

Introduction

Marketing Analytics is a relatively new but increasingly prominent field in which tools are applied to marketing performance and customer information in optimizing investments of marketing programs and maximizing customer interaction. Marketing Analytics is a **sub-discipline of broader** analytics and includes the people, processes and technology to generate insights that improve marketing performance. In this **B2B** study, we established a **set of predictors** that help determine the degree to which a firm's marketing function is analytically driven. Our research builds on extant theories of **market orientation** by establishing the presence of a new construct know as Marketing Analytics Orientation (MAO).

Main theoretical Basis/Supporting Literature

This paper will add to the literature by expanding upon the theory of market orientation through the establishment of a new construct known as **Marketing Analytics Orientation (MAO)**. The paper adds to the scholarly literature by **establishing predictive factors that comprise the construct of MAO**. The MAO construct offers the marketing practitioner a way to assess how analytical their marketing organization is in using market data.



Main theoretical Basis/Supporting Literature

MARKET ORIENTATION AND RELATED CONSTRUCTS: Summary

- Market orientation is a continuum that constantly needs to be developed in order to be successfully implemented in organizations ([Kirca et al. 2005](#); [Noble et al. 2002](#)).
- **Market orientation** is based on an organization's ability to interpret new ideas & learn new capabilities. These ideas and capabilities must be successfully spread throughout the organization and continually developed by its proponents. Interpretation of new ideas throughout an organization may be influenced by: the nature of the answer sought, the characteristics of the environment, the previous experience of the questioner and the method used to acquire it ([Mayfield and Mayfield 2015](#)).
- Related Constructions: **The diffusion of ideas/Org Learning and Top Management Support.**
 - Organizational learning occurs as (1) individuals acquire intelligence, (2) individuals share the intelligence throughout the organization, (3) organizational members achieve a shared interpretation of the intelligence, and (4) the organization considers changes in the range of its potential behaviors based on the shared interpretation ([Slater and Narver 2000](#)). Based on the knowledge of organizational learning and interpretation, new capabilities cannot be nurtured or productively utilized without concurrent attention to the values, beliefs and behaviors of members in the organization ([Vargo and Lusch 2004](#))
 - Top management support is vital for attainment of Market Orientation and MAO because leaders drive, through learning processes, the level of adoption and success ([Ranjan and Bhatnagar 2009](#)). The strategies that top management implements to achieve Market Orientation will most likely be a function of budget, internal resources, level of sophistication of the firm, and the industry sector ([Jobs, Aukers, and Gilfoil 2015](#)).
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Antecedents of MAO

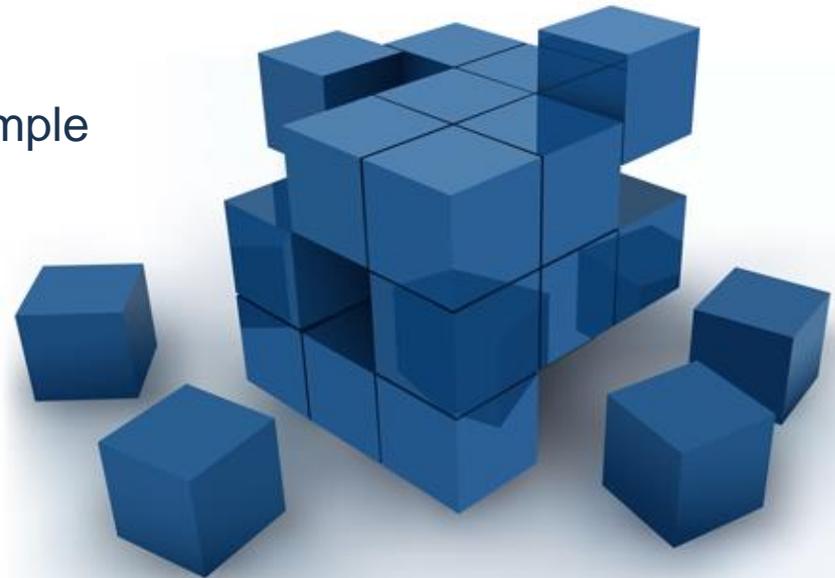
- A review of the literature on Orientations revealed several useful constructs that can be considered in the construction of the MAO Index and scoring process.
 - One seminal work in the extant literature is Market Orientation. Market Orientation describes a market-focused intelligence generation strategy based on acquiring information about customers' expressed and latent needs, and competitors' capabilities and strategies. This intelligence provides a focus for the business's product development and sales growth efforts by enabling the business to develop strong relationships with key customers and insights into opportunities for market development ([Narver and Slater 1989](#)).
 - The authors examined Interaction Orientation with respect to related concepts available in the literature, such as Relationship Orientation and customer-relating capability ([Ramani and Kumar 2008](#)). The term "Relationship Orientation" has been conceptualized as being the opposite of a transaction mentality (Day, 2000) it "reflects relevant values, behavioral norms, the shared mental modes used to make sense out of patterns of customer loyalty and defection, and decision criteria" (Day and Van den Bulte 2002, pp. 7–8).
 - The study by Jaworski & Kohli (1993) further built on the conceptual framework of Market Orientation started by Narver and Slater. The authors explore the relationships and factors inside the firm in relation to Market Orientation and how they ultimately impact business performance. The authors identify three classes of factors that affect Market Orientation and its interrelationships among its elements. In this work, significant research was focused on introducing supply and demand side factors as potential moderators of the impact of Market Orientation on business performance. Many of the relationships explored serve as a theoretical basis in our MAO study.
 - Shimp & Sharma have developed an instrument, termed the CETSCALE, to measure consumers' ethnocentric tendencies related to purchasing foreign- versus American-made products. The authors characterize the scale as a measure of "tendency" rather than "attitude," because the latter term suggests a greater degree of object specificity than the CETSCALE is intended to capture([Shimp and Sharma 1987](#)).

