

Extending the Pedagogical Attention Given Elasticity of Demand in Marketing

John E. Timmerman and Jonathan D. Stewart¹

Abstract

Historically *elasticity of demand* thinking has been primarily applied to the marketing mix variable of *price*. However, the concept can also lend meaningful insights into the administration of the other marketing mix and environmental variables in a context of causality. There exists a rich body of literature exploring the more extensive uses of elasticity of demand. However, basic marketing texts, and presumably introductory classes, typically do not feature the wider applications of the tool. This paper explores some of the pedagogical reasons for broadening the treatment of this tool.

Introduction

Everyone in business – certainly everyone in the business of business education – is versed in the notion of price elasticity of demand. This concept is a cornerstone in any discussion of microeconomic principles and pricing for marketing effectiveness. Essentially price elasticity of demand involves the notion that consumers are affected by manipulations of price. On the producer/distributor side, price represents an explicit reflection of the production and marketing costs incorporated in bringing the product to the marketplace as well as the beginning point in the calculation of revenue (units sold x price) and profit (revenue – expenses). On the consumer side, price is a critical ingredient in the image and value-conceptualization of a product.

The question of elasticity of demand has generally been limited to a treatment of price elasticity of demand. Presumably this restriction is due to four causes:

- the potency accorded price as a determinant of demand (especially in classical economic thought under conditions of perfect competition),
- the ease with which the quantifiable aspect of price lends itself to a calculation of the elasticity quotient,
- the fact that changing prices is relatively cost free compared to changes in other elements of the marketing mix, and
- it is the one marketing mix variable discretely changed by the marketer and observed by the consumer at one point in time.

Unfortunately this constrained view of elasticity of demand limits the insights to be gained by marketing students from this perspective and impedes the robustness of this frame of reference as an analytical tool. We argue that, not only does elasticity of demand have broad application to the other marketing mix variables, but also to explicitly incorporate elasticity of demand thinking into the process of examining the causal world of marketing provides a valuable pedagogical frame of reference. In particular, student understanding of the causal nature of marketing could be improved if demand elasticity were taught routinely as a device for considering the influence of any change in the marketing mix on marketing

¹ John Timmerman, Professor of Marketing, Abilene Christian University, Abilene, Texas 79699, ed.timmerman@coba.acu.edu; Jonathan Stewart, Associate Professor of Finance, Abilene Christian University, Abilene, Texas 79699, jonathan.stewart@coba.acu.edu. The authors would like to thank the anonymous reviewers for their helpful suggestions.

outcomes. While it is true that a causal view of marketing is implicitly recognized in consideration of profitability, we suggest that exposing students to the lesser developed concepts of demand elasticity as related to product, place, and promotion, in addition to the more commonly referenced price variable, will strengthen student understanding of the causal nature of marketing.

A Historical Perspective

Demand elasticity (e.g., *the percentage change in quantity demanded due to a percentage change in any factor affecting demand*) thinking goes back to at least to 1627 when Mun, in his “England’s Treasure” (Chapter 3, Sec. 3,c), indicates he was well aware of demand elasticity and what underlies it. He even talks about the elasticity of foreign demand for British textiles. Whewell’s 1829 and 1831 papers gave mathematical formulae for the elasticity of demand. Gregory King gave an estimate in 1696 regarding wheat prices, and Lauderdale also wrote about elasticity in 1804. Cournot wrote about it in 1838, as did Dupuit and de Quincy in 1844. Demand elasticity was named by R. S. Moffatt in 1878 in his book *Economy of Consumption* (according to D. H. McGregor’s seminal essay “Marshall and his Book,” *Economica*, Nove. 1942, pp. 314-315).

It seems that, in subsequent years, the focus of demand elasticity usage narrowed considerably to spotlight the causal variable of price. However, in their 1954 article in the *American Economic Review*, Dorfman and Steiner make application of the “rather simple analytic tool” of elasticity of demand to demonstrate how a marketing organization might choose the optimal advertising budget. Two points about their work are worth noting in this regard. First, they define *advertising* as “any expenditure which influences the shape or position of a firm’s demand curve and which enters the firm’s cost function as a fixed cost.” This definition would comprehend variables such as product restyling, research and development, structural distribution changes, as well as any form of overarching promotional decision.

