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Religion, Religiosity, and the Consumption

Of Timesaving Foods

by

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Of Timesaving Foods*

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Abstract:

This paper studies the effect of the intensity of religiosity within a specific religion affiliation on the consumption of food inputs. Religions set a system of rules that established social norms; religiosity determines the degree of conformity with these social norms. Religion's norms affect the choice of meals directly by forbidding certain foods and indirectly by imposing cultural and social norms that affect income, time constrain and attitude toward leisure. The paper combines the family production framework with the concept of social norms and derive several hypotheses that are tested with data collected in Israel on purchases of four types of chicken: fresh whole, fresh cut , frozen whole and frozen cut. Frozen versus fresh stands for modernity versus convenience, whole versus cut confronts price, cooking time, income and perception of morality of leisure. We find that in some cases, preferences for traditional lifestyles dominate immediate economic considerations.

Keywords: religion, religiosity, convenience, moral, time, social norms.

RELIGION, RELIGIOSITY, AND THE CONSUMPTION
OF TIMESAVING FOODS

Introduction

This paper studies the effect of the intensity of religiosity within a specific religion affiliation on the consumption of food inputs. In the day to day life religions are social networks with their distinct codes of behavior and social norms. Some social norms are derived from beliefs and others were formed in order to differentiate between members and non members. The equivalence of traditional values and religiosity is common to many religions, the differences religions lays in the interpretation what symbolizes tradition. Religiosity determines the conformity with the social norms. Religions rules and norms affect the choice of meals directly by forbidding certain foods and indirectly by imposing cultural and social norms that affect income, time constrain and attitude toward leisure. In this paper we analyze the indirect rules and social codes and their effect on the consumption of four forms of the same food input: fresh whole, fresh cut, frozen whole and frozen cut. Frozen versus fresh stands for modernity versus convenience, whole versus cut confronts price, cooking time, income and perception of morality of leisure. The relationship between religion, religiosity, time constrain and restriction on leisure time call for integrating the social norms framework with the concept of family production (Becker, 1965). Family production has been offered in order to explain family choices using micro economic principles. In its application to food choices, a single decision maker allocates the joint income and the aggregate time resources between purchases of raw food that requires investment of cooking time and processed food that needs less time of preparation but is more expensive. This framework

was extended to analysis of family choices explicitly incorporated constraints generated by institutional arrangements, such as marriage, divorce, polygamy, and other customs and practices, on resource allocation (Becker's , 1981). Family size, gender, and social customs induce positive subjective costs that affect consumption and labor choices (Strauss and Beegle, 1996).

The subjective cost of economic variables and the willingness to sacrifice the present conveniences for some future idealistic purpose is not the sole property of "conventional religions" and it shared by individuals who believe in vegetarianisms, environmentalism, and many social movements –such as anti globalization, anti-genetically modified foods and individual altruistic behavior that starts in donation and ends up in generous tipping in restaurants. Tipping or to be more precise, the percentage of tipping is a matter of social standards that vary between continents.

Social norms affect individual choices thought an observable cumulative stock variable such as in Akerlof (1980) who suggested that choices of individuals take into account the impact of their activities on family reputation, or via internal unobservable conscience, and it had been uses to explain medical choices (Goodmons and Glaudin, 1971; Osterhus 1997), peer review (2005) and tipping (Azar, 2004). Religion form social norms that affects choices (Kanekar and Merchant, 2001). The overview paper by Asp (1999) suggests that scholars beginning with Mead (1943) emphasize the importance of cultural practices in affecting food choices, and religion was listed as an important contributor to cultural practices. One way through which religion affects food consumption is by banning certain foods. Bell (1968) found that Pope Paul VI's 1966 apostolic decree, which relaxed the Catholic Church's rules demanding abstinence from

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meat consumption on Fridays, led to a significant decline in the demand for fish that threatened the viability of the fishing industry in the northeastern United States.

