

INTRODUCTION TO THE SPECIAL ISSUE: EMPIRICAL GENERALIZATIONS IN MARKETING

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Science is a process in which data and theory interact leading to *generalized explanations of disparate types of phenomena*. Thus, phenomena (empirical generalizations) are the building blocks of science. Marketing science has matured to the point where it seems desirable to take stock of where we are, what we have learned, and develop a research agenda for extending the knowledge base that has developed.

The development of an inventory of substantive generalizable findings is useful not only from the point of view of advancement of science in marketing, but also from the point of view of advancing managerial applications of fundamental knowledge that has developed in marketing. For both of these purposes we initiated the *Empirical Generalizations in Marketing* project. The program was initiated with the preparation of 24 papers that were presented at a Wharton conference on February 16-18, 1994.* Following the conference, most of the presented papers were completed and after a review and revision process resulted in this issue.

The purpose of this introduction is to briefly define an empirical generalization, outline some of the approaches to the determination of empirical generalizations, illustrate the richness of our marketing science knowledge by presenting some of the empirical generalizations identified by the various contributors and propose a research agenda for the continuous development and refinement of empirical generalizations in marketing.

What Is an Empirical Generalization?

In convening the conference, we explained the objective of the program by using the definition developed by Bass: "Empirical Generalizations is a pattern or regularity that repeats over different circumstances and that can be described simply by mathematical, graphic or symbolic methods. A pattern that repeats but need not be universal over all circumstances" (Bass 1995).

* The conference participants included: Frank Bass, Robert Blattberg, William Boulding, Richard Briesch, R. Bucklin, R. Davis, Andrew Ehrenberg, Josh Eliashberg, Paul Farris, Claus Fornell, Ivan Gross, Kathy Hammond, Abel Jeuland, Eric Johnson, Gurumurthy Kalyanaram, Hotaka Katahira, Rajiv Lal, Gilles Laurent, Don Lehmann, Robert Leone, Gary Lilien, Len Lodish, Vijay Mahajan, Robert Meyer, Dave Montgomery, Don Morrison, Eitan Muller, Ram Rao, David Reibstein, Bill Robinson, Dave Schmittlein, Rick Staelin, Mark Uncles, Glen Urban, Jerry Wind and Russell Winer.

During the course of the conference and in the various papers presented here, a number of variations on this basic definition have been proposed by Ehrenberg (1995), Blattberg, Briesch and Fox (1995), Eliashberg, Lilien and Kim (1995) and others. In examining these various definitions, a number of common characteristics emerge, including the requirements for:

- *Multiple studies*: Minimum of two studies.
- *Quality*: The studies have to be of high quality.
- *Objectivity*: The studies should be by more than one author.
- *Consistency*: The results should be consistent under diverse conditions.

Yet, still unresolved criteria are the requirement for:

- Theoretical soundness
- Managerial relevance
- Representativeness

At the one extreme are those who feel that empirical generalizations do not have to be based on theory, derived from theory or leading to the development of a theory. Yet, others require that empirical generalizations be theoretically sound. Similarly while some do not require managerial relevance, others, recognizing the applied nature of marketing, require some level of relevance.

The representativeness of empirical generalizations is often ignored. The focus of many of the attempted empirical generalizations is limited to the published literature. Yet, the published literature often does not address the entire domain of interest. David Schmittlein, for example, found that the published literature on direct marketing does not lend itself to empirical generalizations. Direct marketing firms have the data, but the information that can be generalized is often viewed as too valuable to be shared freely. Other areas suffer from a lopsided emphasis on problems conducive to and easy to study and not areas requiring study. In this regard, areas selected for empirical generalizations can be viewed as samples of findings, and as with any sampling, a key question is the generalizability from the sample to the appropriate universe.

In defining phenomena as empirical generalizations, it is important not only to state the phenomena in the most succinct way but also to recognize the limits of the generalizations, understand when and where they apply and be open to new exceptions. This is critical for managers who look at the generalizations as guidelines for action. It is also critical for researchers, who, as in all research, should view the generalizations as a starting point for research, not tablets engraved in stone.

How to Develop Empirical Generalizations?

