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Exploring the Influence of Secularization on Subjective Well-Being in Japan: Secondary Analysis of "Survey on Japanese Value Orientations" Conducted by NHK

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Abstract

The aim of this paper is to examine the relationship between religiosity and subjective well-being among Japanese people through exploratory analysis of Survey on Japanese Value Orientations which has been carried out by NHK since 1973 to 2008. In this paper, several analyses are conducted with following interests. (1) If religiosity among Japanese people can be divided into several different types of religiosity, what types of religiosity can be extracted or identified? (2) How did religiosity have changed along with generational shifts? (3) Can a positive relationship between religiosity and subjective well-being be found among Japanese people? (4) If so, which types of religiosity have the relationship? (5) Is relationship between those types of religiosity and subjective well-being universal across generations, or does it differ by cohort groups? However, these analyses are conducted not to confirm each proposition, but to provide statistical overviews. The results of the analyses imply that there can be found a positive relationship between traditional religious beliefs and subjective well-being, however, this relationship can be seen only in older cohorts and it seems to be disappearing along with generational shifts.

Introduction

In Western societies, it is often reported that there is a positive correlation between individual religiosity and subjective well-being（ex. Ellison 1991）. A growing number of research papers examines the association of individual religiosity and life-satisfaction or happiness. In World Database of Happiness, organized by Ruut Veenhoven to collect researches concerning happiness, there can be found 242 pieces of literature also concerning religion[1]. However, few studies addressed the relation between religiosity and subjective well-being among East Asian countries. The majority of studies in this field were carried out on Judeo-Christian samples, and researches using East Asian samples are scarce. Therefore, there is a need to use samples derived from East Asian countries to run cross-cultural comparison and to test the generalizability of the relation between religiosity and subjective well-being.

Table 1. 14 items of religiosity in Survey on Japanese Value Orientations[2]

Q27 Religious Behavior（multiple answer） Do you participate any activities which might be related to religions or faith? If yes, please indicate your activities from the following list.	
Q27-1. I usually participate religious activities, such as attending religious services, other religious practices, or missionary works.	（Service/Missionary）
Q27-2. I pray at times.	（Prayer）
Q27-3. I visit my family graves at least once or twice a year.	（Visiting graves）
Q27-4. I read religious texts at times, such as the Bible or scriptures.	（Bible/Scripture）
Q27-5. I have visited religious spaces in order to pray for personal security, success in business, passing entrance exam and so on, in past one or two years.	（Prayer for wishes）
Q27-6. I have talismans or lucky charms around me, such as *Omamori* or *Ofuda*.	（Charms）
Q27-7. I have drawn a fortune slip, or tried fortune-telling in past one or two years.	（Fortune-telling）
Q28 Religious Belief（multiple answer） Do you believe anything which might be related to religions or faith? If yes, please indicate things you believe from the following list.	
Q28-1. God(s)	（God(s)）
Q28-2 Buddha	（Buddha）
Q28-3 Teachings from the Bible or Scripture	（Bible/Scripture teachings）
Q28-4 Life after death /the next life	（Life after death）
Q28-5 Miracles	（Miracles）
Q28-6 Power of charms such as *Omamori* and *Ofuda*	（Power of charms）
Q28-7 Fortune slip / Fortune-telling.	（Power of Fortune-telling）

The aim of this study is to explore the relationship between religiosity and subjective well-being in Japan through exploratory data analysis. However, it is broadly known that the way of having religious beliefs and practice among Japanese people differs from Judeo-Christian people.

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[1] Veenhoven, R., Bibliography of Happiness, World Database of Happiness, Erasmus University Rotterdam, The Netherlands, assessed on 2017/03/31at: http://worlddatabaseofhappiness.eur.nl/hap_bib/bib_fp.php

[2] The questionnaire shown in Table 1 is translated by author. Original questionnaire written in Japanese is available at 高橋幸市 & 荒牧央（2014）. There is another English translation of this questionnaire which is translated by members of NHK Broadcasting Culture Research Institute（Takahashi & Aramaki 2016）.

