational culture in which every employee views the customer as a primary stakeholder (Cravens, Gordon, Piercy, & Slater, 1998; Day, 1999). These variables are critical components for achieving superior business performance.

However, the positive effect of market orientation on organizational effectiveness is not only reflected in superior financial performance but has also been linked to other factors that are beneficial to the customer, the firm and its employees, and society in general. Aspects beneficial to the customer are stronger levels of satisfaction (Langerak, 2001) and access to better products (Kahn, 2001). Factors beneficial to the firm include a better capacity for innovation (Han, Kin, and Srivastava, 1998), a greater entrepreneurial

proclivity (Matsuno, Mentzer, & Ozsomer, 2002), stronger interdepartmental integration (Kahn, 2001; Steinman, Deshpandé, & Farley, 2000), and improved employee's organizational commitment (Jaworski & Kohli, 1993). For employees, market orientation brings an *esprit-de-corps* working environment (Jaworski & Kohli, 1993). For society, market orientation promotes a strong ecological orientation (Stone & Wakefield, 2000), as well as encourages better services from local governments (i.e., public goods) (Cervera, Mollá, and Sánchez, 2001).

7. Limitations and future research

Several limitations to this study are now put forward. First, although the fail-safe *N* statistic diminishes the threat to validity from file drawer cases, selection bias may be a limitation of the study. Although diligence was exercised to reduce selection bias, this threat is inherent to the nature of meta-analysis, resulting in the potential exclusion of relevant studies. Second, market orientation accounts for about 12% of the variance in business performance leaving a substantial amount of the variance in performance unaccounted for. Third, other variables not directly tested in this study (i.e., market growth, market turbulence, competitive intensity, organizational strategy, organizational culture and climate, innovation, learning) have been theorized as affecting the relationship between market orientation and business performance (e.g., Baker & Sinkula, 1999; Deshpandé, Farley, and Webster, 2000; Harris, 2001; Rose & Shoham, 2002). Fourth, the effects of market orientation and performance could be time dependent. Hence, companies that are implementing the marketing concept (market orientation) today may not experience the full effect until years from now. Fifth, although a positive relationship exists between market orientation and business performance, an assessment of causality is not addressed in this study. Sixth, this meta-analysis could not determine whether industry type or organization objective is the true moderators of the relationship between market orientation and business performance. Finally, even though some studies mentioned using objective rather than subjective measures of business performance, in many cases, the so-called objective performance measures really

consist in respondent judgments of objective indicators of performance, not objective numbers themselves. To address some of these limitations, the following research areas are proposed.

First, future research should investigate the relationship between market orientation and business performance in studies with samples including manufacturing firms with not-for-profit objectives. Also, the market orientation–business performance literature indicates that parameters external and internal to the organization affect the relationship between market orientation and business performance. These parameters might be used as moderators in future meta-analysis of the relationship between market orientation and business performance. External moderators include market growth (Harris, 2001), market turbulence (Harris, 2001; Rose & Shoham, 2002), and competitive intensity (Appiah-Adu, 1998b). Internal moderators include organizational strategy (Matsuno, Mentzer, and Ozsomer, 2002; Pelham & Wilson, 1996), organizational culture and climate (Deshpandé, Farley, and Webster, 2000), innovation (Noble, Sinha, & Kumar, 2002; Salavou, 2002), and learning (Baker & Sinkula, 1999; Farrell, 2000; Noble, Sinha, and Kumar, 2002). Since our findings show that national culture and socioeconomic development do not impact the effectiveness of market orientation, the influence of individual characteristics becomes important. Therefore, future research could investigate the role of management attitudes, behaviors, and leadership capacity in the implementation of market orientated strategies and their influence on performance (Harris & Ogbonna, 2001; Locander et al., 2002).

In order to assess a causal relationship between market orientation and business performance, four conditions are needed: (1) temporal sequentiality, (2) associative variation, (3) non-spurious association, and (4) theoretical support (Hunt, 2002). Due to the characteristics of the effect sizes (i.e., sample size and diversity) included in this meta-analysis, this study brought ample support for the effects of market orientation on business performance (Table 2). However, evidence of the temporal sequentiality of the market orientation and business performance relationship is needed. Longitudinal research is critical for analyzing business strategies because the results of business strategies may not be immediate. It may take years for a cultural and organizational change to take

place, and the effects of such change may be only observable in the long run (e.g., Russell, 2001). A longitudinal study could be conducted in an organization whose management is willing to adopt the marketing concept, allowing researchers to document the changes taking place and the results of those changes.

The results of this meta-analysis can be used as a benchmark for future research endeavors. As indicated by Farley, Lehmann, and Sawyer (1995), meta-analysis findings are useful for replacing zero values in null hypothesis with the mean effect size. The mean effect sizes found in this study can be used as the default value for the relationship between market orientation and business performance for each of the moderating conditions investigated.