Methodology

This study meets the criteria of a **non-experimental, associational study**.

There is no discrete treatment delivered and there are no groups being compared to each other.

Instead, **the purpose is to collect information on the one group of participants and find correlations (associations) between the variables included in the survey.** For example MAO and organizational characteristics.



Methodology: Qualitative Phase

Research Goal

To refine our thinking on potential factors affecting Marketing Analytics and MAO.

Research Objectives

Identified and explored the **factors and issues that impact marketing analytics organizations.**
Evaluated these issues in terms of relative degree of impact on the organization.

Research Application

Use learnings to provide input into a quantitative survey.



Methodology: Qualitative Phase

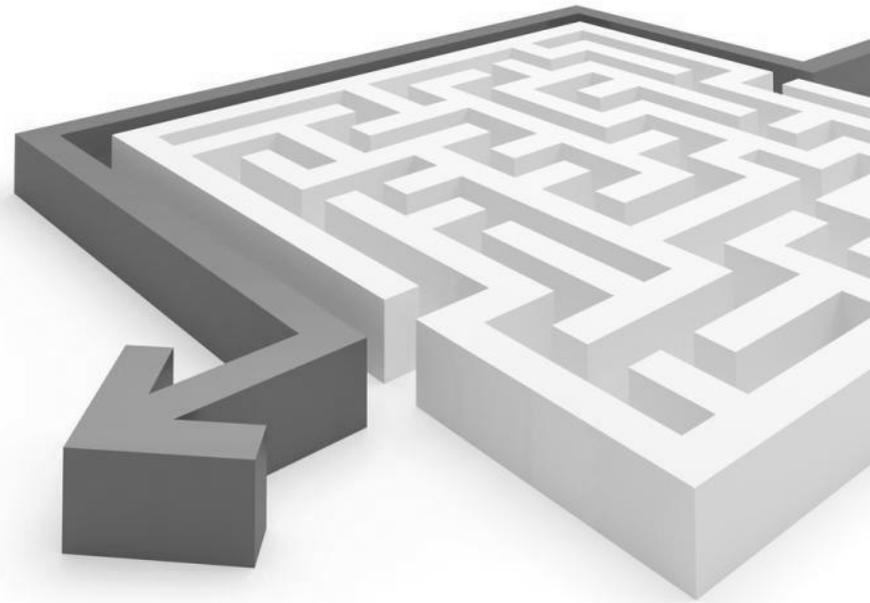
Qualitative Sampling Plan

- A **non-representative (convenience) sample of Marketing Analytics** decision-makers sourced through the author's industry contacts.
- These subject matter experts (SMEs) had direct responsibility for managing or liaising with Marketing Analytics organizations.
- We conducted a total of **15 interviews**.
 - Administered via teleconference or self-administered questionnaire.



Methodology: Qualitative Phase

- In-going Stimuli: 6 Issues (From the content validity)
 - Top management supports Marketing Analytics
 - Favorable corporate risk environment
 - The Marketing Analytics organization's director is a marketing analytics professional
 - The level of Marketing Analytics funding (people, processes, technology, and tools)
 - Marketing Analytics results are used to drive change
 - The Marketing Analytics organization is at the leading edge of the industry
- Outgoing: Based on the learning from the qualitative we revised our list from 6 to 14 attributes.



Methodology: Qualitative Results - From 6 to 14

No.	Pre-Qualitative Phase Attributes	Survey	Post Qualitative Phase Attributes
1	The level of Marketing Analytics funding (people, processes, technology and tools)	Q.16	The level of Marketing Analytics funding (people, processes, technology and tools) [H4]
2		Q.18	The perceived credibility level of the Marketing Analytics organization across the business
3	Top Management supports Marketing Analytics	Q.20	The degree to which Top Management supports Marketing Analytics [H1]
4		Q.22	The company's ability to source qualified Analytics talent
5	Marketing Analytics organization is at the leading edge of your industry	Q.24	The degree to which the Marketing Analytics organization is at the leading edge of your industry
6		Q.28	The degree to which Top Management understands analytics subject matter
7		Q.30	The degree to which Direct Marketing and Analytics are core to the company's business model
8		Q.32	The effectiveness of Analytics Governance in the company
9		Q.34	The degree to which the company is forward thinking about its role in the marketplace
10	The Marketing Analytics Director is a marketing analytics professional	Q.36	The degree to which the Marketing Analytics Director is a marketing analytics professional [H3]
11		Q.38	The degree to which the Regulatory Environment impacts adoption and use of Analytics
12		Q.40	The effectiveness of Data Governance in the company
13	Favorable corporate risk environment	Q.42	The degree of risk Top Management is willing to take to produce business results [H2]
14	Marketing Analytics results are used to drive change	Q.44	The degree to which Marketing Analytics results are used to recommend change [H5]

Methodology: Analytical Framework

5 Steps in Creating an Analytical Framework

- 1** **Conduct** quantitative research
- 2** **Create** MAO Construct
- 3** **Methodology** of creating the index
- 4** **Score firms** on MAO Index
- 5** **Profile firms** based on MAO index to identify differences.