Table 2. Summary of cohort analysis (source: 清水 2017)

| | Types of Aging and Cohort Effect | |
	Aging Eff.	Cohort Eff.
Q27 Religious Behavior		
1. Service/Missionary	**Upward**	**Downward**
2. Prayer	**Upward**	**Downward**
3. Visiting graves	Upward	Not identifiable
4. Bible/Scripture	**Not identifiable**	**Downward**
5. Prayer for wishes	polytonal	Not identifiable
6. Charms	Not identifiable	Not identifiable
7. Fortune-telling	**Downward**	**Upward**
Q28 Religious Beliefs		
1. God(s)	**Upward**	**Downward**
2. Buddha	**Upward**	**Downward**
3. Bible/Scripture teachings	Not identifiable	Not identifiable
4. Life after death	Not identifiable	polytonal
5. Miracles	**Downward**	**Upward**
6. Power of charms	Not identifiable	polytonal
7. Power of fortune-telling	Downward	Not identifiable

As Romer reported, Christian people are only 1-2 percent of the population in Japan. And people who claim personal religious affiliation with any organized religion are about 10 percent（Romer 2010）. However, it doesn't mean most Japanese people believe in nothing religious or participate no religious practice. In fact, about 40 percent of the population report they believe in God(s) or Buddha（*kami* or *hotoke*）, and more than 60 percent visit their ancestors grave constantly（NHK 放送文化研究所 eds. 2015）. Moreover, Shimizu indicated there is secularization process at individual level taking place in modern Japanese society, and new types of religiosity appearing among young generations（清水 2017）. He conducted cohort analysis on 14 different variables concerning religious beliefs and behaviors, with the time-series data of Survey on Japanese Value Orientations（*Nihonjin no ishiki chosa*）which has been conducted by NHK（*Nihon hoso kyokai*: Japan Broad Casting Corporation）since 1973 to 2008. As result of analysis, he reported（1）in younger generations, less people participate religious service or missionary works, pray at times, read bible or holy scriptures, and believe in God(s) and Buddha,（2）at the same time, younger generations are more likely to enjoy fortune-telling and believe in miracles（see table 1 and 2）. This fact implies younger generations have different types of religiosity from older generations. In other words, religiosity observed with 14 variables included in Survey on Japanese Value Orientations can be divided into several types. Therefore, examining the relationship between only a single indicator of religiosity and subjective well-being is not sufficient. Through using quantitative techniques, this study also aims at identifying different types of religiosity observed in Japan, and at examining how the relationship differs depending on which type of religiosity individuals have.

Method
Dataset

For the secondary analysis, this study uses the pooled dataset of Survey on Japanese Value Orientations. This survey was first carried out in 1973 by NHK. Since then, NHK has kept carrying out the same surveys in every 5 years. In each survey wave, there are between 3,000 and 4,000 samples randomly chosen from Japanese men and women aged 16 or above. The raw data is available on the Social Science Japan Data Archive（SSJDA[3]）for the use of scientific research. The latest survey was conducted in 2013, however, the data from 2013 is not open to the public yet. Therefore, data from 1973 to 2008（from wave 1 to 8）is available so far[4].

Variables

The Survey on Japanese Value Orientations contains 14 items which concern individual religious behaviors and beliefs. This study classifies individuals' religiosity into different types of religiosity according to the answers for these 14 variables. The actual questions are shown in Table 1. In the first part of the question, samples are asked if they do any religious activities, such as participating religious services or missionary works, giving prayers, visiting graves, reading the Bible or other holy scriptures, giving prayers for specific wishes, having talismans or lucky charms, drawing fortune-slips or enjoying fortune-telling. In the latter part of the question, samples are also asked if they believe in God（s）, Buddha, teachings from the Bible or other holy scriptures, life after death, miracles, power of talismans or lucky charms. The answer for each item is coded as 0 or 1.

