MEASURING RELIGIOUS COMMONALITIES: DETAILS FROM THREE INTERNET SURVEYS

Akira Kawabata*

Abstract

This study involves a multi-year, cross-cultural examination of religious commonality. Although tremendous differences exist between East Asian and Western religious cultures, common cross-cultural elements transcend their respective cultural contexts. This study employed three Internet-based religious belief surveys. The first survey was conducted in 2010 in the United States and Japan and consisted of 100 questions. The second survey was conducted in 2014, and consisted of 186 questions, including some selected from the first survey. It was administered in the following eight countries: The United States, Italy, Russia, Turkey, Taiwan, India, Thailand, and Japan. These countries respectively represent the world religions of Protestantism, Catholicism, Greek Orthodoxy, Islam, Taoism, Hinduism, Theravada Buddhism, Mahayana Buddhism, and Shinto. The third survey was conducted among eight countries in 2016 and consisted of 90 questions. Data analysis revealed one common dimensional structure in all eight countries. The first and second survey results allowed researchers to detect questions appropriate for ascertaining commonalities between the United States and Japan and within the eight countries. While a differential item functioning (DIF) analysis detects common items, it was so sensitive that it missed the most possible detectable commonalities when using multiple target countries. Constructing a probability model structure enabled all third-survey data items to be analyzed simultaneously. Although cultural backgrounds differ, the results reveal that the eight countries share a single-dimensional structure containing various religious belief items. Another survey is currently being prepared and researchers expect to have a wider structure that includes the common items of morality and mentality. The wider structure will be either one dimensional or two dimensional.

Key words: religiosity; religious commonality; international comparative study; Internet survey

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1. Introduction

The term "religiosity" includes various aspects such as religious beliefs, knowledge, experiences, behaviors, and so on. According to Inoue (2005, 210), it is often recognized as an expression for features common to most of religious phenomena. Thus, the term is often used to convey the nuances of universal religious characteristics, including the concepts of "sacred" or "spirituality." However, the use of the terms "universality" or "commonality" in this case would likely attract criticism from many researchers. If a completely universal religiosity existed, then one might indicate that the U.S. and Japan shared a common religiosity. However, it is more frequently declared that religiosity varies greatly between U.S. and Japanese contexts.

In addition, individual religiosity often varies, and religiosity can be utilized as a measurement in quantitative research. In some cases, the average score of such a measurement is employed; in other cases, certain characteristics of religiosity are emphasized. Furthermore, the religiosity of a certain religious order, or the religiosity of specific countries such as Japan or the United States (U.S.), is sometimes expressed or compared. Thus, it can be concluded that the concept of religiosity has a variety of applications depending on the research goals and context of the study. Further, when discussing commonality, it is important to carefully consider the aspect and scope in which things are considered common.

The current research aims to investigate religiosity using quantitative research methods and to explore religious commonality. The results, however, do not indicate that the vast fields of religious phenomena are perfectly common and that there is religious universality among all nations. For example, religious beliefs in the U.S. are strongly tied to behavior. In Japan, however, behaviors that may appear wholly religious are not necessarily tied to religious convictions. The most typical examples of this in Japan are the Christian-style weddings and other similar ceremonies (e.g., *obon* or *ohigan*, *jōtōshiki*, and *hatsumoude*) that are not rooted in firm religious beliefs.

When considering religion in detail, each nation contains multifarious religions, religious cultures, and religiosity. This is especially apparent when comparing Japan with Judeo-Christian Western countries, as different structures or combinations are observed. Religion, as a whole, varies from country to country, and it appears as a unique culture within each country; thus, religiosity can also be quite diverse. As such, religious studies in Japan are typically conducted on the premise that Japanese religious culture is unique. On the contrary, if a scale of commonality that transcends countries or areas with differing religious cultures is established, would it be useful in religious research? However, even if discovered, it is of course a part of religiosity, not a scale of religiosity as a whole.

The current study does not necessarily presuppose that only one scale exists, nor does it hypothesize the number of religiosity scales. In this paper, "commonality" refers to a set of religious declarations about which believers generally agree upon (or disagree upon when

negative aspects are involved) regardless of their context, including country, religion, or religious culture. This denotes the presence of a common measure that is determined via several declarations (questions). However, how would a commonality scale (if at least one existed) be useful to religious studies? Consider the following four points.

First, it would greatly benefit internationally comparative research, which has been actively conducted because of globalization. Dozens of countries have participated in large-scale international social surveys since the 1980s, including the Europe Values Survey, the World Values Survey (beginning in 1981), and the International Social Survey Programme (ISSP), which first began in 1985 and has led to a plethora of analytical results. Among these, each country's religiosity has been measured through a common questionnaire, and cross-national quantitative analyses have been conducted. However, could one say that the religiosity measured by these questions is equivalent in both Japan and the U.S.? Many Japanese researchers believe that such survey questions are based on Judeo-Christian cultures and therefore are not applicable to Japanese religion. For example, the questions mention the term "God." In Japanese, "God" is not distinguished as singular or plural. Therefore, it cannot be said that "God" in Japanese has the same meaning as the "God" referred to in Christianity (Manabe, 2011).