Religion has a less obvious impact on food consumption by affecting preferences and establishing norms of behavior. Consumption patterns can be affected by determining: (i) who makes which purchasing decisions and (ii) what kinds of products are preferred. A general finding is that devout followers have a more traditional value system (Wilkes, Burnett, and Howell, 1986; Delener, 1994; and Schiffman, Dillon, and Ngumah, 1981). Being religious is also related to conservatism and risk aversion, suggesting that it leads to a preference for national brands and a low willingness to try generic products (Delener, 1990; Wilkes, Burnett, and Howell, 1986; Hirschman, 1981). Social norm considerations have not been incorporated in studies of food consumption not directly nor indirectly though the decision to work outside the household.

The combination of the social norm and the family production yields several hypotheses, which point out several scenarios where individuals will divert from choices that are dictated by simple economic rules. We test empirically out research hypotheses using data taken from a survey held in Israel in 1999 and surveyed 388 individuals affiliated with three religions (Judaism, Muslimism, and Christianity).

The next section reviews the relevant literature in this area. We then present an economic model and derive research hypotheses, followed by the statistical model, a discussion of the survey data, and a presentation of the empirical model. The last section presents conclusions and future research directions.

Modeling Individual Choices

Gorman (see LaFrance) ,Becker (1965), Michael and Becker modeled consumers' choice of meals (commodities in their terminology) as if a family was a small size factory: the family chooses market goods, and in-house labor inputs in order to maximize the utility from the consumption of food, leisure, and consumption of other goods. We integrate the family production and the social norm frameworks, which assume that besides utility from traditional components individuals derive utility from conforming to social norms (Azar, 2004). Specifically the utility function is represented by

$$U\left(C,N,L,E\right),$$

where C is the consumption indicator, which measures the benefits from consumption of meals. C is the product of quantity of meals and quality of each meal. N are normative benefits derived from food consumption, L is leisure, and E is other expenditures.

The utility function is assumed to be concave in all elements. The consumer can choose among different types of meals and m_i denotes the amount of meals type i consumed during a period. The indicator of food consumption is given by $C = h^c\left(m_i,...,m_I\right)$. We assume that the marginal contribution of meals to food consumption is non decreasing, i.e., $h_{m_i}^C = \partial h^C/\partial m_i \geq 0$. It is plausible to assume that C is concave in the m_i's.

Consumers are members of communities with distinct lifestyles, beliefs, and norms about food. Food has always been considered to symbolize affiliation with society (Levy, (1981); Luna and Gupta (2001)). Consumption of food that symbolizes conformity with cultural values add "normative credits" to individuals either by others

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who observe him/her, or by an "internal accounting" based on personal beliefs or by beliefs held that social norms represents some wisdom (Aronson et. al, 1999).

Let $N = h^N(m_i, ..., m_N)$ be an index of normative outcomes of consuming a portfolio of meals. Some meals are viewed favorably, and for them $h^N_{m_i} \geq 0$, while others are viewed negatively with $h^N_{m_i} \leq 0$. It may be useful to assume that h^N is linear in m_i, so that $h^N = \sum_{i=1}^{K} m_i q_i$, where q_i is an indicator of normative contribution of meal i, and K is the total number of meals consumed .

We consider the utility of the cook, as he/she makes the meal choices. Each meal requires preparation time denoted by e_i. The total time available is T, and if the cook is working out of home, the labor time is denoted by b, otherwise b=0. Thus, leisure is given by $L = T - b - \sum_{i=1}^{T} m_i e_i$. Finally, the expenditures on other goods besides the meals is equal to

$$E = I + wb - \sum_{i=1}^{n} P_i m_i,$$

where I is the fixed income from the perspective of the cook, which includes spouses salary, and wb is labor earning (labor hourly wage multiplied by hours of work).

We assume that individuals have a perfect knowledge about the affect of their consumption on norms but they vary in the weight (importance) they give to behavioral norms. All Muslims know that drinking wine is forbidden, but only Muslims with strong beliefs, i.e., high intensity religiosity, will conform with this restriction. Let α be a measure of weight given to the normative outcome, and $0 \leq \alpha \leq 1$. Similarly, there may

be differences among individuals with respect to the weight given to leisure, as we will

see later. Let β be the leisure weight. With this definition, the utility function is

