

Understanding Religious Choice: A Product Attributes Model Application

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ABSTRACT

This paper investigates how consumer preferences play a role in a person's choice of a "brand" of religion. Understanding how consumers make tradeoffs in selecting between religions is critical to developing a model of consumer choice in this important area of everyday life. We approach this topic theoretically by using the product characteristics paradigm initially developed by Lancaster (1966) and analyzed as a "Product Attributes Model" by Gwin and Gwin (2003). In a product attributes model, consumers choose from a set of brands that embody a bundle of product attributes rather than choosing from among a set of one-dimensional products. By incorporating the multidimensionality of religious goods into the consumer choice problem, the product attributes model is ideal for analyzing religious choice among differentiated alternatives in a competitive market. Using religious data from two surveys, we use attribute maps to identify existing consumer preferences and current religious brand (denominational) positioning. Our results show that understanding the dimensions of religious choice can guide religious denominations in developing the appropriate combination of belief and religious activities for their target consumer. Our framework can also help denominations determine if they need to re-position their church to better meet their consumers' needs or to grow as a church.

INTRODUCTION

This paper investigates the link between consumer preferences and a person's choice of a "brand" of religion. Understanding how consumers select among religions by trading off among religious attributes is critical to developing a model of consumer choice in this important area of everyday life. The church's "brand" identity and positioning are central to developing a strong congregational base. Understanding this identity enables the communication or demonstration of this difference to the target market, so that consumers will try and hopefully continue to participate in the church. The concept of value to the consumer is a key area that most churches (and denominations) are probing today. What benefits does religion in general and the denomination specifically offer to consumers today? The benefits range from social interaction to self-help programs to helping others through church-sponsored community programs or mission. These are potential differentiators for churches or denominations above and beyond the core value of faith and belief in an afterlife. Differentiation for new and established religious denominations typically takes the form of attributes that can be built into the design of the church product in order to deliver benefits to congregants. One of the key tasks of the leadership of a religious denomination is to define the church's positioning, and these leaders must continue to monitor the effectiveness of the church's positioning and reposition when needed.

We conduct a theoretical examination of this topic by using the product characteristics approach initially developed by Lancaster (1966) and analyzed as a "Product Attributes Model" by Gwin and Gwin (2003). Contrary to standard economic consumer choice theory, consumers in a product attributes model do not choose from a set of one-dimensional products. Rather, they choose from a set of brands, each of which embodies a unique bundle of product attributes. This characteristic of the product attributes model makes it an ideal setup for modeling and testing the hypothesis that religious choice can be best understood using a competitive market framework. Understanding why a congregant chooses a church based upon its attributes helps us to understand why some congregants have preferences for specific religious brands.

Our empirical findings show that consumption of religion does indeed incorporate the key elements of positioning. In our data, two dimensions of product attributes drive religious choice: belief and intensity. Our analysis identifies five consumer segments with different needs on these dimensions. Perceptual maps enable religious brands to develop a value proposition specific to the needs and lifestyles of their target audience. A specific example of an underserved segment identified in our analysis is one characterized by moderate to low religious beliefs but a strong desire to engage in religious activities. Understanding religious product attributes can advance marketing theory and practice with regard to religion and the concept of religious brands.

RELIGIOUS MARKETS

The use of market theory to analyze competition among religious groups took hold among sociologists of religion in the 1980s. Stark and Bainbridge (1987) put forth a theory of religion that included analysis rooted in market theory. (An updated and expanded presentation is in Stark and Finke (2000).) In the sociology literature, testing of this theory has mostly taken the form of a turbulent debate over the relationship between religious participation and religious pluralism. (For example, see Finke and Stark (1988), Breault (1989a, 1989b), Olson (1999), Chaves and Gorski (2001), Voas, Olson, and Crockett (2002), and North and Gwin (2004).)