Methodology: Quantitative Phase

Research Objectives

- Develop a measure of MAO, identifying the attributes that compose it.
- Categorize firms in terms of their degree or level of MAO.
- Determine whether there are differences between firms based on their MAO scores.



Methodology: Quantitative Phase

Sampling Plan

- A **non-representative (convenience) sample: based on the author's network and postings to analytics professionals' groups on LinkedIn.**
- A gratuity was based on a sweepstakes drawing of four \$100 gift cards.
- Participant recruitment occurred in four waves.
- Data collected from 11/16/15 through 12/31/15.
- **111 surveys out of 212 were eligible for inclusion in the study.**
 - Tested for differences between complete and incomplete surveys (firmographics, respondent profile, perceptions of marketing analytics) and found no significant differences.

Methodology: Quantitative Phase

Survey Respondents

- The **profile of our 111 survey respondents** demonstrate that the survey successfully reached the intended target
 - > 50% represent upper management positions.
 - About 50% responsible for analytics functions/organizations.
 - > 80% of respondents' companies had a Chief Analytics Officer role.
 - > 50% worked in a company with assets over \$5 billion.

Methodology: Quantitative Phase

Survey Instrument

- Developed questionnaire through Survey Monkey.
- Designed to be self-administered by respondents invited to participate via e-mail.
- Survey Content:
 - **Firmographics and respondent profile**
 - **14 attributes** (10-point importance scale)
 - **Sub-questions with batteries of statements** for each attribute (7-point agreement scale or “yes/no”).
 - **Effectiveness of marketing analytics** (10-point scale)
 - **Sub-questions with batteries of statements for Effectiveness** (7-point agreement scale or “yes/no”).
 - **Marketing Analytics and Marketing Performance** (10-point scale)
 - **Sub-questions on Marketing Performance** (7-point agreement scale or “yes/no”).
- Attribute and effectiveness-related questions and their associated sub-questions were **rotated and the statements themselves were randomly rotated** to minimize order bias.

Methodology: MAO Index Development - Factor Analysis

Inputs for Exploratory Factor Analysis (EFA): 20 survey items, including 14 attributes

No.	Quantitative Phase Attributes Used in Factor Analysis
16	The level of Marketing Analytics funding (people, processes, technology and tools)
18	The perceived credibility level of the Marketing Analytics organization across the business
20	The degree to which Top Management supports Marketing Analytics
22	The company's ability to source qualified Analytics talent
24	The degree to which the Marketing Analytics organization is at the leading edge of your industry
28	The degree to which Top Management understands analytics subject matter
30	The degree to which Direct Marketing and Analytics are core to the company's business model
32	The effectiveness of Analytics Governance in the company
34	The degree to which the company is forward thinking about its role in the marketplace
36	The degree to which the Marketing Analytics Director is a marketing analytics professional
38	The degree to which the Regulatory Environment impacts adoption and use of Analytics
40	The effectiveness of Data Governance in the company
42	The degree of risk Top Management is willing to take to produce business results
44	The degree to which Marketing Analytics results are used to recommend change
47	Effectiveness of the processes employed in the company
48-01	My company/business unit uses a segmentation scheme to engage customers
49	Effectiveness of the people employed in the Marketing Analytics organization
50-01	Our Marketing Analytics people are very good at identifying/employing the appropriate marketing analysis tools given the problem at hand
51	Effectiveness of the database technology employed in the company
53	Effectiveness of the organizational placement of Marketing Analytics in the company

Methodology: MAO Index Development - Factor Analysis

- **Undertook Exploratory Factor Analysis (EFA)** using 20 survey items
 - Low and problematic loading values were iteratively eliminated from the EFA until the best solution was realized: eliminated Q18, 36, and 48-01.
- Process was **iterated several times**.
- A **final EFA 3-factor solution** was realized.
- Ran the **Confirmatory Factor Analysis and confirmed** that the proposed solution was valid.
 - Minor adjustments made to EFA solution.
- The **CFA Model Fit** characterized by:
 - $\text{CMIN/DF} = 1.16$ – (below 2 is good.)
 - $\text{GFI} = 0.876$ – (better than 0.80 is good)
 - $\text{CFI} = 0.9813$ – (above 0.95 is great)
 - $\text{TLI} = 0.975$ – (above 0.95 is great)
 - $\text{RMSEA} = 0.0455$ – (less than 0.05 is good)
 - $\text{PCLOSE} = 0.546$ – (greater than 0.05 is good)