Second, Dorfman and Steiner still linked their consideration of “advertising” with choices about the price of the product. They overcome the hindrance (from our argument’s standpoint) of the linkage of “advertising” with price by addressing a simplified variant of the problem by holding price fixed. By still inserting *price*, though holding it constant, this method stops short philosophically of directly relating the nonprice causal variable with quantity demanded, but has the mathematical outcome.

While these early economists seem to have understood the potential of demand elasticity for any influential variable, marketing educators have largely confined their introductory textbook, and presumably their classroom, treatment of the topic almost exclusively to the variable *price*.

Today the treatment of elasticity of demand in practically all contemporary marketing texts is subsumed under a discussion in the “Fundamentals of Pricing” chapter (e.g., Etzel, Walker and Stanton 2004, Armstrong and Kotler 2004, Perreault and McCarthy 2005, Lasey and Clow 2004, Evan and Berman 2002, Boone and Kurtz 2005, Lamb, Hair, and McDaniel 2005, etc.). The discussion of demand elasticity usually follows a pattern of addressing the meaning and import of *elasticity* (i.e., sensitivity/responsiveness), its contrast with *inelasticity*, and how to calculate price elasticity of demand. The discussion occasionally includes *price elasticity of supply* to round out the treatment. In addition, the following terminology is used to give definition to the subject:

- **elastic demand** -- the percentage change in the quantity demanded exceeds the percentage change in price
- **unit elasticity of demand** -- the percentage change in the quantity demanded exactly equals the percentage change in price
- **inelastic demand** -- the percentage change in the quantity demanded is less than the percentage change in price
- **perfectly elastic demand** -- an almost zero percentage change in price brings about a large percentage change in the quantity demanded
- **perfectly inelastic demand** -- the percentage change in the quantity demanded is zero for any percentage change in price

The student or practitioner of marketing is typically encouraged at this point to calculate *price* elasticity of demand as a means to gain some precision of understanding about the relationship between the changes in price assigned to a product and the subsequent changes in demand for that product.

Furthermore, some texts also give brief acknowledgement to *price elasticity of supply* and *revenue elasticity of demand* (Mabry and Ulbrich 1989, Parkin, 1990, Bade and Parkin 2002) recognizing that what applies to one side of the marketing task (the downstream side) applies to the other (the upstream side).

Contemporary articles provide acknowledgement of the concept of “marketing elasticity of demand.” Ling, Berndt and Lyle (2001) discuss various marketing elasticities as they examine the impact of interrelationships between direct-to-consumer and physician-oriented marketing on the composition of the prescription and over-the-counter versions of pharmaceuticals. They focus on the sensitivity of demand to marketing relative to order of entry into the marketplace and find that the marginal product from marketing efforts become smaller the later the entry, giving “first movers” a decided advantage.

Lillien and Kotler (1983) present numerous market response models. Among them is Kotler’s multiplicative model in which he expressly recognizes nonprice marketing variables as having elasticities. Hanssens, Parsons, and Schultz (2001) define elasticity in terms of generic “marketing effort” and not price. “Marketing effort is represented by levels of the sales drivers” (p. 95), where “sales drivers” subsume “... measures of marketing effort and any other factors that affect performance” (p. 23). Among the empirical studies they cite are several instances of promotion and other elasticities.

In finding empirical generalizations, Hanssens et al. note that meta-analyses have sought generalizations of elasticities of advertising and personal selling, as well as price. They reposition a cornerstone of such generalizations as “measured elasticity = true elasticity + error” without implying that this cornerstone is somehow limited to price. Among the specific marketing generalizations Hanssens puts forth are elasticities for advertising, coupon spending, shelf space, personal selling, and product quality. To be sure, Hanssens’ generalizations are often related to price, but nonprice elasticities are prominent too. Lambin (1972) estimated elasticity for the number of gasoline service stations in an area, i.e., a distribution type of marketing strategy variable. Dunkley and Naeymi-Rad (2003) discuss, as a key to successful resource allocation, a promotion response (elasticity) curve which addresses projected revenues and incremental profits under a range of investment scenarios as a way of blending elasticity and profit analysis. Dueze, Hoch and Purk (1944) address the impact of marketing elasticity in terms of retail store shelf and display elasticity.