$U(C,\alpha N,\beta L,E)$, and the meal selection is determined solving

(1) $\quad \max_{m_i \cdot m_K} U\left(h^C\left(m_i,...,m_K\right),\alpha h^N\left(m_i,...,m_K\right),\beta\left(I-b-\sum_{i=1}^{K} m_i e_i\right),I+wb-\sum_{i=1}^{K} m_i p_i \right).$

Assuming an internal solution, the optimal level of the ith meal is determined by

the solution of:

(2) $\qquad \dfrac{\partial U}{\partial C} h_{m_i}^C + \dfrac{\partial U}{\partial N} h_{m_i}^N - \dfrac{\partial U}{\partial L}\beta e_i - \dfrac{\partial U}{\partial E} P_i = 0,$

Rearranging equation (2) yields:

(3) $\qquad \dfrac{\dfrac{\partial U}{\partial C}}{\dfrac{\partial U}{\partial E}} h_{m_i}^C + \dfrac{\dfrac{\partial U}{\partial N}}{\dfrac{\partial U}{\partial E}} h_{m_i}^N - \dfrac{\dfrac{\partial U}{\partial L}}{\dfrac{\partial U}{\partial E}} e_i - \dfrac{\dfrac{\partial U}{\partial L}}{\dfrac{\partial U}{\partial E}} e_i = P_i.$

Dividing all the elements of equation (2) by the marginal utility of the other

expenditures $\left(\dfrac{\partial U}{\partial E} \right)$, yields a representation of the optimality condition in monetary

terms. The optimal choice of m_i occurs when the value of marginal benefits of

consumption plus the value of marginal benefits of normative behavior minus the value

of marginal change in leisure is equal to the price of inputs needed to prepare meal i.

While we do not conduct formal comparative statics, note that condition (2)

suggests that in addition to the substitution and income effects that determine the

response of demand curves, here we have other considerations. The substitution effect

implies that higher price leads to reduced consumption of affected meals, and the income

effect suggests that increase in income may lead to increased consumption of meals that

are higher "luxury" or "normal" foods, while reducing consumption of inferior goods.

These two elements solely apply when $\alpha = 0$ and $\beta = 0$. When both α and β are

positive, two other factors affect demand—norms and leisure.

Figure 1 illustrates how the of optimal m_i is determined. In cases of $\alpha = \beta = 1$,

optimal m_i is at A. If both α and β are positive and the ith good is viewed favorably,

from a normative perspective, optimal outcome is at C. If $\alpha = 0$ and $\beta = 0$, the leisure

effect will reduce demand and the optimal outcome is at B. If the normative benefits are