Second, a commonality scale would not only benefit international comparative studies but would also aid in the comparative study of Japanese religious groups and enable important comparisons between such groups. In particular, if there is a large disparity in the average number of common religiosity scale points (e.g., between Buddhist or Shinto adherents and between the New Religions of Pure-Land teaching [*Jōdo-kyo*] and Nichiren Buddhism), differences can be clearly demonstrated in common religiosity average points. By the same token, this would enable the direct comparison between adherents who attend American megachurches and religious groups in Japan. Furthermore, this could facilitate the comparative study of Japanese Soka Gakkai and American Soka Gakkai International (SGI) members.

Third, a commonality scale would benefit comparative studies between religious and non-religious people. In building upon the second benefit mentioned above, it becomes apparent that the religiosity of believers and that of non-believers is vastly different. An examination of such cases would be useful in determining whether more religious persons perform more volunteer activities or have greater satisfaction in their lives. As such, the advantages and disadvantages of religiosity could be examined by using it as an independent variable to investigate its relationship with social awareness or behavior.

Finally, such a scale could help researchers explain the process of becoming a religious adherent. It may be possible to then verify the types of experiences that might impact religiosity scale points, and whether this varies among different religious cultures.

Based on the advantages discussed above, the current researchers endeavored to derive a common religiosity measurement that transcends religious culture by focusing on religious beliefs as ways of thinking or feeling about religion. This paper does not treat religious behaviors

or experiences. The current research included a 2011 U.S.-Japan survey, as well as surveys from both 2015 and 2016 conducted in eight countries, to address this issue. This paper discusses the details of these three surveys and explores important aspects for future studies.

2. Survey Methodology

In order to generate questions seeking the respondent's thoughts on religion, various materials were referred. In aiming to conduct a comparative study between the U.S. and Japan, researchers prioritized resources that were published in both countries. The documents consulted included the following:

① Religious theories[1]
② Doctrines from specific religions[2]
③ Books related to enlightenment of religious doctrines[3]

Next, researchers entered these sources in a database and connected the religious concepts included in many teachings and religious theories. Then, questions previously used in the religiosity surveys in Japan and the U.S. (Kaneko, 1997; Hill and Hood, 1999; Nishiwaki, 2004; 21st Century Center of Excellence Program, 2003; Sugiyama, 2004) were added to the same database. The relationships between the religious concepts and questions were then subsequently organized.

The use of this database addressed two key issues.[4] First, there was a need to unify each religion's unique expression of the concept of God, since its meaning varies across religions. To that end, it was necessary to extract elements from theoretical research, scriptures, and prior research and compare them on three levels, including on religious concepts (e.g., a never-ending cycle of life and death), each religion's respective expressions of those concepts (e.g., reincarnation or samsara), and the questions often asked (e.g., Are human beings reborn?), respectively. Thus, it was necessary to use the database to compare the religious terminology from each tradition and superordinate religious concepts to plain questions. Additionally, the database was useful for maintaining close connections between the religious concepts, terminology, and questions.

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[1] See Hori and Oguchi eds. (1973), Eliade et al. (1994), and Institute for Japanese Culture and Classics, Kokugakuin University eds. (1994).

[2] Scriptures include the Gospels, the Apostles' Creeds, the Qur'an, the code of Godliness living (*Keishin seikatsu no kōryō*), the Great Purification Liturgical texts (*Ooharae no kotoba*), The 21 PL Precepts, and A Guide of Happiness for All (Toshio Maruyama)

[3] Taisho University religious textbook translation project ed. (2008), Seibi-dō ed. (2008), Ropoff, B. and Buckles (2002).

[4] For details, see Kawabata (2016).

Second, there was a need to exhaustively examine the similarities and differences among each of the three levels. There were several hundred religious elements selected for previous study and several thousand questions from previous surveys; this resulted in a large number of combinations. Thus, it would be difficult to conduct an exhaustive examination without the aid of computers and the use of a database for organizing and systematically examining the elements.

As described above, the database was an indispensable research tool used to examine the questions and relate them to religious concepts. Researchers aimed to use general expressions in this survey's questions so that they were equivalent in every country's unique religious traditions or cultures. However, since it is difficult to replace words describing divine or transcendental figures like "God" or "the Buddha" with general words that do not have any particular religion's nuances, the survey included the following lead scentences.

This survey is being conducted as a part of an international comparative study on religion. In the following questions, you may find some words unfamiliar or vague, as we try to use culturally neutral terms and avoid mentioning concepts that are specific to a particular religion. We would like you to answer questions in accordance with your way of thinking or, if you are a believer, your religion.

Do you agree with each of the followings? Please select the answer that applies.

* Some of the questions contain the words "God(s)" and "Soul." These are general terms and do not refer to the concepts of "God(s)" and "Soul" taught in any particular religion. When answering, please assume they follow the meaning you think of when you personally use these words.