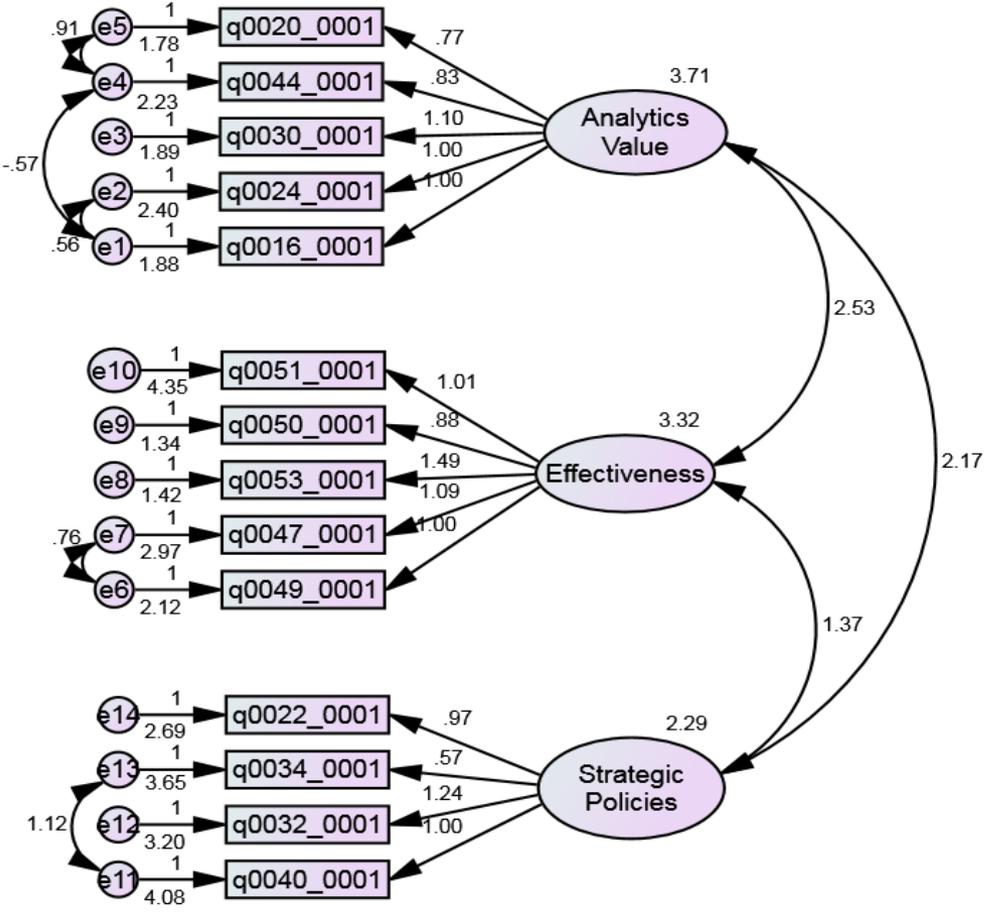
Methodology: MAO Index Development - Factor Analysis

- The solution's 3 factors:



- Model shows **covariance between the 3 factors**, especially between: Analytics Value and Effectiveness; and Analytics Value and Strategic Policies.

Methodology: MAO Index Development - Factor Analysis



Methodology: MAO Index Development - Factor Analysis

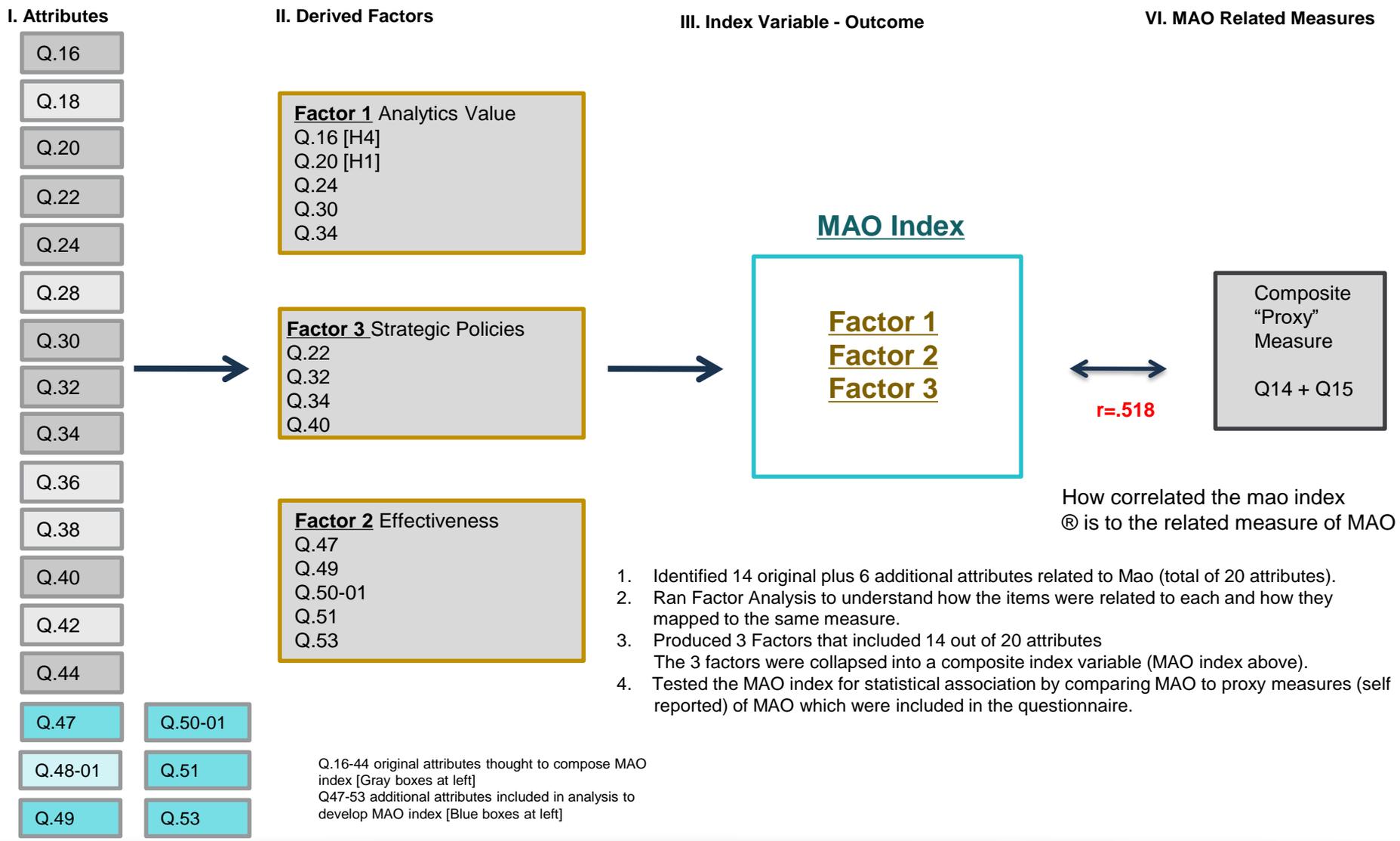
The 3 factors are composed of 9 of the original 14 attributes (Q16-44) plus 5 “effectiveness” questions (Q47-53).