Bass (1995) discusses two fundamental approaches to the development of empirical generalizations: (a) theory based followed by empirical testing The TETE (Theory-Empirical-Theory-Empirical), the approach that characterizes Bass's own approach in which the theoretical development preceded the development and testing of the empirical data and (b) empirically initiated generalizations followed by theory the ETET (Empirical-Theory-Empirical-Theory)—the approach that best describes Ehrenberg's own studies. To date, with a few notable exceptions, most of the empirical generalizations have been developed from the analysis of results of empirical studies. These approaches include:

- Informal methods such as "eye balling" data looking for patterns or regularities that repeat over different data sets.
- Literature review (many of the papers in this issue).
- Content analysis and clustering (i.e., Eliashberg, Lilien, Kim).
- Meta analysis (i.e., Farley, Lehmann, Sawyer).

In addition, in areas where there is little published empirical research, an examination of "folk wisdom" of industry beliefs, practices and the results of proprietary studies can be used as a basis for formal development and empirical examination of suggested propositions.

It is clear that there is no unique method or formula for the discovery of an empirical generalization, but we believe that because of the importance of developing generalizable results both for scientific advancement and for managerial purposes research philosophies of marketing scholars and journal editors should be reexamined.

Illustrations of Empirical Generalizations in Marketing

The 22 papers in this issue present a wide array of empirical generalizations. Exhibit 1 summarizes some of these generalizations. The support for these generalizations and their implications are discussed in the papers.

These generalizations suggest:

- Some very specific and practical implications.
- Some methodological implications.
- That large areas of marketing are not covered at all by these generalizations. Especially striking in their omission are generalizations covering organizational buying behavior, global marketing, and the experience of non-U.S. firms, etc.
- Many of the generalizations tend to focus on a limited part of the marketing mix ignoring marketing mix interaction effects.

And What Next?

It is our hope that some of the empirical generalizations presented in this volume would be of practical value to management. As can be seen in Exhibit 1, some of the generalizations help codify our knowledge and as discussed in the various papers, some of the generalizations can serve as useful guidelines in the generation of strategic marketing options.

In addition, we hope that this volume would stimulate additional research and actions by marketing scientists in industry and academia.

At the concluding session of the conference, a rich research agenda was developed including:

- (a) Address the gaps. The most obvious gaps are the high relevance topics which have received low coverage. These include:
 - Broaden the scope of marketing studies and generalizations.
 - Broaden the studies and generalizations beyond the U.S.
 - Introduce other dependent variables linked to the *value of marketing* project, i.e., focusing not only on the conventional shares, sales and profit measures but on all aspects of consumer welfare—improved customer information, ability to make better decisions, quality of life, etc. (Wind 1995).
- (b) Resolve inconsistencies among studies.
- (c) Link to the “generalizations” used by industry.
- (d) Use multiple approaches to establish generalizations.
- (f) Undertake more experimentation as the basis for information leading to empirical generalizations.

In addition, a number of other actions were suggested including:

- (a) Legitimization of replication studies.
- (b) Establish reporting standards to facilitate comparison of studies.
- (c) Increase availability of new data bases.
- (d) Adopt empirical generalizations as a philosophy—perspective in our research and Ph.D. education.
- (e) Strive for uniformity in terminology across studies.

While a number of these research and actions directions require institutional responses by journals, universities and organizations such as MSI, most of these action and research directions can be implemented by each of us as individual marketing scientists.

Reading this special issue will hopefully lead each of us, whether a practitioner or researcher, to: (a) explore the implication of the current inventory of empirical gener-