When examining the relationship between religiosity and subjective well-being, we also need a measure of subjective well-being. This study uses 4 point life-satisfaction scale as an indicator of individual subjective well-being. In this item, samples are asked "How satisfied are you with your life as a whole these days? Please tell the closest answer to your mind." And they are asked to choose their answer from（1）unsatisfied,（2）rather unsatisfied,（3）rather satisfied, and（4）satisfied.

Analysis

In order to classify individuals' religiosity into different types of religiosity according to the answers for 14 variables concerning religious behaviors and beliefs, this study uses latent class analysis. Latent class analysis is a data reduction technique which is similar to factor analysis. As broadly known, factor analysis is a method used to describe observed variables in terms of unobserved variables which are called factors. However, while both observed and unobserved variables are supposed to be continuous variables in factor analysis, latent class analysis supposes both variables to be categorical variables（藤原, 伊藤 & 谷岡 2012）. In this case, because all the

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[3]   Social Science Japan Data Archive（URL: http://csrda.iss.u-tokyo.ac.jp/en/）

[4]   For more details about Survey on Japanese Value Orientations, see 高橋幸市 & 荒牧央（2014）

14 religiosity variables are dichotomous variables which are coded as 0 or 1, it is more reasonable to use latent class analysis than factor analysis.

Moreover, when factor analysis extracts factors from observed variables, it focuses on the relationship between variables, and it is assumed that the structure of factors is same among samples. However, latent class analysis extracts latent classes from observed variables focusing on patterns of individuals' reactions to multiple categorical variables. Therefore, factor analysis is sometimes called variable-centered approach, while latent class analysis is called person-centered approach (Pearce, Foster & Hardie 2013; Muthén and Muthén 2000). Because the aims of this study are not only to examine the relationship between religiosity and subjective well-being among Japanese people, but also to examine how the relationship differs depending on which type of religiosity individuals have, it seems more reasonable to take the person-centered approach.

To conduct latent class analysis, I used R ver. 3.2.4 with poLCA package. Since this study uses 14 dichotomous variables, there are 16384 unique response patterns possible. I prepared 5 models from the model which identifies only one latent class (model 1) to the model which identifies 5 latent classes (model5) to see which model fits the data best in terms of several model fit values, such as Bayesian Information Criterion (BIC) and Akaike Bayesian Information Criterion (ABIC). However, I didn't include models with 6 or more latent classes in the examination in terms of parsimony and interpretability of result.

Result of Latent Class Analysis

Table 3 shows the several model-fit values of results of latent class analysis for each model. Comparing the models with one another, you can easily tell the model with one class (model 1) fits the data most poorly. And as the numbers of latent classes increases, all model-fit values decrease. It is clear that the model with 5 latent classes (model 5) has the lowest BIC and ABIC and fits the data best.

Table 3. Model-fit values for Model 1 to Model 5

model	log-likelihood	df	BIC	ABIC	CAIC	likelihood-ratio
model 1	-198403.4	16369.0	396951.2	380593.1	396965.2	47735.1
model 2	-190193.0	16354.0	380685.3	380593.1	380714.3	31314.4
model 3	-186058.5	16339.0	372570.9	372431.1	372614.9	23045.3
model 4	-183866.7	16324.0	368342.1	368154.6	368401.1	18661.7
model 5	**-182186.8**	**16309.0**	**365137.1**	**364901.9**	**365211.1**	**15302.0**

Table 5 shows the result of latent class analysis for model 5. The first row of table 5 reveals the estimated percent of individuals who belong to each class. Class 1 is the largest class with 29.5% of samples. Class 2 (28.2%) and Class 3 (23.7%) have also relatively a large size of samples. However, there are only 9.9% of samples who belong to Class 4 and 8.8% belong to Class 5. Under the size of each class, class-conditional response probabilities for each item are also reported.