Sen’s (2001) work on the impact of globalization on the labor market treats the topic of elasticity of demand in the context of the purported link between openness to international trade and the economy-wide elasticity of labor demand. This application demonstrates another resourceful use of demand elasticity thinking. Then Nijs, Dekinpe, Steenkamp and Hanssen’s (2001) look at elasticity of demand in the form of advertising reactivity in primary demand triggered by competitive advertising changes. Each of these studies provides a glimpse into the breadth of applications of this elegantly simple tool which are typically neglected by textbooks. We intend to illustrate that students can benefit from considering this elasticity concept within a more holistic and integrated framework which incorporates the entire marketing mix.

Marketing Causality

Urging that elasticity of demand conception be expanded in our pedagogy to embrace the larger marketing context, is another way of focusing attention on the causal nature of marketing.

Perhaps no single concept is more pervasive and important in marketing than the notion of cause and effect. Marketing practitioners depend on it in their planning and implementation of programs designed to obtain responses from consumers. Ideas of advertising affecting sales, opinion leaders influencing the adoption of new products, or promotion activities producing interest and preferences for one’s wares all rely implicitly on mechanisms of cause and effect. Marketing scholars and researchers find causality at the heart of phenomena they attempt to understand and explain. Our propositions, theories, and methodologies are all fundamentally based on the concept of causality (Bagozzi 1980).

With this in mind, we believe that any opportunity to reemphasize the causal nature of marketing can be of benefit to students. One explicit way to acknowledge the central role of causality in marketing is to give expanded treatment to marketing elasticity of demand.

Practically every marketing principles text is laid out as a stimulus-organism-response (S-O-R) model. Marketing educators use this framework to convince students that their major role, whether as a front-line

marketer or a marketing manager, will be to affect change, to serve as a catalyst, to **cause** things to happen. The SOR model, as applied to marketing, includes as “stimulus” the marketing mix and the elements of the uncontrollable environment, as “organism” the psychological and sociological elements of consumer behavior, and as “response” such behavioral components as trial, purchase, repeat purchase, and patronage. Virtually every marketing text begins by reviewing the marketing environment in this order. This SOR logic is captured in the following model (Figure 1).

The significance of the SOR model to this discussion is that it makes explicit for the student the fact that causation, or influence, is the primary role of marketing efforts. Adhering to Kotler’s (2003) definition of marketing as “shaping the level and composition of demand,” it becomes apparent just how important it is to understand the elasticity of demand for the various controllable elements of the marketing mix with which demand can be influenced. While price elasticity of demand has been explicitly and ubiquitously noted, product, place, and promotion elasticity of demand have been neglected by comparison.

The purpose of this paper is to argue for a more unified pedagogical treatment that favors decomposition of elasticity of demand onto all its sources. By addressing a wider range of demand’s causes, students can gain a better grasp of the combined effects of individual elements of the marketing mix and, later as practitioners, can have an improved ability to understand and, hence, influence demand. The net effect of this wisdom can be greater control and the ability to adjust exposure to marketing risk.

An Enlarged Conception

The standard formula for calculating elasticity of demand is:

$$E = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in the Causal Variable}}$$

The primary causal factors of interest to the marketer are those that she controls: usually simplified to be expressed as product, price, place, and promotion. It is easy to see why *price* elasticity of demand would be of interest since price is such a potent variable (at least in the short-run) and the fact that it is readily quantified makes it easily accessible. However, with its multiple facets, even price is not necessarily a straightforward proposition. For example: price can be considered as whatever “the price tag” says, it can also be considered as “total price” which would include shipping and handling charges, taxes, and any other special costs associated with the purchase, or it could be assessed in terms of value and “perceived price.”

By inserting the product, place, or promotion variable in the denominator, rather than price, demand elasticity can be calculated for each of these variables as well. In making these calculations, it is important to keep three points in mind: (1) the causal variable must first be reduced to some meaningful quantitative measure, (2) causal variables are complex concepts with many facets and (3) the elasticity of demand quotient can be used in the same way as the price elasticity of demand calculation to make judgments about how, and to what extent, to apply each of the marketing mix variables to achieve desired outcomes.