EXHIBIT 1
Illustrative Empirical Generalizations in Marketing

Topic	Authors	Generalizations
Diffusion	Bass	The Bass Model and extensions such as the extension to multiple generations of technologies is an empirical generalization. A generalization of the Bass model to include decision variables is an example of a higher level theory.
	Mahajan, Muller, Bass	The conditional probability of adoption at time $T = p + qF(T)$ (the Bass model) and thus the adoption rate depends on the number of previous adopters.
Choice	Ehrenberg	The Dirichlet distribution describes the repeat buying and brand switching behavior of consumers.
	Uncles, Ehrenberg, Hammond	Each consumer habitually buys from a small set of brands, with steady "long-run" propensities or probabilities of buying. Brand choices are independent of the brand bought last (implying a zero-order process).
	Meyer, Johnson	Attribute valuations are nonlinear and reference dependent. The choice function recognizes proximity.
Market Response (Short-run)	Ehrenberg	The price elasticity for closely substitutable brands is -2.6 .
	Farley, Lehmann, Sawyer	Meta analysis indicates price elasticities of about -2 , advertising elasticities of 0.25 , and elasticities of buyer behavior models about 0.3 .
	Kalyanaram, Winer	Reference prices have a consistent and significant impact on consumer demand. Consumers react more strongly to price increases than to price decreases.
	Lodish, Abraham, Livelsberger, Lubetkin, Richardson, Stevens	Increased advertising weight alone is unlikely to increase sales. No response is twice as likely as a response. A change in copy and media strategy will increase the likelihood of a positive response. When TV weight increases had a significant impact during the year of weight increase, during the following two years, on average, the sales impact of the first year is approximately double and the increase stems from an increase in the buying rate of the test group.
	Leone	In estimating sales response models, the estimate of the lag coefficient for sales decreases, and both the estimated duration interval of advertising and the estimated current-period advertising effect, increase due to "aggregation bias." After adjusting for aggregation bias the 90% duration interval for advertising is brief in duration averaging between 6-9 months.
	Kaul, Wittink	An increase in price advertising leads to higher sensitivity among consumers. The use of price advertising leads to higher price sensitivity among consumers. The use of price advertising leads to lower prices. An increase in nonprice advertising leads to lower price sensitivity among consumers.
	Blattberg, Briesch, Fox	Temporary retail price reductions substantially increase sales. Higher market share brands are less deal elastic. The frequency of deals changes consumer's reference price. The greater the frequency of deals, the lower the height of the deal spike. Cross-promotional effects are asymmetric and promoting higher quality brands impacts weaker brands disproportionately.
		Advertised promotions can result in increased store traffic.
	Rao, Arjunji, Murthi	Promotions are essentially independent across competitors.

Topic	Authors	Generalizations
Market Response (long-run)	Lal, Padmanabhan	In the long run, market shares are stationary for a majority of the products. Relative promotional expenditures for the products are offsetting in the long run and for products whose market shares show a trend, it is difficult to discern the impact of relative promotional expenditure on the evolution of market share.
	Dekimpe, Hanssens	Sales evolution is the rule rather than the exception, but market shares tend to be stationary. When evolution is present, it is not necessarily the result of marketing actions.
Brand Awareness	Laurent, Kapferer, Roussel	The relationship around the three measures of brand awareness: aided, spontaneous and top-of-mind can be linearized, in all product classes, by performing a logistic transformation on each measure.
	Ehrenberg	The relationship between the repeat rate (<i>RR</i>) of consumers' beliefs about a brand's properties and the initial response level (<i>RL</i>) is: $RR = RL + 20$.
Distribution	Reibstein, Farris	Cross-sectional relationships between brand share and retail distribution show a convex pattern; high-share brands have more share points per point of distribution.
Customer Satisfaction	Fornell	The distribution of customer satisfaction is negatively skewed.
		The association between market share and customer satisfaction is not positive (and often negative) in cross-sectional analysis.
Order of Entry	Kalyanaram, Robinson, Urban	For consumer packaged goods, order of market entry has a stronger negative relationship with trial penetration than with repeat purchase.
		Skill and resource profiles for market pioneers differ from early followers and late entrants.
		Order of market entry is not related to long-term survival rates.
R & D	Boulding, Staelin	Demand returns to R&D spending depend on whether the firm has the ability <u>and</u> motivation to take advantage of the R&D investment.
		A generalization across strategic actions is that a firm requires both ability and motivation to sustain returns across strategic actions.
Bargaining	Eliashberg, Lilien, Kim	Bargainers who view their task as joint problem-solvers settle their dispute closer to the Pareto frontier. Thus, they generate more efficient agreements on average than those who do not view their task as joint problem solving.
Methodology and Philosophy	Bass	Although there are philosophical differences over the issue of whether it is better for observation to precede theory or the other way around (ETET vs. TETE), there is general agreement that science is a process in which data and theory interact to produce higher level explanations.
	Ehrenberg	Mere empirical generalisations will, therefore, increasingly be replaced by <i>empirically-grounded theory</i> .
	Barwise	Some empirical generalizations are better than others.
	Morrison, Silva-Risso	Whenever researchers are looking for empirical generalizations in marketing, they should explicitly consider their data as coming from the model: $\text{Observed Value} = \text{TrueScore} + \text{Error}$

alizations and, (b) develop a new research and action agenda that will allow for continuous assessment, refinement and development of theoretically sound, practically useful, and intellectually challenging empirical generalizations in marketing.

Reference

- Bass, Frank (1995), "Empirical Generalizations and Marketing Science: A Personal View," *Marketing Science*, 14 (3), G6-G19.
- Wind, Yoram (1995), "Does Marketing Create Value?", interim report of the Value of Marketing Program, Wharton School Working Paper.