CFA-Based Factors and Attributes

Q.	Loadings	
Factor 1 Analytics Value		
Q16	.81	The level of Marketing Analytics funding (people, processes, technology and tools)
Q20	.74	The degree to which Top Management supports Marketing Analytics
Q24	.78	The degree to which the Marketing Analytics organization is at the leading edge of your industry
Q30	.84	The degree to which Direct Marketing and Analytics are core to the company's business model
Q44	.73	The degree to which Marketing Analytics results are used to recommend change
Factor 2 Effectiveness		
Q47	.75	Effectiveness of the processes employed in the company
Q49	.78	Effectiveness of the people employed in the Marketing Analytics organization
Q50-001	.81	Our Marketing Analytics people are very good at identifying and employing the appropriate marketing analysis tools given the problem at hand
Q51	.66	Effectiveness of the database technology employed in the company
Q53	.92	Effectiveness of the organizational placement of Marketing Analytics in the company
Factor 3 Strategic Policies		
Q22	.67	The company's ability to source qualified Analytics talent
Q32	.72	The effectiveness of Analytics Governance in the company
Q34	.41	The degree to which the company is forward thinking about its role in the marketplace
Q40	.60	The effectiveness of Data Governance in the company

Figure 1: MAO Index Variable Building Process:

index variable composition of original items and derived factors, and association with MAO related measure



Methodology: Scoring firms on MAO

- The Index was used to score firms on level of MAO.
 - Summing mean scores based on the attributes included in the model.
 - MAO index variable was assigned to all 111 respondents.
- Segmented the firms into tertiles:
 - Low MAO
 - Medium MAO
 - High MAO



Methodology: Profiling the MAO Tertiles

- Conducted one-way ANOVA with Tukey post-hoc tests between the 3 tertiles against a wide spectrum of questions.
 - Used some of the survey's sub-questions developed as batteries of statements to understand conditions or situations within the Marketing Analytics organization or the business line/overall company.
 - Developed an overall mean score from each battery of statements for every respondent.
- No significant differences between the tertiles in terms of:
 - Firmographics
 - Respondent profiles
- Many significant differences based on sub-questions related to:
 - Original 14 attributes.
 - Effectiveness of Marketing Analytics.
 - Marketing Analytics impacts on Marketing Performance.

Key Results: Profiling

- Overall, High MAO firms rated the profiling questions significantly higher than the Low MAO and Medium firms.
 - Suggests stronger perceptions of the role and impact of the Marketing Analytics organizations among the High cluster.
- Medium MAO firms also rated questions significantly higher than the Low cluster.
- Differences between High and Medium MAO firms:
 - MA funding
 - Top Management's support of analytics
 - Analytics and Data governance
 - Marketing Analytics as a support for decision-making
 - Whether the Marketing Analytics organization meets world-class standard



Key Results: Profiling

Q. Set	Sub-Question Topics	Significantly Higher Differences by Tertile		
		Low (L)	Medium (M)	High (H)
17	Battery: MA Funding [H4]		> L	> L ; > M
19	Battery: Creditability of MA		> L	> L
21	Battery: Top Management support of analytics [H1]		> L	> L ; > M
23	Battery: Sourcing qualified analytics talent			> L
26	Battery: Successful applications of analytics		> L	> L
27	Battery : Analytics uses		> L	> L
29	Battery: Top Management understands analytics		> L	> L
31	Battery: Analytics core to bus model		> L	> L
33	Battery: Analytics governance			> L ; > M
35	Battery: Forward thinking company			> L
39	Battery: Regulatory environment			> L
41	Battery: Data governance			> L ; > M
43	Battery: Risk taking for performance [H2]		> L	> L
45	Battery: Using results to recommend change [H5]		> L	> L
46	Battery: Areas where MA supports decisions [H5]		> L	> L ; > M
48	Battery: Processes employed		> L	> L
52	Battery: Database technologies		> L	> L
54	Battery: MA placement in the organization		> L	> L ; > M
57	Battery: MA impacts on Marketing Performance		> L	> L
58	Benefits of MA on Marketing Performance		> L	> L
59	MA successes on Marketing Performance		> L	> L
Q14	Meets world-class standard		> L	> L ; > M
Q15	MA fulfills its intended role		> L	> L

Significant differences are shown by tertile. For each question area or statement, ">L" indicates the tertile designated in the column rated the issue significantly higher than the Low tertile and ">M" indicates it rated the issue significantly higher than the Medium tertile.

Key Results: Profiling

- Detailed profiling clearly indicates that High MAO firms, followed by the Medium cluster, are more likely to:
 - Use analytics to facilitate strategic and tactical decisions, including funding-related decisions.
 - Indicate they use more sophisticated analytics processes and have a more sophisticated database environment.
 - Identify a strong linkage between Marketing Analytics and Marketing Performance indicators.