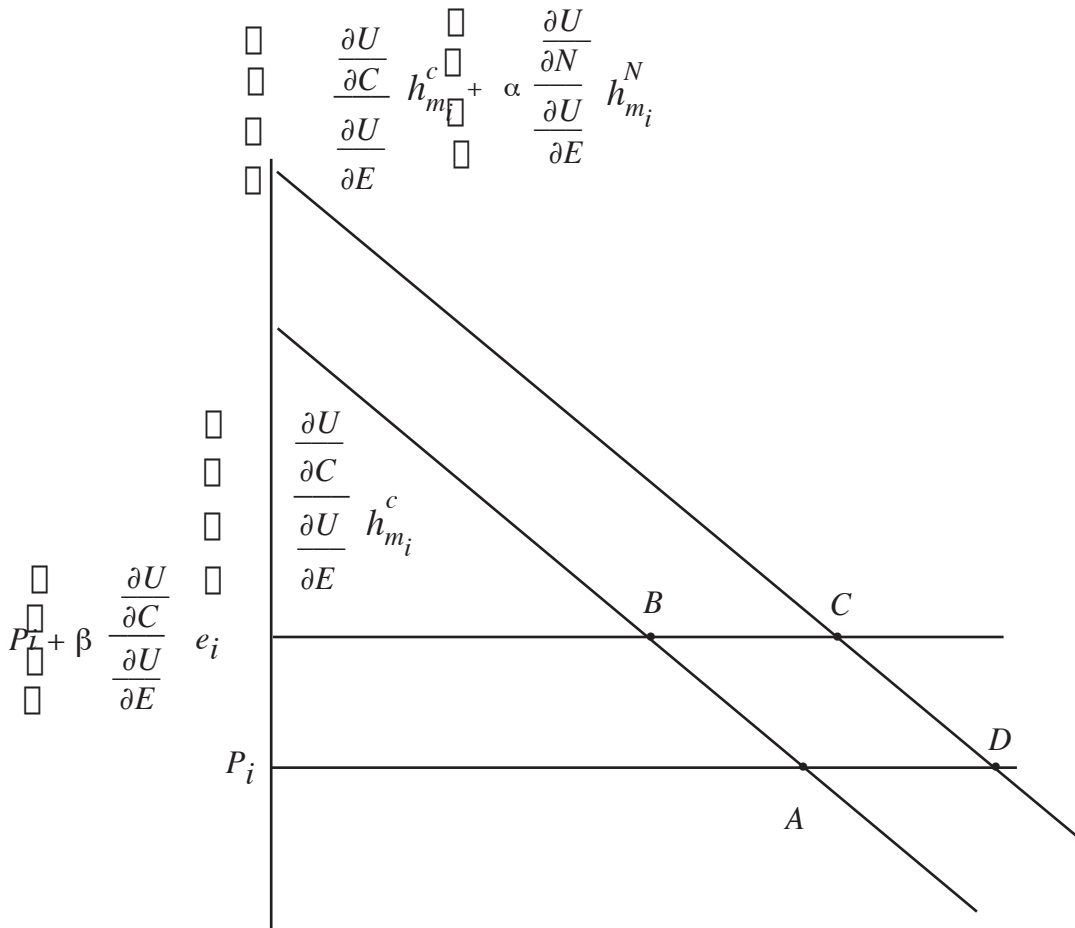considered but leisure costs are ignored, higher levels of consumption occur at D.

Figure 1

Our analysis suggests that if a meal is looked upon favorably from a normative perspective, it will increase its demand; and if it is looked upon unfavorably, it will reduce its demand. The normative effect increases for individuals who are more devoted to the norm. Individuals who value leisure may consume less of labor-intensive meals, but this effect may be reduced for individuals with lower valuation of leisure.

In this paper, we study the consumption of various categories of a purchased input (chicken), which is affected by time allocation considerations, price and conformity with social norms. We distinguish between frozen and fresh and whole and cut chicken. Frozen meats are considerably cheaper than fresh meat, and the price difference is in the range of 30% to 50%. Frozen chicken has about a one-year shelf life, while fresh chicken has an approximately three-day shelf life. Thus, buying frozen meat saves shopping time, as a month's supply of chicken can be purchased at one shopping trip. In addition to shopping time, frozen food is by its nature increases the flexibility of the cook and thus suits better to the modern and time constrained generation. Cooking with fresh ingredients demands planning and reduces the flexibility of the cook. The meal has to be designed ahead, the ingredients are to be bought at the same day or a day before and something goes wrong with the time table the fresh ingredients find there place in the garbage. It is much easier to decide what is desired to be cooked subject to availability in the freezer, pull the input from the freezer, defrost it in couple of minutes and start cooking. Frozen food has its downsides – the food is less tasty and it indicates modernity (Hamilton). Frozen food thus symbolizes modern life style and explicitly it is perceived to be evident for preference of career over taking responsibility in the "old fashion" for household chores.

In choosing between cut and whole chicken, buyers consider the tradeoffs between the higher cost of cut chicken and the extra time and effort spent to cut a whole chicken. The issue of difference in taste of the chicken between cut and whole chicken are not relevant and the only consideration is time versus money. Within the same social norm group, high-income families, and individuals with lower productivity on the kitchen (older individuals and cooks who do not enjoy cooking) are more likely to purchase a whole chicken. Social norm with regards to leisure time, and more binding time constraint, which is the outcome of social norms with regards to working inside and outside the household, changes β and the alternative cost of time.

We consider the demand of individuals who belong to three religions: Judaism, Islam, and Christianity. Within these groups, we distinguish between degrees of religiosity. The Jews and Muslims are divided into secular, conservative, and orthodox, and the Christians are divided by secular and conservative.