Respondents selected "Disagree," "Somewhat disagree," "Neither agree nor disagree," "Somewhat agree," "Agree," "Prefer not to answer," or "Do not understand the meaning." It was imperative for this survey's question to convey identical meanings even after being translated into the native language. However, since the terms "God" and "Soul" have various meanings among different countries, the questions created in the current research may not be identical. Therefore, the "Do not understand the meaning" response was included to ascertain whether the question was understood as intended. In addition, an open answer field labeled "comments" was included for each question. Here, the respondents were given the option of to detail any concerns and offer their opinions.

3. 2010 U.S.-Japan Comparative Survey

In this case, a total of 100 questions were carefully selected from a database and a survey was conducted. The questions used are indicated with circles in Tables 1 and 3 in the columns labeled 2010 "U.S.-Japan comparative survey." The survey was commissioned to U.S. and Japanese

research companies and conducted through the Internet. The research companies' partner panels totaled more than 5 million worldwide (the Japanese research company's partner panels totaled 500 thousands alone). The goal was to recruit a minimum of 600 American and Japanese respondents; in total, 665 American respondents and 717 Japanese respondents were chosen (a total of 1,382 respondents). The method of allocation of respondents was consistent in the U.S. and Japan, as males and females were recruited in equal number: responses were obtained from 331 American males, 334 American females, 355 Japanese males, and 362 Japanese females. The target age range was from 20 years to 69 years, and the age of the respondents was evenly dispersed by decade. The age decade with the least number of respondents was the 30s, having only 269 participants, and the largest was the 40s with 289. For an Internet survey, the ideal respondents are younger than their 50s since those over 50 use the Internet at lower rates in Japan. However, there is a strong tendency in Japan for individuals to believe in religion as they age. Only around 10% of those in their 20s are religious, but nearly half of those in their 60s are religious; those in their 70s reach almost 60%. We therefore included respondents who were in their 60s.

Further, the respondents were screened for categorizing purposes. Religious adherents were labeled as "religious believers" (US 224 JP 234), while those who did not practice a particular faith but had interest in religion were labeled as "interested" (US 218 JP 230), and those who did not practice a faith and did not have an interest in religion were categorized as "indifferent" (US 223 and JP 253). Respondents were evenly allocated by religious faith and age since the proportion of "religious believers" in the U.S. and Japan varied greatly according to age bracket. For this reason, existing studies have had difficulty finding a common religiosity for general Japanese and general Americans. Contrary to this, the current research focuses on discovering the common tendencies of "Religious believers," regardless of Japanese or American nationality, by using the Differential Item Functioning (DIF) analysis method.[5] This was the first step in exploring a common religiosity that transcends religious culture. We conducted the DIF analysis using ANOVA[6] for "Religious believers" in the U.S. and Japan, and common items were chosen.

The two-way ANOVA with two factors, religious faith and country, revealed that 23 questions did not have interaction effects at the 5% level. That is, these items were not non-uniform DIF. According to the accepted rules of the statistical test, it is reasonable to set the significance level to 5%. However, when searching for questions that constitute U.S.-Japan commonalities (as was

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[5] Tazaki (2008) offers an easy-to-understand explanation of the DIF analysis method. Watanabe, Kurosaki, and Yumiyama (2011) have already given a detailed explanation of how the DIF analysis was used for the U.S.-Japan comparative survey data. Please see these resources for details.

[6] As a method of verifying equivalence, a DIF analysis using variance analysis, log-linear analysis, logistic regression analysis, a confirmatory factor analysis, and a multi-group analysis were used in various fields. Similar analyses are possible in the field of religion. Richards and Mark (1992) used a log-linear analysis as a DIF analysis to examine whether Kohlberg's six-step moral development theory was unchanging, universal, and unaffected by faith. However, quantitative analysis using these methods is rarely seen in the field of religion.

done in this study), it is also possible to relax statistical criteria. In posthoc tests, there were 67 other questions that have the statistically significant effects of the religious category of respondent (e.g., "religious believers" and "indifferent")[7] both in the U.S. and Japan.

Table 1 reveals a list of the 66 questions (out of 100) used in the 2010 U.S.-Japan survey that were not used in the 2016 survey because of survey length limitations. The first 11 items indicate no commonalities between the U.S. and Japan; these were used in the 2010 U.S.-Japan survey, but not in the two subsequent surveys. It can be concluded that these questions have different meanings in the U.S. and Japan. Additionally, there were 44 questions that were used in the 2010 and 2015 surveys, but not in the 2016 survey; similarly, these items did not indicate commonality across the eight countries. In sum, most of the questions were likely not common, but for some it was slightly possible that they were common.

4. 2015 Survey

The research organization was expanded through the adoption of a Grant-in-Aid for Scientific Research A in 2013. Researchers specializing in religious studies and religious philosophy were added, and the questions were examined once more. The current research team examined whether higher concepts were missing; a survey was then conducted using 186 questions, some of which were deemed common based on the U.S.-Japan Survey in 2010. Table 2 reveals a list of the questions asked only in the 2015 survey.