Key Results: Profiling

Ques.	Sub-Questions	Significantly Higher Differences by Tertile		
		Low (L)	Medium (M)	High (H)
45	Battery: Using results to recommend change			
	Virtually everyone in our business unit uses analytics based insights to support decisions			> L
	In our strategy meetings, we defend arguments with analytics based facts			> L
	Marketing analytics findings and recommendations are used to recommend changes to Marketing funding		> L	> L ; > M
	Marketing analytics findings and recommendations are used to recommend changes to Marketing programs		> L	> L ; > M
46	Battery: Areas where MA supports decisions "We regularly use analytics to support decisions in the following areas:"			
	Pricing, promotion and discount management		> L	> L ; > M
	Sales-force planning		> L	> L
	Segmentation			> L
	Targeting			> L
	Product positioning		> L	> L ; > M
	Developing annual budgets			> L ; > M
	Advertising and promotions			> L
	Marketing mix allocation		> L	> L
	New product development			> L ; > M
Long-term strategic planning			> L ; > M	

Significant differences are shown by tertile. For each question area or statement, ">L" indicates the tertile designated in the column rated the issue significantly higher than the Low tertile and ">M" indicates it rated the issue significantly higher than the Medium tertile.

Key Results: Profiling

Ques.	Sub-Questions	Significantly Higher Differences by Tertile		
		Low (L)	Medium (M)	High (H)
48	Battery: Processes employed			
	My company/business unit uses a segmentation scheme to engage customers		> L	> L ; > M
	My company/business unit uses customer lifetime value or profitability to engage the customer		> L	> L
	Customers can be uniformly recognized across my company's/business unit's platforms			> L ; > M
	My company/business unit uses a common contact management platform		> L	> L
	My company/business unit has a Marketing Automation Solution (for managing customer relationships and programs)		> L	> L
	My company/business unit uses an analytics-based approach to engage customers across channels		> L	> L ; > M
52	Battery: Database technologies			
	All our customer databases are accessible by a single data query tool		> L	> L
	All our customer databases are integrated in a single data repository		> L	> L ; > M
	All our customer databases are easily accessible by those who need them		> L	> L
	We have a state-of-art IT infrastructure		> L	> L
	We use IT to gain a competitive advantage			> L
	In general, we collect more data than our primary competitors		> L	> L
	My company has an enterprise-wide data strategy		> L	> L
	My company/business unit has a "big data" platform (for mining unstructured data streams)		> L	> L
My company/business unit uses a CRM platform and applications			> L	

Significant differences are shown by tertile. For each question area or statement, ">L" indicates the tertile designated in the column rated the issue significantly higher than the Low tertile and ">M" indicates it rated the issue significantly higher than the Medium tertile.

Key Results: Profiling

Ques.	Sub-Questions	Significantly Higher Differences by Tertile		
		Low (L)	Medium (M)	High (H)
57	Batter: MA impacts on Marketing Performance			
	If we reduce our marketing analytics activities, our business unit's profits will suffer			> L
	We are confident that the use of marketing analytics improves our ability to satisfy our customers			> L ; > M
59	MA successes on Marketing Performance			
	My company has realized cost improvements in its marketing programs over the past (3) years		> L	> L
	My company has realized greater revenue generation in its marketing programs over the past (3) years		> L	> L ; > M
	My company has seen our customer base grow in number over the past (3) years		> L	> L
	My company has seen improvement in customer profitability over the past (3) years		> L	> L ; > M
	My company has seen improvement in customer retention over the past (3) years		> L	> L
	The cost to serve our customers has improved over the past (3) years		> L	> L ; > M

Significant differences are shown by tertile. For each question area or statement, ">L" indicates the tertile designated in the column rated the issue significantly higher than the Low tertile and ">M" indicates it rated the issue significantly higher than the Medium tertile.

Limitations/Future Directions

- Limitations

- Study findings are based on a non-representative and small sample of companies within a select set of industries. We view these findings as indicative of MAO but not a definitive statement of MAO across all U.S. businesses.

- Directions for Future Research

- In order to generalize these findings across industry sectors we would recommend a **larger and more robust sample of cross industry participants**.
- Further, we recommend future research and analysis to:
 1. Explore **how MAO and its factors impact Marketing Performance**.
 2. Identify the **elements that drive each of the factors defining MAO**, to understand how a business can optimize these factors in their marketing analytics function.
 3. Determine how **Marketing Performance differs between high scoring and low scoring firms on the MAO index**.

Discussion

- Research built upon the **theory of market orientation** by identifying and defining Marketing Analytics Orientation (MAO).
- **MAO can be operationalized** by and applied to organizations as well as future theoretical frameworks.
- **Identified characteristics that differentiate firms** based on their MAO score.
- Implications for Marketing Practitioners as it is the first index of its kind to allow the firm to assess its Marketing analytics orientation.
 - **Benchmark firm level of analytical** competitiveness.
 - The key contributing factors of the MAO index can be leveraged to **identify concrete areas in which an organization can expand or build MAO capacity**: change management (risk taking, top management support, opportunity identification); funding (dedicated staff, budget increases, technology investments); staff skills and training; and analytics and data governance.
- Our paper has shown differences between firms rated by their level of MAO.
- Detailed profiling clearly indicates that High MAO firms, followed by the Medium cluster, are more likely to:
 - Use analytics to facilitate strategic and tactical decisions, including funding-related decisions.
 - Indicate they use more sophisticated analytics processes and have a more sophisticated database environment.
 - Identify a strong linkage between Marketing Analytics and Marketing Performance indicators

Conclusion

- The goal of this initial research was to **prove that we could identify the predictors or factors involved in creating the MAO construct** and gain insight into how **MAO varies by type of company**.
- Our study was able to **create a MAO Index** and then **identify the key factors** of MAO.
- Thirdly, we were able to conclude that **MAO does in fact differ by firm but not industry** and we did see differences by MAO Tertile cohort groups.