Social norms affect the decision of traditional – religious families with regards to females work outside the household. Ultra orthodox and religious Jewish women are encouraged to work outside the household and free husband'' time to learn holy studies. However, the wish to work is not automatically translated into action as of lack of modern education . Conservative Jews and secular female Jews are not subject to any norm. The percentage of participation in workforce among orthodox and ultra orthodox women 38% and in the secular and conservative segments it was 43%. In contrast to the Jewish society the Muslim society in the middle east including Israel encourage women to work inside the household and discourages working outside the household and only

14% of Muslim women are working outside the household[1]. In 2003, the percentage of Muslim women rose to about 20%[2] and the proportion of religious women have also increased. The majority of Muslim women who work outside the household are single females leaving with their parents[3] and once they are married their participation in the workforce becomes insignificant.

The direct consequence of more time spent outside the household in workplace is lesser time to be allocated between leisure and cooking. Thus religious Jewish women will have lesser time to allocate between cooking time of food and leisure relative to traditional Muslim females who conform with the social norm of working only in the household.

More than 50% of the ultra orthodox families are poor[4]. Israeli Muslims are also poorer than the average of the population though there is an improvement. About 40% of the Muslims leaving in Israel are regarded to be poor. There is not a significant difference between secular and conservative Jews with regards to income. Thus, Low income and no binding constrain (Muslim) would prefer whole over cut. High income and high binding constrain (Conservative and secular working women) would prefer cut chicken. Low income and high time constrain would prefer cheap time saving products (frozen cut).

Social and cultural norms apply to preference of fresh over frozen meat. Literature provides evidences that more traditional societies in general and Muslim in

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[1] http://spirit.tau.ac.il/public/position-papers/Yashiv.pdf
[2]

[3] http://www.knesset.gov.il/protocols/data/html/maamad/2001-12-11-02.html
[4]

particular prefer fresh over frozen meat[5]. Fresh meat is more expensive than frozen, but it is conform with social norms pf traditional values and thus the income effect and the social norms have opposite effect on the choice of between fresh and frozen chicken meat Muslim families. In contrast ultra orthodox Jewish household that are low income but are not bounded to social norm with regards to fresh/frozen would prefer frozen chicken. The last hypothesis pertains to productivity. Productivity of the cook affect the time spent on cooking. Thus lower productivity would increase the share of cut food. Elder individuals are on average with lower productivity and therefore, we expect that preference toward cut over whole increases with age.

With this background, we can form several hypotheses: (1) Secular Jews are likely to have a higher tendency to consume cut, fresh chicken. This is the result of both income and leisure effects. (2) Conservative Jews are more likely to consume whole, fresh chicken. Women in this group are less likely to work outside the home, but the group has sufficient income to purchase fresh chicken. (3) Orthodox Jews are more likely to consume frozen, whole chicken both because of the income effect and the timesaving effect. (4) Orthodox Muslims are more likely to consume whole, fresh chicken. They will purchase whole chicken because of income consideration and the less likelihood of women working outside the home, and are more likely to buy fresh chicken because of the norm effect. (5). Older individuals will prefer cut over whole chicken.

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[5] http://www.marketmaker.uiuc.edu/PDF/ethnicgoat.pdf,
http://www.farmfoundation.org/teal/david_anderson.pdf, www.icba.org.il/mazagot-month/bakar-tnuva.pps

Empirical Model

The econometric model aims at estimating the effects of religious affiliations (Jewish, Muslim or Christian), religious intensity (secular, conservative, and orthodox), income, gender, age, JOC (which is measured as self-reported enjoyment from cooking), and leisure time (personal assessment of leisure time) on the demand for different types of chicken (frozen/fresh, whole/cut). Since different families consume different quantities of chicken, we normalize quantities by using shares of chicken with characteristic *i*, thus,

$$\text{Share of chicken with characteristic } i \equiv \frac{\text{Consumption of chicken with characteristic } i}{\text{Total chicken consumption}}.$$

Since time constraint is affected by religion and religiosity, we estimate the effect of leisure time differentiated by religion intensity of beliefs. The effect of JOC is differentiated by religion, intensity of beliefs, and gender. The regression equation may be summarized for the general consumer as:

$$\text{Share of chicken with characteristic } i = v_{0i} + v_{1i} \text{ Age} + v_{2i} \text{ Income} + v_{3ij} \text{ R} +$$
$$(1) \qquad v_{4ij} \text{ Leisure (R)} + v_{5ik} \text{ Gender} + v_{6ik} \text{ Joy of cooking(Gender)},$$

where, the *v*'s are estimated coefficients, *i* refers to the four types of chicken available, *j* represents different religion types (affiliation and devoutness), R is a measure of religion and religiosity, and *k* represents gender. The four equations are estimated using the Tobit analysis to account for limiting zero values.