However, there was no formal modeling of why someone would choose one particular denomination over another. At the core of Stark and Finke's (2000) model is an assumption about the nature of demand for religion. In examining why denominations tend to experience doctrinal drift, Stark and Finke modeled religious differences along a single dimension that they labeled "tension" with society, defined as "the degree of distinctiveness, separation, and antagonism between a religious group and the 'outside' world." (Stark and Finke 2000, 143) While this model could explain why a person preferring low-tension religion would prefer a low-tension denomination to a higher-tension denomination, it did not seek to explain how the person would choose among the several low-tension denominations available. In addition, the concept of "tension" is fairly narrow relative to all of the possible traits that can define a religion. As we show below, a broader concept that we label "intensity" is one of two key factors that emerge in our empirical analysis as product attributes important to religious consumers. While Stark and Finke (2000, 196) seem to equate intensity and tension, we view "intensity" as a much broader concept that captures the frequency of a variety of religious activities, including church attendance, prayer, church activities, religious conversations, and extent of religious contributions. While participating in these activities can reflect a higher-tension religion, our concept of "intensity" is both inclusive of and broader than that of "tension" as used by Stark and Finke.

Among economists, the literature on the economics of religion got a jump-start with Azzi and Ehrenberg's (1975) household production model, which was extended in Sullivan (1985) to incorporate utility from current religious consumption. (Azzi and Ehrenberg had limited the benefits of religious consumption to afterlife benefits, with no benefits derived in this life.) Iannaccone (1998) summarizes additional innovations in the household production modeling approach, including his own introduction of a club model to incorporate the public good nature of religion. However, to date, no one has developed a formal household production model that analyzes the choice among religious denominations. While Goff and Trawick (2008) introduced the idea of such a model, they did not develop a theoretical model in any serious fashion. Other economists have attempted to model religious choice outside of the household production framework. Ekelund *et al.* (1996) examined the medieval Roman Catholic Church as a monopoly firm seeking to maximize its profits. In a subsequent work, Ekelund, Hebert, and Tollison (2006) contemplate a variety of issues regarding religious markets from a supply-and-demand framework. As detailed in North (2007), the supply-and-demand model is too simplistic to capture important factors in religious markets, especially variations in the traits of different religions and in the expectations placed on members.

This paper overcomes the existing weaknesses in the literature on the economics of religion in two important ways. First, we develop a multidimensional model of denominational choice that mixes the literature on product differentiation with the Azzi/Ehrenberg/Sullivan household production approach to religious choice. Second, we employ common tools from the fields of marketing and economics to empirically examine the proposition that religious brands compete in similar fashion as paradigmatic consumption brands like Tide, Starbucks, and Apple.

A PRODUCT ATTRIBUTES MODEL OF RELIGIOUS CHOICE

Any economic model of religion requires that economic actors make choices in a rational way. That is, individuals make decisions about their involvement in religion in much the same way

they make decisions about their involvement in other markets. Individuals weigh the costs and benefits of religious participation with the same rational thought process that they use to guide their participation in labor, goods and services, and financial markets. By simply allowing for the possibility that people can make rational decisions about religion, Iannaccone, Stark, and Finke (1998) concluded that "a rational/economic approach might yield new insights and more accurate predictions concerning religious behavior, institutions, and trends." This insight has led to the burgeoning literature on the economics of religion.

Standard economic theory proposes that consumer choice is based on selecting between products. The consumer chooses the bundle of products that maximizes utility within a budget constraint. Lancaster (1966) theorized that consumer choice is actually based on consumer preferences for the characteristics (or attributes) of a brand of a product. Gwin and Gwin (2003) refer to this theory as the product attributes model. In Lancaster's original model, the consumer chooses the quantity to purchase of each brand in the vector (x) that maximizes her/his utility (U) for the vector of desired product attributes (z). The choice is subject to the consumer's budget constraint (k), which must be greater than or equal to each brands' price (p) in combination with the quantity of each brand purchased (x). Product attributes (z) arise from the transformation of consumption activity (y) with technology B which is a matrix of activity-to-attributes transformation coefficients. Similarly, brands (x) arise from the transformation of consumption activity (y) with technology A which is a matrix of activity-to-brand transformation coefficients. To analyze religious choice, we go beyond Lancaster's original product attributes model by incorporating a household production function similar to that in Azzi and Ehrenberg (1975) and Sullivan (1985).