References

- Adorno, Theodor W., et al. "The authoritarian personality." (1950).
- Bertrand, Marianne and Antoinette Schoar (2002), "Managing with Style: The Effect of Managers on Firm Policies," MIT Sloan.
- Chang, Edward C. and Edward H. Ritter (1976), "Ethnocentrism in Black College Students," *Journal of Social Psychology*, 100, 89-98.
- Chakraborty, Goutam, Vishal Lala, and David Warren (2002), "An Empirical Investigation of Antecedents of B2b Websites' Effectiveness," *Journal of Interactive Marketing*, 16 (4), 51-72.
- Chen, Qimei, and William D. Wells. "Attitude toward the site." *Journal of advertising research* 39.5 (1999): 27-38.
- Churchill Jr, Gilbert A. "A paradigm for developing better measures of marketing constructs." *Journal of marketing research* (1979): 64-73.
- Cronin, Joseph and Steven Taylor (1992), "Measuring Service Quality: A Reexamination and Extension," *Journal of Marketing*, 56 (3), 55-68.
- Day, George S. "Managing market relationships." *Journal of the academy of marketing science* 28.1 (2000): 24-30.
- Day, George S., and Christophe Van den Bulte. *Superiority in customer relationship management: Consequences for competitive advantage and performance*. Marketing Science Institute, 2002.
- Germann, Frank, Gary L. Lilien, and Arvind Rangaswamy (2013), "Performance Implications of Deploying Marketing Analytics," *International Journal of Research in Marketing*, 30 (2), 114-28.
- Ghose, Sanjoy, and Wenyu Dou. "Interactive functions and their impacts on the appeal of Internet presence sites." *Journal of Advertising research* 38 (1998): 29-44.
- Jaworski, Bernard J and Ajay K Kohli (1993), "Market Orientation: Antecedents & Consequences," *Journal of Marketing*, 57 (3), 53.
- Kirca, Ahmet H., Satish Jayachandran, and William O. Bearden (2005), "Market Orientation: A Meta-Analytic Review and Assessment of Its Antecedents and Impact on Performance," *Journal of Marketing*, 69 (2), 24-41.
- Kiron, David, Rebecca Shockley, Nina Kruschwitz, Glenn Finch, and Dr. Michael Haydock (2011), "Analytics: The Widening Divide," MIT Sloan Management Review.
- Kohli, Ajay K and Bernard J Jaworski (1990), "Market Orientation: The Construct, Research Propositions, and Managerial Implications," *The Journal of Marketing*, 1-18.
- Kohli, Ajay K., Bernard J. Jaworski, and Ajith Kumar (1993), "Markor: A Measure of Market Orientation," *Journal of marketing research*, 30 (4), 467-77.
- Kumar, V, Lerzan Aksoy, Bas Donkers, Rajkumar Venkatesan, Thorsten Wiesel, and Sebastian Tillmanns (2010), "Undervalued or Overvalued Customers: Capturing Total Customer Engagement Value," *Journal of Service Research*, 13 (3), 297-310.
- Lam, Son K., Florian Kraus, and Michael Ahearne (2010), "The Diffusion of Market Orientation Throughout the Organization: A Social Learning Theory Perspective," *Journal of Marketing*, 74 (5), 61-79.
- Linnenluecke, Martina K and Andrew Griffiths (2010), "Corporate Sustainability and Organizational Culture," *Journal of world business*, 45 (4), 357-66.
- Mayfield, Jacqueline and Milton Mayfield (2015), "The Diffusion Process of Strategic Motivating Language," in *Academy of Management Proceedings*, Vol. 2015: Academy of Management, 13723.
- Mizik, Natalie and Robert Jacobson (2008), "The Financial Value Impact of Perceptual Brand Attributes," *Journal of Marketing Research*, 45 (1), 15-32.
- Morgan, Neil A., Rebecca J. Slotegraaf, and Douglas W. Vorhies (2009), "Linking Marketing Capabilities with Profit Growth," *Intern J. Research in Marketing*, 284-93.
- Narver, John C. and Stanley F. Slater (1989), "The Effect of Market Orientation on Business Profitability," *Journal of business research*, 89 - 120.
- Noble, Charles H., Rajiv K. Sinha, and Ajith Kumar (2002), "Market Orientation and Alternative Strategic Orientations: A Longitudinal Assessment of Performance Implications," *Journal of Marketing*, 66 (4), 25-39.
- Ramani, Girish and Vipin Kumar (2008), "Interaction Orientation and Firm Performance," *Journal of Marketing*, 72 (1), 27-45.
- Sheth, Jagdish N., Rajendra S. Sisodia, and Arun Sharma (2000), "The Antecedents and Consequences of Customer-Centric Marketing," *Journal of the Academy of Marketing Science*, 28 (55).
- Shimp, Terence and Subhash Sharma (1987), "Consumer Ethnocentrism: Construction and Validation of the Cetscale," *Journal of Marketing*, 24.
- Slater, Stanley F and John C Narver (2000), "Intelligence Generation and Superior Customer Value," *Journal of the Academy of Marketing Science*, 28 (1), 120-27.
- Verhoef, Peter C. and Katherine N. Lemon (2011), "Customer Value Management: Optimizing the Value of the Firm's Customer Base," Marketing Science Institute.
- Warr, Peter B., Judith Faust, and Godfrey J. Harrison. "A British ethnocentrism scale." *British Journal of Social and Clinical Psychology* 6.4 (1967): 267-277.