Surveys subsequent to the 2010 U.S.-Japan comparative survey differed in that they were conducted in a greater number of countries. The eight countries included India, Turkey, Japan, the United States, Italy, Taiwan, Thailand, and Russia. The countries were selected based on the ratio of believers in the world's major religions, in addition to their ability to complete the Internet survey. Christianity (which has the world's highest numbers of adherents) was represented as Catholicism in Italy, Protestantism in the U.S., and Russian Orthodoxy in Russia. Containing the second highest number of followers, Islam was represented by Turkey.[8] India was surveyed as a representation of Hinduism, which boasts the third-largest number of adherents in the word. Buddhism and Taoism do not have many adherents globally but were selected because of their differences. Buddhism was represented by Thailand, while Taoism was

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[7] The 23 non-uniform DIF items from these data were further carefully selected, and 12 items were used to extract a common three-factor structure for the U.S. and Japan. The details of these results will be reported in another paper.

[8] Saudi Arabia is considered the most salient Muslim nation along with the countries of North Africa and Central Asia. However, only two countries, Turkey and Indonesia, were allowed to conduct the Internet survey. Turkey is said to be a secular country within the Islamic world. However, it has participated in both the World Value Survey and the ISSP survey. Turkey was selected so that the religious data from those studies could be used for future comparison.

TABLE 1.

List of 66 Questions not used in the 2016 Survey

Question	2010 Survey	2015 Survey
Engage in public service/volunteer activities established by a religion.	○	—
Attend religious services or rituals.	○	—
Faith can provide people with a goal in life.	○	—
Religion is something that supports conscientiousness and morality.	○	—
There is an end to the world.	○	—
Accept various viewpoints without sticking to just one view.	○	—
One can gain a sacred power, through control of their emotional and physical desires.	○	—
People are born with a mission (meaning) and the performance of that mission results in happiness.	○	—
Learn from God and attempt to behave in a similar manner.	○	—
Faith consists of following the orders and will of God.	○	—
There are a lot of problematic (harmful) religions.	○	—
Through prayers and/or religious rituals, one can achieve success and/or happiness.	○	○
For ordinary people, it is impossible to be connected to "God(s)" without a religious organization.	○	○
Those who believe in "God(s)" with one's whole heart will be saved.	○	○
True supernatural powers that are not tricks exist.	○	○
Do everything with one's whole heart.	○	○
"God(s)" is always on the side of human beings, protecting them.	○	○
Fate cannot be changed.	○	○
Visit temples etc. as a religious act.	○	○
Do meditation.	○	○
Pray.	○	○
Try not to do things prohibited by religion.	○	○
Possess some sacred symbolic object.	○	○
Concerning religious teachings, read texts and/or listen to talks.	○	○
A spirit lives within nature, such as mountains, rivers, grasses, and trees.	○	○
By believing in "God(s)," one can be healed of illness.	○	○
By believing in "God(s)," one's social standing can be improved.	○	○
By believing in "God(s)," one's interpersonal relationships can be improved.	○	○
By believing in "God(s)," one can acquire peace of mind.	○	○
Always be grateful to everything.	○	○
There is a world after death.	○	○
"God(s)" exists.	○	○
Live a life based on faith.	○	○
By believing in "God(s)," one can obtain eternal life.	○	○
There exists "God(s)" who knows everything and is all-powerful.	○	○
Love "God(s)."	○	○
Pray for world peace.	○	○
As words possess invisible power, when one expresses a good or bad thing in words, it will be realized.	○	○
Human beings can be purified through religious rituals.	○	○
"Soul" becomes more active through religious ritual and/or practice.	○	○
Human beings are given some characteristics of "God(s)."	○	○
"God(s)" loves human beings.	○	○
Make religious donations and/or contribution.	○	○
This world is only temporary and what possesses true value is the other world which transcends this world.	○	○
There are places that are open to sacred power.	○	○
Cherish the moment of "here and now."	○	○
In the universe, there are intelligent entities who surpass human beings.	○	○
This world is filled with evil and it is where human beings suffer.	○	○
Focus on practicing the teachings of a religion rather than understanding the religious truth, which is not possible for human beings.	○	○
Strong negative feelings of other people or of spirits toward oneself can bring about misfortune.	○	○
Control one's thoughts and emotions in a way so as to be positive to everything.	○	○
If one has no attachments, he/she can be freed from suffering.	○	○
Always have positive feelings.	○	○
Pray to "God(s)" and be grateful to "God(s)" for the happiness of others.	○	○
All sorts of events, both good and bad, reflect the state of one's mind.	○	○
As everything in this world exists in relation to each other, it is impossible for anything to exist alone.	○	○
Everything in this world has a limited existence and nothing is eternal.	○	○
Self-interest is the source of suffering and misfortune.	○	○
Human beings are created from a great life force that is one with the universe and return once again to this life force upon death.	○	○
Major disasters happen because people's minds/actions are not right.	○	○
"God(s)" appears in order to save human beings.	○	○
Religious truth cannot be expressed in words.	○	○
"God(s)" judges human beings and administers punishment.	○	○
The world was created by "God(s)."	○	○
Try not to have anger or hate for others.	○	○
Be honest about one's own intuitions.	○	○