Table 4. Class-conditional response probabilities of each items

Model for 5 latent classes					
	Class 1	Class 2	Class 3	Class 4	Class 5
Size of classes	29.5%	28.2%	23.7%	9.9%	8.8%
Class-conditional response probabilities					
Q27 Religious Behavior					
1. Service/Missionary	2%	16%	2%	31%	**67%**
2. Prayer	6%	26%	9%	24%	8%
3. Visiting graves	**51%**	**82%**	**66%**	**84%**	**50%**
4. Bible/Scripture	1%	3%	2%	24%	52%
5. Prayer for wishes	8%	27%	**50%**	**66%**	11%
6. Charms	7%	36%	**53%**	**84%**	8%
7. Fortune-telling	7%	12%	**47%**	**53%**	4%
Q28 Religious belief					
1. God(s)	6%	**58%**	18%	**86%**	**42%**
2. Buddha	7%	**88%**	6%	**88%**	**61%**
3. Bible/Scripture teachings	2%	1%	5%	27%	**36%**
4. Life after death	2%	4%	13%	**41%**	23%
5. Miracles	6%	4%	25%	**44%**	15%
6. Power of charms	3%	12%	20%	**62%**	2%
7. Power of fortune-telling	2%	2%	14%	26%	2%

Based on these probabilities, I labeled these 5 classes as "Custom of visiting graves," "Traditional beliefs," "Merit-making," "Spirituality (individualized religiosity)," and "Institutional religiosity."

Class 1: Custom of visiting graves

Most individuals who belong to Class 1, don't believe in anything which is concerning religion at least as far as this survey covers, nor they enjoy no religious activities except visiting their family graves once a year. It seems even when they're visiting their family graves, they are doing so just because it is a very common Japanese custom. Besides, about a half of members in this latent class do not even visit graves.

Class 2: Traditional beliefs

Similar to individuals in Class 1, individuals in Class 2 don't much participate religious activities. However, more than 80% of members in this latent class answered they visit graves at least once a year, with some beliefs in God(s) and Buddha. It is not really clear what they mean by answering they believe in God(s) and Buddha, because Gods (*kami*) and Buddha (*hotoke*) in Japanese linguistic contexts have various meanings. For example, there is an expression "a person becomes *hotoke* when he/she dies（成仏）." In this sense, believing in Buddha could mean rather believing in the existence of the spirit of ancestors. However, it seems to be that they are aware of some kinds of supernatural existence and this awareness is connected to their high probability of visiting graves.

Class 3: Merit-making

The characteristic of Class 3 is that they have relatively high probability of doing "prayer for wishes," "lucky charms" and "fortune-telling," but not on other religious activities. Individuals in this latent class can be understood as people who utilize religion only for their own good/profit. However, the majority of members in this class don't believe in supernatural powers. Perhaps, for individuals in this class, those religious activities might be more like an insurance or lottery.

Class 4: Spirituality (Individualized religiosity)

Members of class 4 have possibilities to take wide range of religious activities and beliefs. However, it doesn't immediately mean that this latent class is especially religious among other classes. Since probabilities on "service," "prayer," and "Bible teachings" which are common religious practice in institutional religion are relatively low compared with probabilities on other items, it can be interpreted that members of Class 4 are people who enjoy various kinds of spiritual experience, but without any denomination, or institutional religiosity. I labeled this class as spirituality, or individualized religiosity.

Class 5: Institutional Religiosity

Members of Class 5 participate "service," "prayer," "reading holy scriptures," with beliefs in God(s) and Buddha. This kind of religiosity can be understood as typical religiosity of individuals who belong to institutional religion, such as traditional Buddhism, Christianity, and other new religions.

