

An empirical study outlining the factors that impact e-religion infrastructure and e-religiosity

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Abstract

This cross-national preliminary study examines the impact of religious factors, personal income and Internet savvy on e-religion infrastructure and uses. Data from a set of more than 40 nations were gathered to allow analysis of factors responsible for the infrastructure development and uses. The analysis shows that (i) religious beliefs but not practices stimulate e-religion infrastructure development, and (ii) religious beliefs and personal wealth influence e-religion uses.

Introduction

The economics of religion propounds the idea that people are rational in their choices about religion. Various religions compete for "customers" by seeking new believers, spreading their version of religion and trying at the same time to maintain their adherents. With the emergence of the internet/web, a new channel of communication has been found that can maintain and spread that effort. This web-version of religion (or e-religion in brief) is getting increasingly popular. Given that modern day life has become complicated and managing the home-life and work-life together is getting more and more difficult, many people may prefer doing their religious chores through the web, at least a part of their times, which can be defined as their e-religiosity. Many scholars think that the internet has provided a new community context for religiosity, linking people from geographically, culturally and socially diverse backgrounds, facilitating interactivity among them in many new ways.

Now, what factors can drive both the e-religiosity and e-religion infrastructure of a given nation? First, one can

consider the economic well being of the people of a nation. Second, it is expected that religious people will like to experiment with internet-based religious infrastructure as well as e-visit those places. Various religious beliefs as well as practice (represented by number of church-goers) can influence development and use of e-religion. Also, internet savvy of an individual is a plus for roaming on the web. Thus, the e-religion infrastructure and/or e-religiosity (or use of these web sites) could be influenced by elements of religiosity, the web savvy and/or the economic well being of the people of a nation. Therefore, in this paper, there is an attempt to find answer to the research questions: (1) what drives the e-religion infrastructure of a nation – personal wealth, internet savvy of the people of a nation or elements of national religiosity? (2) What drives the e-religiosity of a nation – wealthy people, people with internet savvy or religious people (churchgoers and/or believers)?

Data

Table 1 details the variables used in this study and their sources. The e-religion infrastructure measure was obtained from the search “~religion” of websites that exist on the web on any given nation. The “~religion” can capture all identical or similar words starting with “religion”. The search engine used was Google (Google, 2005). For measuring e-religiosity, the first 200 web sites of each of 40 countries as ranked by Alexa web services has been taken into account and the average ranking of religious websites from each nation has been calculated (InternetWeek, 2004; Alexa, 2005). Alexa ranks websites on the basis of number of website visits made by unique visitors. This amounted to 8000 websites to start with. The duplicate listings of websites were eliminated, and this measurement was repeated a month later. A random examination showed a strong correlation of website rankings as measured in different periods of time. To keep things manageable, websites managed from within a nation were only considered. A ranking with **low** values is ordered **high** and vice versa (Abernethy and Reichgelt, 2003).

The religious data from the World Value Survey (WVS) (Inglehart et al., 2004) has been used for the present study.

Various religious values as well as practices as outlined in Table 1 have been considered. The two most popular values considered are belief in hell and belief in after-life (Barro et al., 2002). To accommodate various other types of beliefs, the general religiosity index from the same survey as a general measurement of religious beliefs has been considered too (the question asked was “do you consider yourself as a religious people?”). The frequency of church visits by the people of a nation has been used to measure the practice of religion. Other independent variables used in the study are a measure of internet savvy (Internet users per 1000, named as INTNT) and personal income of people (as measured by GDP per capita (named as GDP)). The population of a nation (POP) has been used as a control variable. The number of nations included in this study is 40 in number, due to data availability and cross-tabulating data from other sources. The set of these nations included are developed and developing nations. It also includes nations from three major continents.

Results

Since belief in hell (HELL) and belief in after death life (AFTDEATH) are strongly correlated (Pearson Correlation coefficient $r = 0.811$, $p < 0.000$), it has been decided to form a single factor variable (FACHELLAFTD) from these two items. A step wise OLS regression has been adopted where all non-religious variables have been introduced in the first step, followed by all religious variables in the next step (practice as well as believes). In the regression models, the population has been used as a control variable. The dependent variables are religious infrastructure (INFRA in model 1) and use of the infrastructure (E-RELIGIOSITY in model 2). The changes in R-square resulting from introduction of religious variables after other variables range from 8-10% in two regression models (Table 2).

The OLS regression results with all the major relevant indicators are shown in Table 2. In the regression model, multicollinearity is not significant as the range of VIF values are significantly less than 10. At first, the results for the regression of the variables on e-religion infrastructure are

discussed (Model 1). It is observed that among the non-religious independent variables, only population but not GDP or internet savvy emerges as significant accounting for 68% of variability of the dependent variable ($R^2 = 0.68$). Concept of hell and life after death also emerges as significant as the factor derived from these two variables (FACHELLAFTD) become significant in the regression model with positive sign. Interestingly, church attendance is insignificant in this model.