Table 2.
List of Questions from the 2015 Survey

Question	2015 Survey
There exists some mediation that links "God(s)" with human beings.	o
Leave the world of everyday affairs and one's family, and live a discreet and hidden life.	o
Obey a religious leader.	o
Love people around oneself.	o
After death, it is possible for human beings to come back to life with a physical body.	o
Religious rituals bring salvation.	o
There is a hierarchical order from "God(s)" to high-ranking spirits to human beings to animals.	o
Spirits exist.	o
Be grateful to "God(s)."	o
This world has an end.	o
Be grateful to one's ancestors.	o
Feel "God(s)'s" love.	o
Through prayers and/or religious rituals, one is saved from disaster and hardship.	o
"God(s)" is the absolute and beyond this relative world.	o
There exists only one "God."	o
Phenomena in this world are reflections of more essential world(s).	o
There is an ultimate religion in this world that encompasses the teachings of all other religions.	o
Do social activities for a religious reason.	o
If one has no attachments, he/she can feel great happiness from everything.	o
Think of how others feel and sympathize with their feelings.	o
Lose one's individual self in religious experiences.	o
See things at hand as the way they are.	o
By believing in "God(s)," one can realize his/her desires in this world.	o
"God(s)" exists far off, beyond this world.	o
The "Soul" of human beings is pure and innocent.	o
The world of spirits is intimately related to this world.	o
The nature of human beings is evil.	o
Obey a religious organization.	o
Lead a life of honest poverty and purity.	o
Obey "God(s)."	o
In the eyes of "God(s)," there are differences between men and women.	o
Believe in some form of "God(s)" even if it is not specific.	o
Some people are spiritually close to "God(s)" while others are distant from "God(s)."	o
Some people can make prophesies and predictions.	o
Different "Gods" each plays a different role.	o
Some people can directly communicate with "God(s)" or spirits.	o
Reflect religious ideals on politics.	o
Human's free will is the basis of faith.	o
Even if the world appears unjust, this does not mean that there is no "God(s)."	o
"God(s)" influences human beings to attempt to change the current situation.	o
The world is based on the two major principles of mind and matter.	o
Things such as nymphs, fairies, and angels do exist.	o
"God(s)" is absolutely right.	o
"God(s)" has a specific gender.	o
Fight foreign enemies for the sake of one's faith.	o
Concentrate one's attention to issues at hand.	o
Human beings have "Souls."	o
Everything including human beings can exist because they have "Souls."	o
One becomes happy if he/she can realize his/her own inherent destiny, and become unhappy if he/she cannot realize it.	o
True happiness is not in this world but in another world beyond this world.	o
One can be saved by believing in "God(s)," no matter what sin he/she has committed.	o
The world of "God(s)" is closely connected to this world.	o
There are miracles performed by "God(s).".	o
Regularly conduct religious rituals for ancestors.	o
There are different "Gods" and they cooperate with each other.	o
The world after death is divided into world(s) of greater happiness and world(s) of greater suffering.	o
Be aware of one's own "Soul."	o
One can obtain sacred power by controlling his/her desires.	o
"God(s)" carries out creation and/or salvation by denying itself.	o
"God(s)" appears in response to requests from human beings.	o

represented by Taiwan.[9]

The questionnaire was initially written in Japanese, while translations from Japanese to other language were performed by a translation company. The Indian questionnaire was translated to English, the Turkish one was translated into Turkish, the American one was translated into English, the Italian one was translated into Italian, the Taiwanese one was translated into traditional Chinese, the Thai one was translated into Thai, and the Russian one was translated into Russian.[10] The survey inquired about respondent attributes, including gender, age, occupation, district of residence, and education. Race and ethnicity were added in the American version. There were 186 total items regarding religious beliefs. Of these, 183 were separated into groups of three. Finally, each respondent was asked 61 religious belief questions. The first group of respondents included 3,053 people from the eight countries selected, while the second group contained 2,969 and the third contained 3,049.

The lead sentence was the same as the one used in the 2010 U.S.-Japan Comparative Survey. Indian and Turkish surveys began in January 2015, while the other six countries were surveyed in March 2015.[11] Since this survey was conducted online, it is not possible to say that the survey respondents were representative of each country. Nevertheless, it yielded exciting results considering that no such survey had been previously conducted containing such a large number of common questions on religious beliefs in the countries that represent each religious tradition.

The ANOVA DIF is an effective method when using two countries as subjects, but it is difficult to realistically extract common factors from a multi-group analysis when eight countries are involved. The use of a series of analysis methods such as factor analysis, a multi-group analysis is appropriate to confirm common factors in the survey data of two countries. However, when the number of countries is increased (e.g., the 2015 survey was conducted among eight countries), it is hardly possible to show that none of the countries have interaction effects. In order to cope with the situation, Van de Vijver et al. (2009: 55) conducted a factor analysis by combining all data from the surveyed countries. They considered a factor structure revealed in pooled data as common among these countries.

Based on this method, a factor analysis was conducted using the data from all eight countries. Researchers then investigated whether a common factor structure existed among the 61 questions (one third of the total). There were a number of "I do not understand" responses, and more than four of 61 who responded "I do not understand" were removed. As a result, the sample

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[9] Even though China appeared to be the best representative of East Asia because of its population and socioeconomic influence, it was not surveyed because it is difficult to conduct social surveys related to religion there.