It takes only one more mental step to acknowledge that the variables that we think of as uncontrollable (or environmental) can be treated in the same way. The reason for subjecting environmental variables to this kind of reasoning would be a bit different however. Given the fact that we cannot control environmental variables the way we do the marketing mix, why take this step? The reason is simple. While it is true that we cannot directly affect the environmental variables, we still need to understand how sensitive demand is to changes in these variables in order to be prepared to act swiftly when the environment shifts. We routinely associate demand for a product (like housing) with certain a contextual variable (such as the prime rate of interest). Calculating elasticity of demand may also allow us to increase or decrease our exposure to a certain environmental variable based upon our expectations of how that variable will behave in the future.

The measurements we take to calculate elasticity of demand, relative to environmental variables, will be more passive since we cannot directly manipulate them. However, as we see the environment change over time, we can take readings at two reasonable points in time to use to determine the percentage change. This change can be compared to the percentage change in demand between these two points and subjected to the elasticity calculation. Ideally these measurements will be taken when as little else as possible is in flux in the environment to avoid confounding the measurements.

And finally, while we typically think of the consumer as the organism in the SOR model, or as a mediator variable (i.e., filtering the effects of the two sets of stimulus variables), the nature of the consumer himself can influence the outcome of a marketing effort. It is clear that personality, motivation, or perception can affect how a stimulus is received and processed. What may be less clear is that it is possible to treat known qualities of the consumer as the denominator in the elasticity of demand formula. For example, we could measure the sensitivity of demand to a “change in attitude” within the market. This is exactly what political polls do in order to predict outcomes at the voting booth.

So we have a variety of applications for elasticity of demand thinking that are worthy of pursuit. By simply taking the time to determine effective measures of the causal variable under consideration, it is quite possible to pose a question of demand elasticity relative to this factor.

As has been mentioned with the variable price, the other marketing mix variables have multiple and discrete dimensions which gives the analyst options when selecting the quantity to use in determining elasticity of demand to this variable. A key point to keep in mind when making this selection is that the choice should be one that corresponds to the crucial dimensions of the phenomenon under study.

This multi-dimensional quality of marketing variables can be seen, for example, in the variable *product*. A product could be thought of in terms of its vital dimensions such as weight, volume, tensile strength, performance, durability, number of features, speed, serviceability, warranty length, labeling, etc. The crucial factor now would be to operationalize the definition of that dimension to yield a meaningful measure. For example, one might want to measure the number of optional features a product had relative to the nearest competitor before and after a change in plan occurred. Or you could look at the percentage change in the research and development budget which yielded functional improvements. In each case, by inserting this measure into the denominator, under the percentage change in quantity demanded in the numerator, the resulting measure of elasticity of demand would provide insight into the value of the changes which were implemented.

One simply must be creative and insightful to recognize the measurable features of the variable under consideration. For example, “place,” or distribution, could be thought of in terms of cost of remodeling existing outlets, reduction in delivery time, changes in atmospherics or situational variables, shipping costs, and on it goes. Promotion could be broken into its constituent parts and separate elasticities of demand could be calculated for advertising, public relations, publicity, sales promotion, personal selling, and other direct marketing of various types. Advertising elasticity of demand has had some treatment in courses on promotion, but does not seem to have gained prominence in terms of mainstream marketing treatment.

Elasticity of demand calculations can be focused on a single sliver of the marketing effort or treated on a total impact basis. Regardless of the application, elasticity of demand thinking and calculation has a natural fit with the controllable variables of the marketing mix.

Elasticity of demand can also be applied to the uncontrollable variables that affect consumers and their resulting behavior. Again, it is only necessary to find a quantifiable and realistic measure of an environmental variable to permit an elasticity of demand calculation. For the *economy*, for example, this might be something as global as the Consumer Price index (CPI) or as tailored to an individual industry as a leading indicator such as housing starts, if your product is building materials or mortgages.

To apply this approach to the environmental factor *competition*, one would need to have a measure of the change in competing products in the market or a measure of their efforts (expenditures) devoted to specific campaigns, R&D, sales training, or some other such measure. This number would then be applied to the formula as the surrogate measure of competition, or more to the point, this aspect of competition.