Next the regression of the variables on e-religiosity (Model 2) is considered. The religious value variable (RELIGIOSITY) emerges as significant in this regression model: a higher belief in religion leads to an increased e-religion use of a nation. GDP per capita and population play significant roles; however, internet savvy does not play a positive role in the e-religiosity. It could be that people from countries with less internet access, use more frequently the religious sites. Also it should be noted that church attendance is negatively significant in this model: more churchgoers in a nation does not translate into more use of virtual religious sites, but rather the converse is true. This shows that religious beliefs and *not* practice promote the e-religiosity. The variables account for 50% of variability of the dependent variable ($R^2 = 0.50$).

Thus the research question 1 is solved partly in the affirmative way: elements of religious beliefs do impact the e-religion infrastructure, whereas internet savvy or religious practice does not. Regression results also show that religious beliefs as well as personal wealth help in frequent use of religious sites: people who believe in religion in general practice e-religiosity more. This answers research question 2 partly affirmatively.

Conclusions

This preliminary study contributes to the literature by providing empirical evidence of several factors (elements of religious beliefs) influencing e-religion infrastructure and use, using data from various nations. Religion is not going into background under the onslaught of secularization but remains a very powerful force in contemporary society (Iannaccone, 1991; Iannaccone, 1998). The internet/web is a new versatile

channel through which religion is spreading or continues to exist. There is competition for believers on the internet also.

In particular, the research investigates and finds evidence of the impact of a few factors - elements of religious beliefs (but not practices) - on e-religion infrastructure development and elements of religious beliefs and personal income on the use of such religious web sites.

Using frequently used secondary data from various reliable sources, regression analysis has been exercised and the results show that the factors involving religious beliefs have a significant impact on e-religion infrastructure development. For academic researchers, this research identifies two important types of factors that can impact e-religion development. For practitioners, the research findings indicate that (i) religious beliefs (as measured by belief in hell and afterlife) but not practices (such as going to the church) tend to stimulate e-religion infrastructure development, and (ii) religious beliefs and personal wealth influence e-religion uses. So it makes sense to increase the economic conditions of a nation to have better e-religion use. Also it is clear that certain religious values promote such developments in infrastructure and usage; however, religious practices (church-going) play no positive role in e-religion infrastructure and a negative role in e-religion usage. Finally, internet usage does not influence the development but negatively influence the use of religious infrastructures. In sum, internet savvy or religious practice does not influence positively e-religion market whereas religious values do. Future studies containing more nations and more religious variables are needed to confirm these observations.

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Table 1. The Variables and Their Sources

Variable	Source	What it measures
Church attendance (CHURCH)	World Value Survey, 2004	How often the respondent attends religious services (% "once a month or more". A religious practice measure.
Religiosity index (RELIGIOS)	World Value Survey, 2004	Do you consider yourself a religious person (% yes)? A religious belief measure.
Belief in hell (HELL)	World Value Survey, 2004	Do you believe in hell (% yes). A religious belief measure.
Belief in after death life (AFTDEATH)	World Value Survey, 2004	Do you believe in after life (% yes). A religious belief measure.
FACHELLAFTD		Factor of "Belief in hell" and "Belief in afterdeath"
GDP per capita, PPP (GDP)	World Bank, 2003	The personal income of an individual in a nation in 2002 in natural logarithm
Internet/Web Savvy (INTNT)	World Bank, 2003	No. of Internet users per 1000 in 2001
E-religion infrastructure (INFRA)	Google search result of relevant total number of web sites in 2005	E-religion infrastructure
Population (POP)	World Bank, 2003	Population in million, 2002
E-religiosity (E-RELIGIOSITY)	Average of first 200 Alexa ranking result of the religious site use a nation in 2005	Web-based religious site use ranking; A low value denotes high rank

Table 2. Results of Infrastructure and E-Religiosity Regressions

Independent Variables	Model 1	Model 2
INTNT	.083 ^{NS}	.607*
POP	.834 ^{***}	-.469**
GDP	.393 ^{NS}	-1.293 ^{***}
RELIGIOS	-.334 ^{NS}	-.745*
FACHELLAFTD	.437*	.25 ^{NS}
CHURCH	.150 ^{NS}	.526*
N	37	37
R²	0.68	0.50
Change in R² (due to religious variables)	.08	.10
VIF values (indicator of multicollinearity)	1.3-7.4 (<10.0)	1.3-7.4 (<10.0)
Dependent Variable	INFRA	E-RELIGIOSITY
Note: ***: p< 0.001, **: p< 0.01, *: p< 0.05, NS—not significant		