[10] The English questionnaire translation was sufficiently checked by native English speakers in America; the Turkish translation was checked by Turkish researchers of religion. As for other languages, dubious points were discovered numerous times by representatives of the translation company. If we had any questions on the translation, we inquired with those in charge of the translation company and repeatedly confirmed their understanding of the questions. Furthermore, the translation company was able to translate all languages within this study. It is a well-known translation company that has been in business for more than 50 years.

[11] Please see Kawabata (2016) for details regarding data collection.

for analysis included 307 Indians, 319 Turks, 286 Japanese, 355 Americans, 381 Italians, 355 Thailanders, 351 Taiwanese, and 339 Russians (a total of 2,693 people).[12] A principal component analysis was conducted for the 61 items using these respondents. Considering the results as a factor structure hypothesized, a confirmatory factor analysis was completed. A four-factor model was confirmed involving the 2,693 cases among the eight countries.[13] However, there was a high correlation among the four factors; the lowest two-factor correlation was 0.343, while the other correlations ranged from 0.562 to 0.736. Further investigation is needed to determine whether the four factors were adequate.[14]

5. 2016 Survey

Researchers were almost certain that a fixed number of questions made up a commonality scale for the eight countries from the 2015 survey; however, 186 questions proved to be a large amount. It was therefore determined that respondents would be asked approximately one-third of that amount (61 items) along with three common items. Thus, 90 items were carefully selected for inclusion in the 2016 survey (see Table 3). The response categories were "Disagree," "Somewhat disagree," "Neither agree nor disagree," "Somewhat agree," "Agree," "Prefer not to answer," or "Do not understand the meaning."

The survey began in March 2016. The eight countries selected were the same as those from the 2016 survey (India, Turkey, Japan, the U.S., Italy, Taiwan, Thailand, and Russia). The methods were also the same; the online survey was commissioned by the same Japanese research company. The questionnaire was recreated in Japanese. The questions used in the 2015 survey were the same, and new questions were translated by the same company.

The survey inquired about participant attributes including gender, age, occupation, district of residence, and education level. In the U.S., race and ethnicity were added. The survey included questions focusing on religious beliefs in addition to questions pertaining to religious pluralism, happiness, and altruism that were thought to be intimately related to religiosity. That is to say, this survey was designed to discover the relationship with religiosity.

The lead sentences mirrored the 2010 U.S.-Japan comparative survey and the 2015 survey. Respondents included men and women between the ages of 20 and 59 selected in proportion to their population according to age and gender. The goal was to recruit more than 500 people

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[12] The 61 items were checked for kurtosis and skewness; the distributions were not particularly distorted.

[13] We attempted to use listwise; that is, all cases that have any missing values were removed from data in all eight countries. Then, the number of case analyzed decreased to 1,971. However, in terms of pairwise, the degree of fit was appropriate.

[14] We examined whether it was possible to derive commonality using other methods. We considered it to be appropriate to analyze the pooling data from eight countries using a rush model. Rush model is a type of logit or probability model. It is the simplest single-parameter model in item response theory (Shizuka 2007; Toyoda 2012, 2013; Von Davier, 2016). The questions from the 2016 survey were chosen based on the 2015 results of the rush model. We would like to report the results from the rush model in another paper.