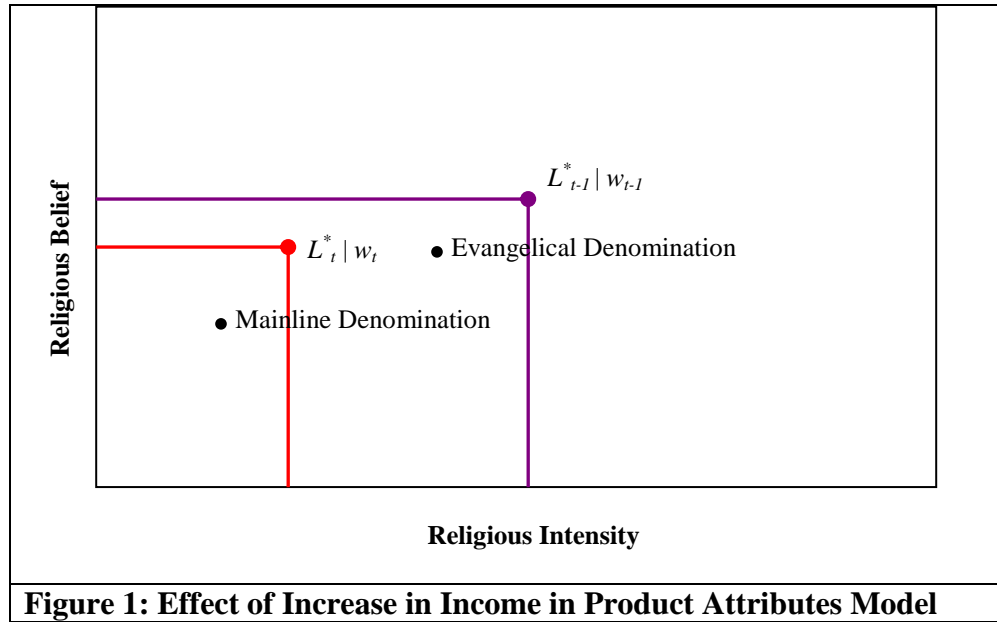
In our model, consumer utility is derived from non-religious consumption bundles at time t (c_t) and religious product attributes (z_t) until death at known time n . Households allocate time among consuming a non-religious composite product v_t with price p_v and requiring consumption time h_t , participating in brand of religion x_t with price p_x requiring attendance time r_t , and work l_t at wage rate w_t . Religious product attributes (z_t) arise from the transformation of religious activity (y_t) with technology B which is a matrix of religious-activity-to-attributes transformation coefficients and r_t time devoted to religious activities. Religious brands (x_t) arise from the transformation of religious activity (y_t) with technology A which is a matrix of religious-activity-to-brand transformation coefficients. The choice is subject to the consumer's budget constraint given by the present value of income. Let i be the constant market rate of interest and T be the time available to the household per period t . The consumer's problem can now be represented as

$$\begin{aligned}
 \max_{h_t, r_t, l_t} U &= U(c_t, z_t) & (1) \\
 \text{s.t.} \quad c_t &= c_t(v_t, h_t), \\
 z_t &= z(By_t, r_t), \\
 x_t &= Ay_t, \\
 \sum_{t=1}^n \left(\frac{p_v v_t + p_x x_t}{(1+i)^{t-1}} \right) &= \sum_{t=1}^n \left(\frac{w_t l_t}{(1+i)^{t-1}} \right), \\
 h_t + r_t + l_t &= T \text{ for all } t, \\
 \text{and } v, x, y, z &\geq 0.
 \end{aligned}$$

The solution to the consumer's problem can be represented by the solution to the Lagrangian $L^* = L(h_t^*, r_t^*, l_t^*)$. One result of the first-order conditions is

$$\frac{(\partial U / \partial z_t)(\partial z_t / \partial r_t)}{(\partial U / \partial z_{t-1})(\partial z_{t-1} / \partial r_{t-1})} = \frac{w_t}{w_{t-1}(1+i)}. \quad (2)$$