The preceding discussion suggests a simplex approach to looking at marketing demand elasticity, but it serves to demonstrate the possibilities for applying demand elasticity thinking to any number of causal variables. Once the potential for applying the tool is clearly established in the minds of students, they can then be introduced to the complexities accompanying each variable. It would be a mistake to suggest that taking a demand elasticity view of every demand relationship is simple and straightforward, but more often than not, we seem to have allowed the difficulties to deter us from attempting it at all, other than with the variable *price*.

If one wished to delve deeper into marketing elasticity of demand, it could be taken to a multiplex level by decomposing individual elasticities upon their various constituents. For example, *total promotion elasticity of demand* could be traced back to the individual component of sales, publicity, public relations, advertising, and sales promotion. These, in turn could be traced to their individual root causes. Reversing the approach, total promotion elasticity of demand could be combined with that of price, place, and product to *total marketing mix elasticity of demand*. The resulting logic could be seen, partially, in Figure 2.

The value of this approach to thinking about the marketing mix is to remind ourselves that the individual variables are not truly independent and have their own sources. These sources, in turn, meet with differing levels of demand responsiveness when manipulated. The big picture is the result of a series of operations with their corresponding effects which, together, compose the final outcome.

Discussion

The rationale for making a change in some element of the product mix, placement mix, or promotion mix is that one believes it will make a difference -- a positive difference. If marketing's efforts don't make a difference, the organization doesn't need it. The point is that, as educators, we have probably been doing elasticity of demand thinking for all the elements of the causal environment intuitively, but we have not always stopped to make our thinking explicit to our students. To make this relationship obvious could be very helpful, not only to the student of marketing, but also to the prospective practitioner who needs to have a grasp of the dynamics of the marketplace.

As Kotler (1972) put it, marketing is only relevant under the following condition:

$$0 < \text{MRP} < 1$$

where MRP is the market's response probability. Typically we say that, for a market to exist, there must be people with needs, the ability to buy, the authority, and the willingness to buy. In reality, while the needs, ability, and authority may be latent, "initiated willingness" is something that comes about as a result of the marketer's effort to translate the features of the product into a set of benefits that the consumer can appreciate. In other words, it is the job of marketing in most cases to prompt interest and desire, and to incite willingness. This is where concern over the market's response probability comes in. If the MRP is fixed at either 0 or 1, that is, the consumer either cannot buy or must buy, marketing is irrelevant. It is only when consumers can be affected by the marketing of the product (i.e., the application of the marketing mix) that action is called for.

And it is precisely this question of the MRP that elasticity of demand addresses. It is not simply a matter of whether MRP is fluid, but the nature of the market's sensitivity to adjustments in the marketing mix and shifts in the environment.

The general wisdom that should be derived from this broadened application of demand elasticity is not so much that exact and tedious calculations should be constantly made with respect to every conceivable related variable. Rather, it should be understood that to neglect the opportunity to think this way is passing up a fantastic opportunity to contribute to the functioning of the organization and to an appreciation of the true causal nature of the discipline.

Elasticity of demand calculations are not the only, nor necessarily the best, way to examine relationships among causal variables. A regression model, path analysis, or structural equation model may be more effective ways to chart these relationships if precise calculation is the main point. However, the focus of the current argument is that elasticity of demand is a relatively simple tool that every student learns in the first economics course. The value of extending the use of this tool is that one that most everyone in the arena under discussion possesses and understands, albeit in a limited context. The intent of the authors is to pursue the idea that students not learn to neglect a tool that is more versatile than they may have come to appreciate. If we were teaching a shop class and moved on to the power lathe after developing competence only with the hammer's ability to pull nails, and not discussing it's ability to strike, you'd have a sense of how we are looking at our typical limited treatment of elasticity of demand. We also wish to point out that calculation of elasticity is not the primary goal of this discussion... causal thinking is.

Implications for Pedagogy

The contention of the authors is that treatment of nonprice elasticity of demand has been perhaps unconsciously and unnecessarily neglected. For those in academics, the question of helping students conceive of elasticity of demand more broadly and apply it more comprehensively, holds several benefits. First, it reemphasizes the fact that the practice of marketing is about causing things to happen. The student of marketing needs to understand with utter clarity that his job is to influence outcomes and that comprehension of the sensitivity of demand to changes in the marketing environment is a critical part of that process. If they do not comprehend the causal nature of the relationship between variables under their control and those they wish to influence, how can they fully appreciate the nature of their task? Instead, they will be studying marketing piecemeal and incompletely. Elasticity of demand thinking, as a lens

through which to view the marketing task and environment, provides explicit acknowledgement of the heart of the marketer's mission.