TABLE 3.
List of Questions from the 2016 Survey

Question	2010 Survey	2015 Survey	2016 Survey
In order to have one's prayers answered it is necessary to do and/or to give something in compensation for 'God(s)'s' help.	○	○	○
'God(s)' has intent and/or personality.	○	○	○
'God(s)' lives within each human being.	○	○	○
Devils or evil spirits exist.	○	○	○
Clearly feel and/or see the existence and/or form of 'God(s)' in a mystical way.	○	○	○
My country is protected by 'God(s).'	○	○	○
Every human being has the possibility to be saved.	○	○	○
In all actions, good or bad, there is a just reward or punishment by an invisible power.	○	○	○
Express and/or disseminate religious teachings to others.	○	○	○
Reflect on the state of one's mind and correct it based on religious teachings.	○	○	○
By believing in 'God(s),' one's income can be increased.	○	○	○
In some case(s), 'God(s)' or a representative of 'God(s)' is born into this world in order to save human beings.	○	○	○
In order to be saved by 'God(s),' one must deny himself/herself up to the present.	○	○	○
Without some kind of mediation that links 'God(s)' with human beings, one cannot interact with 'God(s).'	○	○	○
Human beings are called on by 'God(s)' to improve this world.	○	○	○
By abandoning the ego, sacred power takes effect.	○	○	○
Human beings are reborn from previous lives, to present lives and to future lives.	○	○	○
Beside this world, there exist several layers of invisible worlds, above and below.	○	○	○
'God(s)' always exists anywhere in this world.	○	○	○
If one has no attachments, he/she can achieve a feeling of true freedom.	○	○	○
Good spirit(s) observe and protect each human being.	○	○	○
Hardship leads to salvation by believing in 'God(s).'	○	○	○
There is deep meaning for 'God(s)' that human beings wish for happiness.	○	○	○
Being persecuted in the name of faith is linked to great salvation.	○	○	○
Rely completely on 'God(s)' for all things, including one's own existence and one's desires.	○	○	○
The world is maintained and evolves by the power of 'God(s).'	○	○	○
Through the power of 'God(s),' one can overcome the anxiety and fear of death.	○	○	○
The words in a religious scripture have sacred power.	○	○	○
Everyone is linked with others at the level of his/her 'Soul.'	○	○	○
One can achieve mystical/transcendental awareness.	○	○	○
The spirits of ancestors and/or dead family members protect their descendants when they are happy and, conversely, when suffering, influence the lives of their descendants negatively.	○	○	○
By eating food in a religious ritual, one can be linked with 'God(s).'	○	○	○
'God(s)' is a fundamental principle.	○	○	○
'God(s)' exists externally to human beings.	○	○	○
Visit sacred locations for a religious reason.	—	○	○
This world is imperfect, but the world being imperfect has sacred meaning.	—	○	○
'Souls' of human beings are connected to 'God(s).'	—	○	○
'God(s)' can only exhibit the power when human beings have faith.	—	○	○
Human beings and nature are both a part of 'God(s)' and linked with each other.	—	○	○
Religious organizations are in and of themselves sacred.	—	○	○
We are alive through some great invisible power.	—	○	○
Whether a certain person will be saved or not is individually preordained.	—	○	○
Directing love toward others brings back to oneself positive benefits by an invisible power.	—	○	○
Times flows in cycles and repeats like the seasons do, rather than flowing in a straight line from the past to the future.	—	○	○
There is deep meaning in believing in 'God(s)' and realizing one's desires in this world.	—	○	○
One's fate, fortune or misfortune are deeply related to the movement of stars.	—	○	○

| Question	2010 Survey	2015 Survey	2016 Survey
Through prayers and/or religious rituals, human beings are able to improve their fate.	—	○	○
One can exist because each individual possesses some essential quality as the foundation of his/her mind and body.	—	○	○
There is one 'God' who appears in different forms depending on the time and situation.	—	○	○
Whether one will be saved depends on whether he/she thinks and acts correctly.	—	○	○
Whether one will be saved depends on whether he/she believes in 'God(s).'	—	○	○
One can obtain sacred power through the religious practice of controlling his/her own body.	—	○	○
Becoming one with 'God(s)' can be achieved through religious practice, etc.	—	○	○
Convey in words one's faith to 'God(s)' and/or to other people.	—	○	○
One is born to fulfil his/her own particular desires/mission in this world.	—	○	○
If more people were aware of their own 'Soul,' the world and society would improve accordingly.	—	○	○
If more people believed in 'God(s),' the world and society would be improved accordingly.	—	○	○
There is a final judgment where 'God(s)' decides whether a certain person is saved or not.	—	○	○
Respectfully mourn the dead so that 'God(s)' may save them.	—	○	○
Through religious organizations, salvation is achieved.	—	○	○
By believing in 'God(s),' one can find happiness after death.	—	○	○
Concentrate one's attention on a sacred symbol or sacred words.	—	○	○
The mind of human beings to seek happiness is the basis of faith.	—	○	○
Faith is the desire of human beings for something greater than themselves of their own free will.	—	○	○
Every human being can communicate in some form with 'God(s)' and/or spirits.	—	○	○
When a certain person becomes deeply at one with something, sacred power takes effect there.	—	○	○
When a certain person's consciousness is pure, sacred power takes effect there.	—	○	○
The value of everything that happens in life is determined by how one personally interprets its meaning.	—	○	○
Everything that one experiences in this world is chances given by 'God(s)' for growth of his/her 'Soul.'	—	○	○
When people interact with each other with one's whole heart, a great 'Soul' that surpasses the individual appears and the power of 'God(s)' takes effect there.	—	○	○
Creative power of 'God(s)' and 'Soul' is the source of happiness.	—	○	○
Besides this world, there is an invisible world that is intimately related to this world.	—	—	○
By doing everything with one's whole heart, one can be linked with 'God(s).'	—	—	○
Pray to 'God(s)' for world peace.	—	—	○
Cherishing the moment of 'here and now' will cause sacred power to take effect.	—	—	○
Strong negative feelings of other people or of spirits toward oneself can bring about misfortune by an invisible power.	—	—	○
Looking objectively at one's thoughts and emotions leads to the awareness of one's 'Soul.'	—	—	○
Everything in this world exists in relation to each other by an invisible power.	—	—	○
Everything in this world has a limited existence, but everything is linked with eternal existence.	—	—	○
Self-interest causes suffering and/or misfortune by an invisible power.	—	—	○
'God(s)' is a great life force that is one with the universe.	—	—	○
Human beings are born from 'God(s)' and return once again to 'God(s)' upon death.	—	—	○
One's intuitions are messages from 'God(s)' and/or 'Soul.'	—	—	○
The level of spirituality among human beings differs, with some being close to 'God(s)' and some being distant from 'God(s).'	—	—	○
The free will of human beings is linked with 'God(s).'	—	—	○
It is the way of the world and not the responsibility of 'God(s)' that the world appears unjust.	—	—	○
'God(s)' gives existence to the world by intermingling mental principles and material principles.	—	—	○
Concentrating one's attention on issues at hand leads to an awareness of 'Soul.'	—	—	○
Supernatural powers and/or miracles exist.	—	—	○
'God(s)' carries out creation and/or salvation by the denial by 'God(s)' of itself.	—	—	○
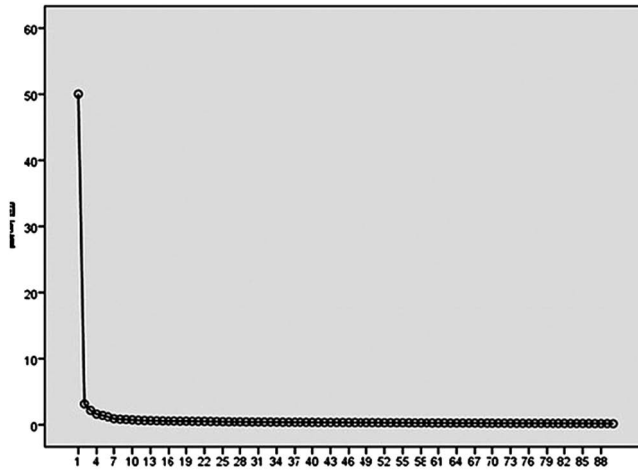
FIGURE 1.   Principal Component Analysis Scree Plot (2016 Survey)