Equation (2) implies that religious participation decreases as opportunity cost increases. Given the typical age-wage profile, Azzi and Ehrenberg (1975) argued that equation (2) implies that religious participation will have a U-shaped relationship with age, first decreasing and later rising with age. Employing the product attributes model adds another dimension to the interpretation of equation (2). Higher opportunity costs can now also imply that consumers may switch to an alternative set of religious product attributes. An increase in income will increase the opportunity cost of participating in religion, which could lead the consumer to switch to a church brand with lower religious attributes. An example of this is depicted in Figure 1.



In Figure 1, a consumer values two attributes of religion, beliefs and intensity. In period $t-1$, when the consumer earns wage w_{t-1} , the consumer's optimal solution is represented by the point L_{t-1}^* . The point L_{t-1}^* also defines the outer boundary of combinations of product attributes that the consumer can "afford," such that the consumer will choose the most desirable brand in the set of affordable attribute combinations. In period $t-1$, the consumer chooses the Evangelical Church over the Mainline Church. In period t though, the consumer's wage increases to w_t and raises the opportunity cost of participating in church activities. The consumer's optimal combination of product attributes in period t is represented by L_t^* , and the outer boundary of the set of affordable attribute combinations shifts in towards the origin. Thus, in period t , the consumer chooses to attend the Mainline Church because the more intense Evangelical Church is no longer

“affordable.” As a general statement, Evangelical Protestant denominations have higher belief and intensity measures than Mainline Protestant denominations, while the average income of Mainline Protestants is higher than that of Evangelical Protestants. The product attributes model provides an explanation of these stylized facts. Cross-sectional data limits us to examining whether higher income is associated with participation in less-intensive churches. We do indeed find that incomes are higher in Mainline churches than in Evangelical churches, a strong indicator that opportunity costs do have a role in religious choice.

In the remainder of the paper, we examine empirical data to determine whether religious markets can be represented in product attributes space. We conduct factor analysis on a wide array of survey responses to identify important product attributes of religion. We then identify clusters of consumers representing major segments in the American market for religion. As the data show, there are identifiable segments defined by product attributes, which suggests a product attributes approach to religion could yield important insights into our theoretical understanding of religion.

DATA, EMPIRICAL METHODOLOGY AND ANALYSIS OF RESULTS

Given requirements for brevity, much of this section (and other parts of the paper) are heavily abbreviated. The full version of this paper is available from the authors upon request.

We identify consumer preferences and product attribute positioning for religious brands using data from two surveys: 1) Baylor University's 2006 *Longitudinal Survey of Religious Behaviors and Values* (LSRBV), which was funded by the John Templeton Foundation, and 2) The Pew Forum on Religion & Public Life's 2008 *U.S. Religious Landscape Survey*. In our empirical analysis, we consider a wide variety of attributes of religion, including measures of participation, social networking, commitment, belief, and intensity. Not surprisingly, many of the measures of religious product attributes are highly correlated. This allows us to use factor analysis to reduce the dimensionality needed in our empirical analysis. The data from each survey reduce to two essential factors that roughly measure belief and intensity.

We first present our analysis of the LSRBV data, which followed three phases. The first phase was to determine the factors that best reflect the consumers' religious behaviors and beliefs. (Note: “Consumers” will be used throughout the analysis to describe the respondents since the focus is on their consumption and choice of religion. The use of “consumers” will also denote the LSRBV survey.) Exploratory factor analysis was used to identify and interpret the best factor solution for the data. The two-factor solution best fits existing theory and interpretation. Two factors emerged: *belief* and *intensity*. The belief factor assesses personal views of God, religious salvation, and other central elements such as heaven and hell, angels and demons. The intensity or commitment factor represents the activities and contributions by the consumer to his or her church. These activities represent a cross-section of religious behaviors including monetary and time contributions to the church, as well as frequency of participating in religious services and activities at the church as well as away from church.