Questions/Discussions

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Appendix

Hypothesis

- **H1:** The more supportive of Marketing Analytics Top Management is, the greater the degree of MAO in the organization/firm.
- **H2:** The more Top Management is willing to take a risk, the greater the level of MAO in the organization/firm
- **H3:** The greater degree the Marketing Analytics Director is a Marketing Analytics professional, the higher the level of MAO in the organization/firm
- **H4:** The greater the funding of Marketing Analytics, the higher the level of MAO in the organization/firm
- **H5:** The more Marketing Analytics results are used to recommend change in the business, the higher the level of MAO in the organization/firm

Key Findings: Hypotheses Support

- Our associational study is not trying to prove causation.
- However, the current analysis allows us to infer these relationships based on differences in perceptions between the 3 MAO index tiers on key metrics.
- Our findings suggest there are positive relationships between the level of MAO exhibited by a firm and 4 of the 5 hypotheses.
 - H1: The more supportive of Marketing Analytics Top Management is, the greater the degree of MAO in the organization/firm.
 - H2: The more Top Management is willing to take a risk, the greater the level of MAO in the organization/firm.
 - H4: The greater the funding of Marketing Analytics, the higher the level of MAO in the organization/firm.
 - H5: The more Marketing Analytics results are used to recommend change in the business, the higher the level of MAO in the organization/firm.

Key Findings: Hypotheses Support

Q. Set	Sub-Question Topics	Significantly Higher Differences by Tertile		
		Low (L)	Medium (M)	High (H)
21	Battery: Top Management support of analytics [H1]		> L	> L ; > M
43	Battery: Risk taking for performance [H2]		> L	> L
17	Battery: MA Funding [H4]		> L	> L ; > M
45	Battery: Using results to recommend change [H5] Mean across 4 statements		> L	> L
	Marketing analytics findings and recommendations are used to recommend changes to Marketing funding		> L	> L ; > M
	Marketing analytics findings and recommendations are used to recommend changes to Marketing programs		> L	> L ; > M

Significant differences are shown by tertile. For each question area or statement, ">L" indicates the tertile designated in the column rated the issue significantly higher than the Low tertile and ">M" indicates it rated the issue significantly higher than the Medium tertile.

Methodology: Tests of Construct Validity

MAO construct validity

- In order to test the construct validity of MAO, we evaluated the association between it and 2 questions we viewed as potential proxies for MAO. In these questions (Q14, 15), respondents gave their perspectives on how well their Marketing Analytics organization:
 - Met their idea of a world class marketing analytics function.
 - Fulfilled its intended role in the business unit.
- We combined the responses from these two questions and used it as an assessment of construct validity of the MAO index. We found that MAO, along with all subscales positively correlated with the composite index of questions 14 and 15 (correlation of .518). Importantly, no individual subscale correlated more than the total MAO scale, suggesting this correlation was not primarily driven by any individual subscale.

Methodology: Validity Tests

Convergent Validity

- **Strong correlations between MAO and the other variables.** For example, we ran correlations for Question 56 (Marketing Performance) and found a strong correlation with the MAO factors in the CFA. All of the subscales correlate strongly with MAO. We would expect Marketing Performance to be highly correlated with MAO.

	Analytics Value	Effectiveness	Strategic Policies
Correlation Coefficient	0.691	0.731	0.433
Sig. (2-tailed)	0	0	0
N	81	83	82

- **Tertile differences.** We looked at Question 41 (Data Governance), as an example of convergent validity. The relationship between Q41 and the three factors is most likely not linear, as it correlates well with Effectiveness and Strategic Policy, but not the Value factor; we expected it to correlate with Strategic Policy because data governance is a variable under that factor.

	Analytics Value	Effectiveness	Strategic Policies
Correlation Coefficient	0.229	0.55	0.457
Sig. (2-tailed)	0.024	0	0
N	97	86	101

Methodology: Validity Tests

Divergent Validity

- **Weak Correlations across the MAO factors.** There is a weak relationship between Q39 the Regulatory Environment and MAO. These two scales are independent of each other and measuring a different construct.

	Analytics Value	Effectiveness	Strategic Policies
Correlation Coefficient	0.096	0.22	0.422
Sig. (2-tailed)	0.345	0.039	0
N	99	88	103

- **When one sub-question does not correlate with all MAO Factors.** Question 43, risk taking for performance, does not correlate with Strategic Policies and has moderate to low correlations with the other two factors.

	Analytics Value	Effectiveness	Strategic Policies
Correlation Coefficient	0.363	0.575	0.095
Sig. (2-tailed)	0	0	0.348

Methodology: Common Method Bias

Common Method Bias

- The researchers conducted a test of Common Method Bias (Harman's Single Factor Test). In order to account for common method bias, we first extracted a single unrotated factor from all items included in the final MAO score. We found that this single factor accounted for 42.5% of the total variance, which is less than 50%, suggesting that common method bias will not be a problem.
- We also conducted the common latent variable test. In order to account for common method bias, we added a single factor loaded onto all items in the CFA aimed at modeling the common method variance. The latent factor was constrained to be 1, while the loadings were constrained to be the same number. After running this model, we found that all factor loadings were reported as zero in AMOS, indicating that the common method variance is very close to zero. Overall, this test indicates that common method bias is not a large problem in the current study.