from each country. Valid responses were obtained from 537 Indians, 541 Turks, 571 Japanese, 520 Americans, 522 Italians, 513 Thailanders, 552 Taiwanese, and 542 Russians.

A principal factor analysis was conducted on the 90 religious questions from the pooled data in all countries. Figure 1 reveals a scree plot of the eigenvalues of the main components (N is 2,385). There is one major principal component; it is evident that the eigenvalues of the first component are very large and the second is quite small (the first eigenvalue is 50.04 and its contribution rate is 55.6%). These results indicate that there is one major component among the data from all eight countries. A principal component analysis for each of the eight countries revealed similar results. Each country's contribution rate is as follows: 38.8% for India and 46.6% for Turkey (these were relatively small), 58.7% for Japan, 61.1% for the U.S., 58.7% for Italy, 54.7% for Thailand, 50.2% for Taiwan, and 49.6% for Russia. It is evident that there is an equally large first component (figures omitted).

Table 3 lists the questions from the 2016 survey. A circle is marked next to the questions used in the 2010 and 2015 surveys. Among these questions, those with a first principal component value below .5 included "If one has no attachments, he/she can achieve a feeling of true freedom" (.475) and "It is the way of the world and not the responsibility of 'God(s)' that the world appears unjust" (.481). Questions with a level of .5 included "The value of everything that happens in life is determined by how one personally interprets its meaning," "Every human being has the possibility to be saved," and "Whether a certain person will be saved or not is individually preordained." All other questions surpassed .6.

6. Future Tasks

It is often said that the religiosity of Japan differs from that of the West. As Table 1 demonstrates, several of the questions were not common between the U.S. and Japan. Tables 1 and 2 demonstrate that there are also many questions that possibly differ among the eight surveyed countries. However, one principal component was extracted among the eight countries from the 2016 survey's 90 questions, which were meticulously selected. Of course, it is not possible to say with absolute certainty that all 90 questions constitute a common religiosity, or that the other questions do not constitute this common religiosity. It is certain, however, that there is at least one common factor of religiosity because the 90 questions are consolidated. At present, to pursue the possibility of there being more than two measures of common religiosity, a questionnaire was created that includes items related to ethics and mentality; researchers are planning to conduct a survey in the same eight countries. However, there are some tasks that require further investigation. Thus far, there have been not a few questions indicating a considerably high frequency of "Do not understand the meaning." In common questions for countries with differing religious cultures, it is inevitable that some "Do not understand the meaning" responses will appear. However, it is difficult to evaluate these responses. For example, should a question be removed if "Do not understand the meaning" responses constitute a certain proportion, such as 10% or 20%? Do these responses indicate a lack of religious faith?

Both the ANOVA DIF and multigroup analysis methods were effective. However, it became difficult to grasp a sense of commonality when the number of countries increased. Further, each question was answered on a five or seven-point scale, but there is no proof that the scales were equidistant. To addition, the distribution of the response may not necessarily consist of a normal distribution. These deficits are common in survey data, but to what extent is this permissible?

Furthermore, while fundamental and insurmountable, respondents are biased toward highly educated people who have access to the Internet. Our survey data included around 500 samples from each country, but only around 300 from each were useful for analysis; thus, high quality data must be obtained on a larger scale. The commonality of religiosity could be discussed in a wider scope if more data were obtained from other countries, especially those outside of Western Christianity (e.g., Islamic, Asian, South American, or African nations). Further research is therefore necessary in this area.

Acknowledgements

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