The Survey

The data for this research come from a face-to-face survey conducted in 388 households in the four largest Israeli cities, as well as in several rural villages. Within the

cities, survey locations were selected according to common stratification methods representative of income, religious affiliation, and degree of observance within Israel. Within each household, the adult who shops more frequently was asked to respond. The data were processed to produce the share of consumption of each of the four types of chicken (McWilliams et al., 2002).

Table I gives the summary statistics of the socioeconomic variables used in this analysis. The average age of respondents was 40 years, the youngest shopper interviewed being 15 and the oldest 81. We differentiated among three categories of religiosity (secular, conservative, and orthodox) for Jews, Muslims, and Christians. These categories are commonly used and understood in Israel, so there is little likelihood of confusion by the respondents as to their meanings. The interesting finding is that most of the Jewish respondents defined themselves as secular, while only the minority of Muslims defined themselves as secular. Of the respondents, 78% were Jewish (of which 60% were secular, 23% were conservative, and 16% were orthodox); 19% were Muslim (of which 36% were secular, 43% were conservative, and 21% were orthodox); and 3% were Christians.

Take in Table I

Results

Our statistical analysis examines how consumer characteristics, in particular, religious observance, gender, and JOC determine the share of each type of chicken consumed (frozen whole, frozen cut, fresh whole, and fresh cut). Table III gives the estimated determinants of the four shares. We have three categories of income (low,

average, and high), two categories of leisure time (little versus sufficient), and two categories of JOC (high versus low). In exploratory runs, we found a small difference in behavior between orthodox and conservative Muslims, so they are combined in a "religious" category. We found small differences between secular and religious Christians, and we combined them into one category. The base group consists of female respondents in secular Jewish families with average income, sufficient leisure time, and low JOC. Tobit was used to estimate the equations. Likelihood ratio tests based on the log-likelihood functions for the equations reject the null hypothesis that all coefficients in the full models are equal to zero.

Our behavioral model suggests three effects that may work in opposite directions: income, time, and aversion to modernity. For example, for ultra-orthodox followers of all religions, income and aversion to modernity will increase the likelihood of purchasing whole chicken. The income and time constraint effects will increase the likelihood of purchasing frozen chicken, while the modernity aversion will increase the likelihood of purchasing fresh chicken. The empirical estimation will identify the relative importance of these effects.

As Table II suggests, there is no significant difference between orthodox and secular Muslims with regards to their consumption of fresh and frozen chicken. Muslims eat significantly less frozen chicken. Both religious and secular Muslims have negative and significant coefficients for frozen parts (-0.3199 and -0.4024), respectively, and negative coefficients (-0.1138 and -0.1646) for frozen whole. Muslims also consume less fresh cut chicken and, on the other hand, consume significantly fresh whole chicken (with coefficients of .4972 for secular and .3653 for religious Muslims). This supports the

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theoretic model where we projected that modernity aversion and less-binding time constraints would dominate the income effect that were found to be insignificant among al religions. The results for conservative Jews are similar. They purchase more fresh than frozen chicken and, within the fresh category, they purchase more whole than cut chicken.

Table II shows that, within both the fresh and frozen categories, orthodox Jews prefer buying the less-expensive but time-intensive item, i.e., the whole chicken. When compared to the secular group, the ultra religious group buys less fresh chicken and purchase more whole and frozen parts (the binding time constraints and income effects are stronger than the modernity aversion effect).