Phase 2 of the analysis of the LSRBV involved the use of cluster analysis to identify segments that define consumers' choice of religious denomination. Using K-Means cluster analysis, we looked at size and interpretability of cluster solutions based on the two factors defined above. Five clusters emerged as shown in Figure 2.

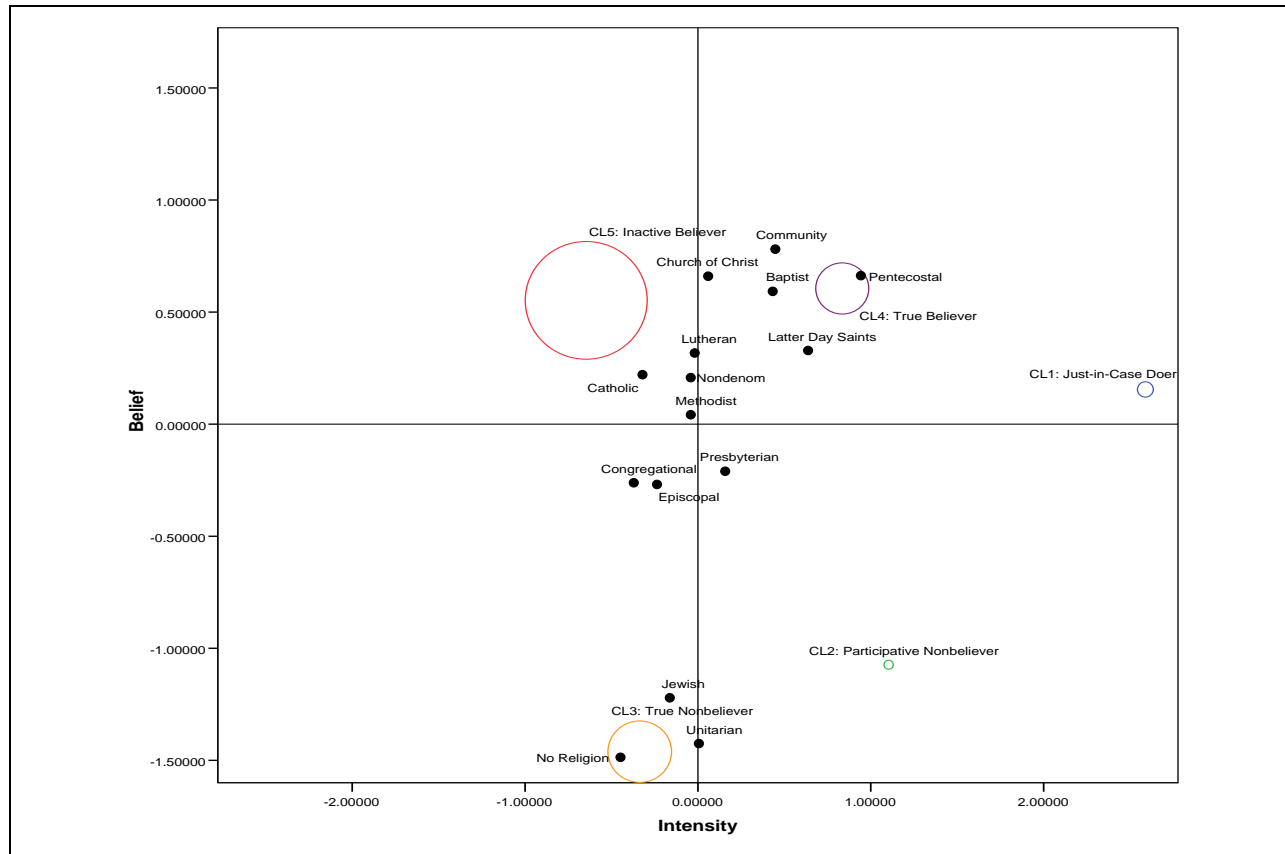


Figure 2: Perceptual Map of Religious Choice-Baylor Religion Survey

Circles CL1-CL5: Clusters of Consumer Religious Preferences. Dots: Religious Brand Positionings. Source: *Longitudinal Survey of Religious Behaviors and Values (LSRBV)*, 2006, Baylor University. Religious classifications and sample sizes are available from the authors upon request.