Finally, given the importance of market orientation to the marketing field, future meta-analysis may investigate the effect of market orientation on other parameters that affect the customer, the firm, its employees, and society in general. Examples of these parameters are customer satisfaction and better products and services (Kahn, 2001; Langerak, 2001), interorganizational relationships and interdepartmental integration (Kahn, 2001; Steinman, Deshpandé, and Farley, 2000), organizational commitment and *esprit-de-corps* of employees (Jaworski & Kohli, 1993), stronger ecological orientation and better services produced by governments (Cervera, Mollá, and Sánchez, 2001; Stone & Wakefield, 2000).

This study shows that market orientation is a critical component of business performance and offers evidence of the effectiveness of the implementation of the marketing concept. The robustness of the relationship between market orientation and business performance across countries offers a worthwhile and reliable tool for international, as well as, domestic marketing managers. As the first meta-analysis of this relationship, this study offers a building block upon which a broader understanding of the effect of market orientation can be undertaken.

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Appendix A. Descriptive synthesis of meta-analysis research in marketing

Cite	Brief description
<i>Advertising</i>	
Brown, Homer, and Inman (1998)	Relationship among <i>positive/negative feelings</i> and: <i>attitude towards ad, brand attitude, purchase intentions, beliefs, brand recall, brand cognitions, and attitude toward advertising.</i>
Martin (1997)	Relationship between <i>age</i> and <i>understanding of advertising intent.</i>
Grewal, Kavanoor, Fern, Costley, and Barnes (1997)	Relationship among <i>comparative and non-comparative advertising</i> and: <i>attention, message awareness, brand awareness, processing, informativeness, similarity, source believability, ad believability, ad attitude, brand attitude, and purchase intention.</i>
Duffy (1996)	Effect of cigarette advertising on cigarette demand.
Abernethy and Franke (1996)	Descriptive synthesis of literature based on Resnik and Stern's (1977) information content (e.g., <i>price, quality, performance</i>) by <i>product category.</i> Moderating effect of <i>media, economic development of the country,</i> and measures variables (e.g., <i>reliability, omission of small ads, sample size</i>).
Batra, Lehmann, Burke, and Pae (1995)	Descriptive synthesis of literature on the relationship between ad characteristics (e.g., <i>product category, brand characteristics, advertising</i>) and ad effectiveness.
Lodish, Abraham, Kalmenson, Livelsberger, Lubetkin, Richardson, and Stevens (1995)	Relationship among <i>GRP% change</i> and: <i>brand and category variables</i> (31), <i>strategic variables</i> (11), <i>media variables</i> (21), <i>copy variables</i> (9), and <i>copy-testing variables</i> (4). Moderating effects of <i>new product/established product.</i>
Brown and Stayman (1992)	Relationship among <i>ad attitude</i> and: <i>feelings, ad cognition, brand cognition, brand attitude, purchase intention, repetition, sidedness, comparative/non-comparative, prior brand attitude, sexual portrayal, recall.</i> Moderating effects of <i>number of scale items, sample size, product related characteristics, cognitive processing goals and study design, focus.</i>
Assmus, Farley, and Lehmann (1984)	Relationship between <i>advertising effectiveness</i> and <i>sales volume.</i>
<i>Channels</i>	
Geyskens, Steenkamp, and Kumar (1999)	Relationship among <i>economic, non-economic satisfaction</i> and: <i>trust,</i>

Appendix A (continued)

Cite	Brief description
Geyskens, Steenkamp, and Kumar (1999)	<i>commitment, conflict, partner use of threats, partner use of promises, partner use of non-coercive influence strategy.</i> Relationship between <i>partner use of threats, use of promises, use of non-coercive influence</i> and type of organization.
Geyskens, Steenkamp, and Kumar (1998)	Relationships among <i>trust</i> and <i>channel relationship constructs.</i> Moderating effect of <i>study design, sample characteristics, and methodological variables.</i>
Brown, Lusch, and Smith (1991)	Relationship between <i>channel conflict</i> and <i>satisfaction.</i>
<i>Consumer behavior</i>	
Szymanski and Henard (2001)	Relationship among <i>customer satisfaction</i> and: <i>antecedents and outcomes of customer satisfaction.</i> Moderating effect of <i>methods of research and measurements.</i>
Broderick and Mueller (1999)	Review of all the different tentative dimensions of the construct involvement in the marketing literature (e.g., <i>normative involvement, enduring involvement, situational involvement</i>).
Cox, Wogalter, Stokes, and Murff (1997)	Relationship between <i>warning cues</i> (e.g., <i>pictures, color</i>) and <i>safe behavior.</i>
Heath and Chatterjee (1995)	Relationship between decoys in choice sets and: <i>competitor and brand market share.</i> Moderating effects of <i>high/low quality brands and high/low quality competitors.</i>
Leeflang and Van Raaij (1995)	Descriptive synthesis of literature of the <i>European consumer</i> as respect to <i>demographic and psychographic variables.</i>
Wilson and Sherrell (1993)	Relationship between <i>source of message</i> and <i>persuasion of target audience.</i>
Woodside, Beretich, and Lauricella (1993)	Relationship between <i>response rate</i> and direct marketing variables (i.e., <i>color, toll-free number, size of campaign, multimedia</i>).
Sheppard, Hartwick, and Warshaw (1988)	Relationship among <i>Fishbein and Ajzen models</i> used in research and <i>models predictive performance.</i> Moderating effects of <i>prediction of goals, prediction of behaviors, choice among alternatives, subject intentions, and subject estimates.</i>
Szymanski and Busch (1987)	Relationship among <i>consumers' propensity to buy generics</i> and: <i>product perceptions, shopping behavior, psychographic factors, and demographic factors.</i>