The "male respondent" variable applies mostly when the shopper is not the cook. This is a situation were shopper and buyer have the largest gap in preferences. The shopper who is not the cook would try to minimize the number of food shopping trips and will be less sensitive to the time invested by his spouse and that may lead to preferences for frozen whole chicken. We found that the gender of the shopper did play and significant role in family choices and thus buyers act as an agents rather than decision makers.

Madill-Marshall, Helpop, and Duxbury (1995) argued that women's enjoyment of food preparation (JOC) is the only significant variable that can be used in predicting the demand for ready-to-eat food. According to their study enjoyment from cooking will decrease the purchase of timesaving products. Our empirical results support this argument only among the men. Men who enjoy cooking purchase more fresh whole chicken and buy less frozen chicken than men who do not enjoy cooking. Women's

enjoyment of cooking does not significantly alter the type of chicken purchased.   Income

seems to have little explicit affect on chicken purchases. This is consistent with the

majority of the previous studies (Gentry et al. 2003, Bellante, and Foster, 1984,

Kim,1989, Nickols, and Fox, 1983, Reilly, 1983, Strober, and Weinberg, 1977,

Weinberg, and Winer, 1983).

Finally, Older individuals whose production is less efficient by more cut chicken .

Take in Table II.

The empirical analysis indicates that religion may not always explain the

differences in consumption of convenience food inputs (market goods). There are

differences in consumption behavior between Muslims and non-Muslims, but very small

differences between secular Jews and Christians. The last finding is consistent with

Delener (1994), and support out hypotheses that suggested that only high level of

religiosity will guarantee complying with religion norms that are binding. We find that

the cross-effect of religion and religiosity provides a better explanation to family input

choices (at least in the case of chicken meat) than each of these factors by itself. We show

that the combined effect of religious and religiosity act as a strong cultural norm, and

provide empirical support to the work of Gentry, Commuri, and Jun, 2003. We extend

the argument of Dickson (2000) that, unlike Judaism and Islam, Christianity separates

religion from day-to-day life and allows better expression of individualism, by saying

that this separation exists in any religion and the moderating variable that determines

separation is religiosity.

Most of the previous studies analyze the effect of religiosity on materialism

(Borgmann, 1992; Burroughs and Rindfleisch, 2002), lifestyle (Kilbourne, 2003), self-

restriction (Kivetz and Simonson, 2002), and family values such as marriage, divorce, children and their education, gender, and in particular sexual education and behavior (Brinkerhoff and Mackie, 1984). To our best knowledge, this is the first research that studies the effect of religion and religiosity on gender and the combined effect on choices of food inputs.

Conclusions and Implications

This paper shows that purchasing of food products, in particular, chicken, is largely affected by religious affiliation and intensity of religiosity. Religion and religiosity directly affect demand for meat through norms of behavior and lifestyles and indirectly by altering income and time constraints. We find that patterns of behavior vary among followers of different religions resulting from different norms.

These findings can be generalized to suggest that consumption choices may not be affected much by nominal affiliation of religion or a group but, rather, by intensity of adherence and beliefs. Market segmentation only to religious affiliations or only according to whether or not people label themselves such as environmentalists, vegetarians, etc., may fail to explain the differences in choices resulting from intensity of adherence to principles.

Accepting and adopting new technologies such as shopping through the internet, which is not observed by the community members, may have the potential of weakening the social pressure resulting in an increase in the demand for ready-to-eat foods among the religious individuals. The religious leadership, foreseeing it, ruled that the use of the internet is forbidden. However, evidences suggest that the young generation of the religious groups tend to ignore the internet restriction. The internet example is one of

many anecdotes showing that religiosity and modernity do not live peacefully together, and the paper's finding may be extended to product categories and markets with constant tension between modernity and religiosity. Examples include alcoholic beverages that are forbidden by Muslim law, smoking forbidden by Mormons, television programs, which are forbidden in Judaism (but only the ultra orthodox follow this role).

The result of the paper can be generalized beyond religious belief to other beliefs and value systems that affect lifestyle and consumption patterns. Beliefs and attitudes of individuals and groups toward the environmental or ethical merits of production practices (use of pesticides, genetically modified foods, child labor) have a growing impact on consumption choice. However, our results suggest that consumption choices are not only affected by consumer subscription to certain belief, but by the intensity of adherence to beliefs and value systems. The importance of intensity of beliefs on consumer preferences is underscored in a recent study by Hamilton et al., showing drastic differences in willingness to purchase pesticide-free foods by individuals who profess to be environmentalists who oppose chemical use. Much more insight can be gleaned from other studies on the impact of the belief system, norms, and lifestyle on consumer behavior.