Most of the segments are defined by being high on one factor and low on another. For example, Cluster 1 is very high on intensity or commitment but relatively low on belief. This segment can be defined as a “just in case” doer. Although this consumer does not hold strong beliefs, he or she is actively involved in religious activities in and out of the church – possibly done just in case the church’s teachings are true. The second cluster is a little unexpected: a non-believer who actively participates in religious activities. While our research provides no clear explanation for this cluster, it could be a more extreme version of the just in case doer. There could be other reasons as well: the consumer could be using church to build social or business contacts, or the consumer could be actively participating in order to placate family members who are “true believers.” Cluster 3 is the true non-believer. This consumer does not believe in religion and does not participate in religious activities. Cluster 4 is the true believer, who has strong beliefs and participates actively in religious activities. The inactive believer has a strong belief, but does not choose to participate in religious activities. These segments show varying degrees of belief and intensity across consumers, with Clusters 3, 4, and 5 being fairly large. These variations in desire for product attributes explain why the unrestricted U.S. religious market is characterized by a wide variety of religious denominations.

Phase 3 of our analysis of the LSRBV looks at how religious denominations scored on the two factors. The relative positioning of these religious denominations are displayed in the perceptual

map in Figure 2. As can be seen, denominations such as Baptist, Latter Day Saints, and Pentecostal are strong on both belief and intensity, while “no religion,” Unitarian/Universalist, and Jewish are low on both belief and intensity. These religions are best positioned for the True Believer and True Non-Believer segments, respectively. Catholics, Lutherans, and nondenominational Christians are strong on belief, but do not participate actively in religious activities. These are best positioned for the Inactive Believer. The “Just in Case” Doer and participative non-believer segments are not close to any specific religion, and likely just select whichever denomination or church is most convenient or appropriate to their lifestyle since belief is not central to their practice.

We also sought to evaluate the positioning of religious denominations from another independent survey. The positioning established in the LSRBV survey is somewhat confounded by development of clusters and denominations as well as our relatively small sample size for many of the denominations. We searched for a survey that included all religions, had very large sample sizes, and provided measures of both belief and intensity. The Pew Forum’s *U.S. Religious Landscape Survey* accomplished all of these objectives. As before, two factors emerged in this analysis: belief and intensity. Since the Pew Forum survey encompassed greater representation of more religious denominations, the perceptual map of Figure 3 has stronger concentrations of the religious denominations in the quadrants.