Appendix A (continued)

Cite	Brief description
<i>Consumer behavior</i>	
Peterson, Albaum, and Beltramini (1985)	Descriptive synthesis of literature of <i>effects sizes</i> published in behavioral marketing literature between 1970 and 1982. Moderating effect of <i>experimental conditions</i> .
<i>Diffusion of innovation</i>	
Sultan, Farley, and Lehmann (1990)	Relationship between <i>coefficient of imitation</i> and: <i>type of innovation, specification of degree of innovation, location, and estimation method</i> .
<i>Methods</i>	
Peterson (2001)	Comparison between college <i>students</i> and <i>non-students</i> as to <i>reliability coefficients, rating scale standard deviations, and variance accounted for in factor analyses</i> .
Farley, Lehmann, and Mann (1998)	Select topics in the advertising domain and the best next research design.
Farley, Lehmann, and Sawyer (1995)	Descriptive synthesis of marketing meta-analyses and use of meta-analysis findings in marketing research.
Peterson (1994)	History of <i>Cronbach's</i> (1960–1992) in measurement of psychological constructs.
Wyner (1993)	Advantage of meta-analysis over statistical significance (use and limitations).
Chandrashekar and Walker (1993)	Use of maximum-likelihood-based estimation (HMLE) procedure in test of moderators.
Sawyer and Paul (1993)	In support of meta-analysis over classical inferential statistic in marketing research.
Armstrong and Harvey (1990)	Comparison of quantitative research (meta-analysis) and qualitative results of mailed surveys.
Churchill and Peter (1984)	Effects of research design on reliability of rating marketing measures.
<i>New product development</i>	
Henard and Szymanski (2001)	Relationship among <i>new product performance</i> and: product characteristics, firm strategy characteristics, firm process characteristics, marketplace characteristics, and market potential. Moderating effects of <i>performance, geography, and technology</i> .
<i>Pricing</i>	
Estelami, Lehmann, and Holden (2001)	Relationship among <i>consumer price knowledge</i> and: <i>inflation,</i>

Appendix A (continued)

Cite	Brief description
<i>Pricing</i>	
Estelami, Lehmann, and Holden (2001)	unemployment, GDP growth, interest rate, country of study, and <i>passage of time</i> .
Estelami and Lehmann (2001)	Relationship between <i>price recall accuracy</i> and <i>research design characteristics</i> .
Sethuraman, Srinivasan, and Kim (1999)	Examines the effect of <i>context</i> on <i>price elasticities</i> .
Tellis (1988)	Relationship between <i>price elasticity of demand</i> and: model specifications, environment, data, and estimation method.
<i>Sales</i>	
Richardson, Swan, and McInnis-Bowers (1994)	Descriptive synthesis of research of the <i>diversity of sales force research</i> as to <i>type of industry</i> and <i>type of salespeople constituting the samples</i> .
Brown and Peterson (1993)	Relationship among <i>job satisfaction</i> and various <i>job attitudes and behaviors</i> .
Churchill, Ford, Hartley, and Walker (1985)	Examines antecedents of <i>job performance</i> . Moderating effects of <i>customer type, product type, and performance measures</i> .
Jaramillo, Mulki, and Marshall (in press)	Examines the effect of salespersons organizational commitment and job performance.
<i>Strategy</i>	
Szymanski, Troy, and Bharadwaj (1995)	Relationship between <i>order of entry</i> into the market and <i>market share</i> .
Szymanski, Bharadwaj, and Varadarajan (1993)	Relationship between <i>market share</i> and <i>profitability</i> . Moderating effects of <i>market structure, competitive strategy, tangibility, profitability measures, market share measure, origin of sample, profit model use, and time frame of measurement</i> .

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*Studies included in the meta-analysis sample.