Second, there is no reason for confining elasticity of demand treatment to the variable "price" in a discussion of marketing. While price does provide a convenient platform, in its quantitative form, for conducting elasticity calculations, the rationale, and the ability to conduct essentially the same kind of assessments, applies to all the marketing mix variables... and even to environmental variables. Even when quantification isn't easy, the discipline of thinking explicitly about the causal nature of the task is insight-producing and revealing. Marketing elasticity of demand emphasizes a causal mind-set toward viewing all the relevant variables in the marketing environment.

And another reason for allowing elasticity of demand to assume a central position in the consideration of the marketing task is that it provides a hub around which all the spokes of the discipline can be arrayed and related. As a discipline that exists to study and effect exchanges, elasticity of demand is a template that supplies logic and linkage to the relationship between the various subcomponents by explicitly recognizing the emphasis on demand creation and stimulation. The attempt to measure the nature and direction of the effects of stimuli on the intended responses makes this linkage explicit. It reminds us that *effect*, in the form of exchange, is the focal point of marketing. Without this awareness, students may founder when learning specific pieces of knowledge without understanding the goal; a little like a martial artist going through his forms, or *katas*, without understanding the purpose of each block or kick in a crucial situation.

Implications for Future Managers

Management, trying to effect positive results for the organization, needs to seriously consider the influence of any changes it makes in the marketing mix. This commitment is essentially a commitment to ponder, predict, and calculate elasticity of demand. Even if this calculation is only intuitive, it signals a comprehension that every change has an effect and that those effects are, each one, important to the success of the organization. However, elasticity of demand is not the only relevant measure in which an organization should be interested.

Elasticity of demand does not tell the whole story, nor does it always tell the most pertinent story, of the organization. When considering elasticity, we are typically looking at the market's responsiveness to change in a variable manipulated by the organization, but at some point in time, this may be less important than the ability to tap into capital markets, success in lobbying for a particular piece of legislation, dealing with union influences, improving employee morale, or a host of other critical factors. However, attention to elasticity of demand does provide unique insight into whether our actions are having their intended effect.

What elasticity thinking and measures do for the organization is provide an explicit focus on the sometimes subtle, but detectable effects that adjustments to strategic elements bring about. Since the purpose of any change in strategic variables is to effect change, gaining a handle on the responsiveness to these changes is of paramount importance. Changes are costly, and dollars spent unnecessarily or ineffectively are simply wasted. By conducting a series of demand elasticity measures, the management is in a better position to select a prudent course of action.

Directions For Future Research

Opportunities for development of this pedagogical approach might include case studies which provide a "before and after" view of a major marketing decision or related group of marketing decisions. We feel that the potential for enhancing student understanding of these concepts within the case study approach is great. The potential to consider data and opportunities faced by an actual firm, and then make strategic marketing decisions, could present students with a deeper level of engagement and understanding of elasticity concepts and application.

Additionally, it may be possible to combine various elasticity measures to obtain some macro-level elasticity value for a certain marketing strategy or strategies. If accurately determined, this type of measure could serve as a selection mechanism between competing marketing strategies.

Summary

Some argue that elasticity of demand is best confined to the variable price because the incremental cost to change a price is close to zero, allowing the results of pricing decisions to focus on revenues while not considering costs. However the aim of this paper is not to claim superiority of elasticity measures over, say, profitability as a gauge of the impact of marketing decisions, but to suggest that its application to the full range of marketing variables seems unnecessarily curtailed and that valuable insights could be gleaned by extending the attention given to it in training prospective marketers.

Nonprice elasticity goes by a number of other names than just the word “elasticity” itself. Textbooks talk about the importance of differential advantage, product differentiation, market response curves, market sensitivity analysis, marketing effectiveness, advertising response models, etc. These all have the same underlying premise as elasticity; they deal with the sensitivity of demand relative to strategic marketing changes. So, the topic of elasticity is often being covered, but it is not being covered in textbooks in a consistent marketing mix framework or in an integrated, holistic manner. The authors are pointing out that the concept of elasticity is pertinent to understanding all the variables that might be manipulated in order to influence demand. An extended treatment of elasticity in introductory marketing classes and beyond, we believe, would allow students to gain clearer insight into the sensitivity of demand relative to strategic marketing changes than currently.