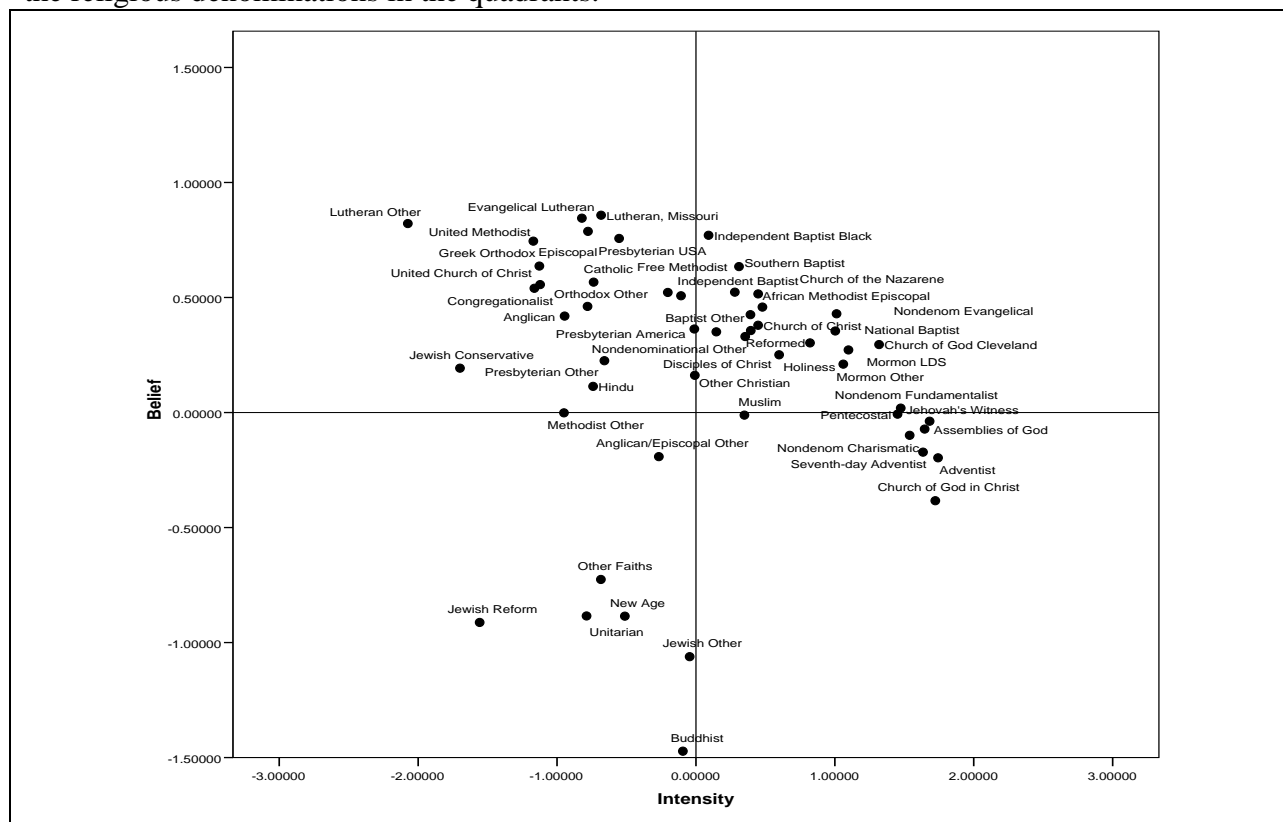


Figure 3: Perceptual Map of Religious Choice-Pew Forum Study

Dots: Religious Brand Positioning. Source: *U.S. Religious Landscape Survey*, 2008, The Pew Forum on Religion & Public Life, <http://religions.pewforum.org/>. Details on religious classifications and sample sizes are available at the Pew Forum website.

Overall, the representations closely reflect those observed for the LSRBV survey. Baptist, LDS, and other evangelical denominations cluster strongly in the strong belief and strong intensity quadrant. Catholic, Lutheran, Methodist, Presbyterian, and Orthodox religions cluster strongly on high belief but low intensity. Jewish, Unitarian, New Age, Buddhist, and Other Faiths score lower on both Belief and Intensity. Adventists, Church of God in Christ, Nondenominational Charismatic, and Assemblies of God denominations score high on intensity but relatively low on belief to round out the quadrants of the perceptual map. The similarity of positioning for the majority of the religious denominations in both the LSRBV survey and the Pew Forum survey show a stability for the two dimensions of belief and intensity in assessing religious choice.

CONCLUSIONS

We have developed a new approach to modeling religious choice combining the product attributes and household production approaches. The result is a model that can provide insights into choice between denominations that are similar in one or more dimensions. By adding in the possibility of multiple attributes that each consumer values differently, a foundation is laid for understanding denominational choice. Moreover, we demonstrate one application of the model to a life-cycle change by showing how a change in income can lead to a change of denomination.

Our empirical analysis confirms that religious choice can be viewed as an attribute-based selection process. The results across two surveys show that belief and intensity are both key dimensions for consumer choice of religious denomination. The belief dimension encompasses personal views about the existence and importance of God and other supreme beings, the Bible, and religious salvation. The intensity dimension measures participation in religious activities such as attendance, prayer/meditation, reading of sacred books (such as the Bible, Koran, or Torah), and contribution of time and money.