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Table I. Summary statistics of socioeconomic variables

Variable		Number	Percent*
Low income		94	24%
Religion – Jewish:		304	78%
	Secular	183	60% of Jews
	Conservative	71	23% of Jews
	Orthodox	50	16% of Jews
Religion – Muslim:		72	19%
	Secular	26	36% of Muslims
	Conservative	31	43% of Muslims
	Orthodox	15	21% of Muslims
Religion – Christian:		10	3%
	Secular	6	60% of Christians
	Conservative	4	40% of Christians
Little leisure time		163	42%
Male respondents		123	32%
High joy from cooking – women		174	66% of all women
High joy from cooking – men		37	30% of all men

*Percent of total sample unless otherwise indicated**.**

Table II. Determinants of the demand for convenience features in chicken

Variable		Fresh whole	Fresh cut	Frozen whole	Frozen cuts
Age of respondent		0.0013	0.0027	-0.0010	-0.0061
		(0.857)	**(2.046)**	(-0.657)	**(-4.237)**
Income	– Low	0.0094	-0.0463	0.0153	0.0134
		(0.218)	(-1.213)	(0.340)	(0.148)
	– High	-0.0298	0.0092	-0.0534	0.0112
		(-0.779)	(0.279)	(-1.345)	(0.312)
Religion	– Jewish conservative	0.1327	-0.0201	-0.0838	-0.0970
		(2.266)	(-0.397)	(-1.300)	(-1.700)
	– Jewish orthodox	0.0217	-0.2799	0.2062	0.1180
		(0.302)	**(-4.419)**	**(2.986)**	*(1.835)*
	– Muslim secular	0.4972	-0.2144	-0.1646	-0.4024
		(5.407)	**(-2.587)**	(-1.556)	**(-4.151)**
	– Muslim religious	0.3653	-0.0994	-0.1138	-0.3199
		(5.115)	(-1.583)	(-1.439)	**(-4.233)**
	– Christian	0.2063	-0.1784	0.1195	0.0418
		(1.598)	(-1.535)	(0.923)	(0.336)
Male respondent		0.0480	-0.0735	0.0597	0.0807
		(0.882)	(-1.552)	(1.080)	(1.589)
Enjoy Cooking – Women		-0.0156	0.0098	0.0108	-0.0061
		(-0.352)	(0.262)	(0.244)	(-0.151)
– Men		0.1118	0.0203	-0.1801	-0.1761
		(1.787)	(0.362)	**(-2.407)**	**(-2.730)**
Low Leisure – Jewish Secular		-0.0488	0.0049	0.0747	-0.0452
		(-0.974)	(0.117)	(1.496)	(-0.991)
– Jewish Conservative		-0.1368	0.1057	0.0353	-0.0214
		(-1.696)	(1.525)	(0.400)	(-0.278)
– Jewish Orthodox		-0.2086	-0.1514	0.1430	0.1030
		(-2.113)	-*(1.794)*	*(1.669)*	(1.255)
– Muslim Secular		-0.3244	-0.0171	0.2684	0.3305
		(-2.584)	(-0.146)	*(1.937)*	*(2.585)*
– Muslim Religious		0.0017	-0.0295	-0.2008	0.0378
		(0.018)	(-0.337)	(-1.507)	(0.367)
- Christians		-0.0752	0.0580	-0.1508	0.0780
		(-0.379)	(0.324)	(-0.737)	(0.418)
Constant		0.0646	0.4011	-0.0120	0.3956
		(0.837)	**(5.821)**	(0.147)	**(5.293)**
Log likelihood function, full model		-166.61	-103.48	-156.63	-153.24
Log likelihood function, constant only		-226.59	-151.56	-190.36	-193.97

T-statistics are in parentheses: bolded = significant at the 5% level; italics = significant at the 10% level.