Marketing elasticity deserves a more central place in our pedagogy when introducing marketing to students for three reasons: (1) it is such a useful way of recognizing the linkages between the components of the marketing system, (2) it makes explicit the causal nature of marketing, and (3) it can serve as a valuable tool in the understanding of, and application to, marketing phenomena.

When mixing paint, it can be surprising to observe the impact of a drop or two of some primary color on the blend that results. Sometimes just a hint of yellow or a blush of red can radically change the mixture. Someone took the time to understand the relationship of all of these colors to each other as well as to the result, and was able to capture it in a mixture scheme that permits carefully controlled application.

The analogy is clear for marketers. The difference is that we do not operate in a static world controlled by the invariable laws of physics. Rather, ours is a fluid, malleable world in which relationships with the market are constantly changing and the environment is anything but static. Therefore it is even more important to keep a finger on the pulse of the various sensitivities of the marketplace and an effective instrument for measuring that pulse is the gauge of elasticity of demand.

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Figure 1
Causal Model of Marketing

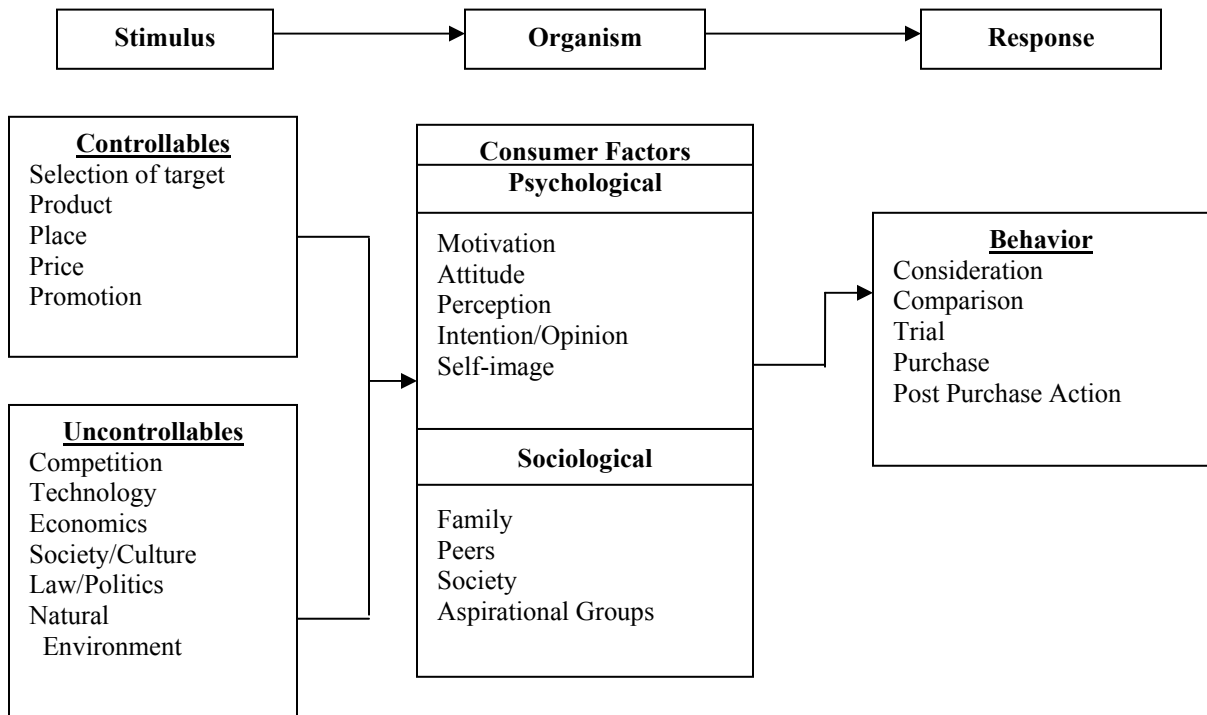


Figure 2
Partial Decomposition of Elasticity of Demand Across Sources