So, how do consumers choose among these religious denominations? We identify 5 segments of religious consumption based on differences in belief and intensity. True believers fall closest to the evangelical faiths (e.g., Baptist, Latter Day Saints, and Pentacostal), while true non-believers encompass no religion in addition to universalist, new age and Jewish faiths. The inactive believers are more likely to be Catholic, Episcopalian, and non-denominational Christian. The other two segments – lower in belief yet relatively high and extremely high in intensity – do not cluster around any specific religion. These consumers are likely to choose the religious denomination or church most convenient or reflective of their lifestyle, maybe even the religion of the true believers in their families. This segment may participate in religious activities for social, business, security, or family reasons.

Our findings support the importance of understanding how consumers choose among different religious traditions, and this can have some important applications. Understanding the dimensions of this choice can guide religious denominations in developing the appropriate combination of belief and religious activities for their target consumer. It can also help denominations determine if they need to re-position their church to better meet their consumers' needs or grow as a church.

REFERENCES

- Azzi, C. and Ehrenberg, R. (1975). Household Allocation of Time and Church Attendance. *Journal of Political Economy* 83(1), 27-56.
- Breault, K. (1989a). New Evidence on Religious Pluralism, Urbanism, and Religious Participation. *American Sociological Review* 54(6), 1048-1053.
- Breault, K. (1989b). A Reexamination of the Relationship between Religious Diversity and Religious Adherents. *American Sociological Review* 54(6), 1056-1059.
- Chaves, M. and Gorski, P. (2001). Religious Pluralism and Religious Participation. *Annual Review of Sociology* 27(1), 261-279.
- Ekelund, Jr., R., Hebert, R., and Tollison, R. (2006). *The Marketplace of Christianity*. Cambridge, Mass.: MIT Press.
- Ekelund, Jr., R., Hebert, R., and Tollison, R., Anderson, G., and Davidson, A. (1996). *Sacred Trust: The Medieval Church as an Economic Firm*. New York: Oxford University Press.
- Finke, R. and Stark, R. (1988). Religious economies and sacred canopies: religious mobilization in American cities, 1906. *American Sociological Review* 53(1), 41-49.
- Goff, B., and Trawick, M. (2008) The Importance of Brand and Competition in Defining U.S. Religious Markets. *Southern Economic Journal* 74(4), 1035-1048.
- Gwin, C. and Gwin, C. (2003). Product Attributes Model: A Tool for Evaluating Brand Positioning. *Journal of Marketing Theory and Practice* 11(2), 30-42.
- Iannaccone, L. (1998). Introduction to the Economics of Religion. *Journal of Economic Literature* 36(3), 1465-1495.
- Iannaccone, L., Stark, R. and Finke, R. (1998). Rationality and the "Religious Mind." *Economic Inquiry* 36(3), 373-389.
- Lancaster, K. (1966). A New Approach to Consumer Theory. *Journal of Political Economy* 74(2), 132-157.
- North, C. (2007). Review of: The Marketplace of Christianity by Ekelund, Jr., R., Hebert, R., and Tollison, R., *Faith & Economics* 49:56-60.
- North, C. and Gwin, C. (2004). Religious Freedom and the Unintended Consequences of State Religion. *Southern Economic Journal* 71(1), 103-117.
- Olson, D. (1999). Religious Pluralism and US Church Membership: A Reassessment. *Sociology of Religion* 60(2), 149-173.
- Stark, R. and Bainbridge, W. (1987). *A Theory of Religion*. New York: Peter Lang.
- Stark, R. and Finke, R. (2000). *Acts of Faith: Explaining the Human Side of Religion*. Berkeley: University of California Press.
- Sullivan, D. (1985). Simultaneous Determination of Church Contributions and Church Attendance. *Economic Inquiry* 23(2), 309-320.
- Voas, D., Olson, D., and Crockett, A. (2002). Religious Pluralism and Participation: Why Previous Research is Wrong. *American Sociological Review* 67(2), 212-230.