Generational Difference in Religiosity

Before examining the relationship between different types of religiosity and subjective well-
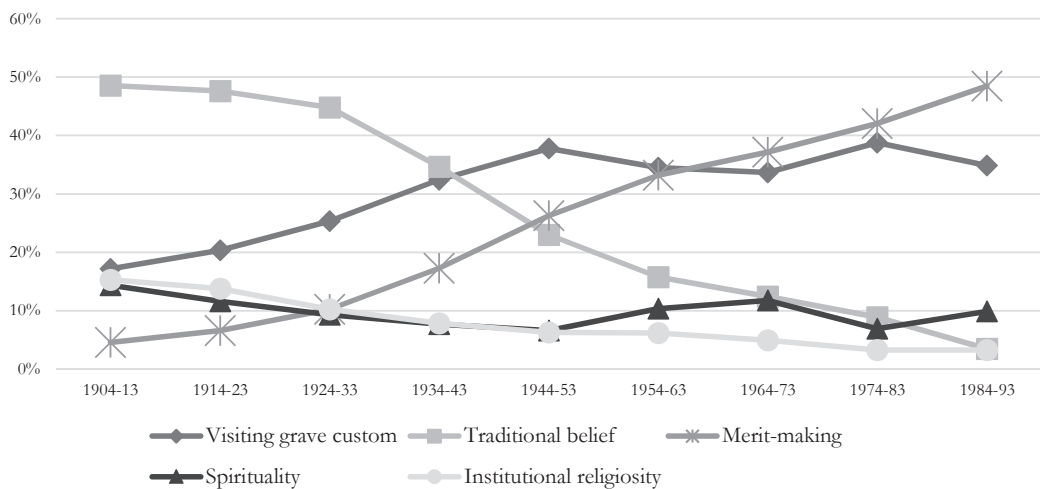

Figure 1. Proportion of each latent class in different cohort groups

being, it should be checked whether if the result of latent class analysis is consistent with previous studies. Figure 1 shows the proportion of people who belong each latent class in different cohort groups. In the oldest cohort group born in 1904-13, 48.5% of people belong to the latent class which I labeled "Traditional beliefs," however, as generation shifts, less people belong to this class. In the youngest cohort group born in 1984-93, there are 3.5% of people belong to "Traditional beliefs." The proportion of "Institutional religiosity" also decreases along with the generation shift (15.3% in the oldest cohort, and 3.3% in the youngest cohort). Instead, "Custom of visiting graves" and "Merit-making" increases their proportion as generation shifts. The percentage of people who belong to "Custom of visiting graves" in the youngest cohort (34.9%) is almost twice as the percentage of the oldest cohort (17.2%). And the percentage of the "Merit-making" in the youngest cohort (48.5%) is more than ten times as the percentage in the oldest cohort (4.6 %). In short, the majority of people in the oldest cohort born in 1904-13 belong to "Traditional beliefs," while most people in the youngest cohort born in 1984-93 belong to "Custom of visiting graves" or "Merit-making."

These generational differences in each type of religiosity are consistent with findings reported in previous studies. As already shown in Table 2, Shimizu indicated that the numbers of people who participate religious service, who give prayers, who read Bible, who believe in God(s) and Buddha decrease their numbers as generation shifts (清水 2007). According to the result of latent class analysis in this study, those people are likely to belong "Traditional beliefs" or "Institutional religiosity" which also decrease their share in the population along with generational shifts.

Correlations between Religiosity and Subjective Well-Being

At the last part of the analysis, I examine the relationships between each type religiosity identified by latent class analysis and subjective well-being. To examine the relationships, I computed Pearson's correlation coefficients between membership probabilities for each latent class and life-satisfaction scale.

In this analysis, samples are divided into 3 groups by their cohort groups, in order to see whether the relationships are universal across different generations.

Table 4 shows the Pearson's correlation coefficients between membership probability for each latent class and life-satisfaction scale. Among the older cohort groups born in 1904-33, "Traditional beliefs," "Spirituality" and "Institutional religiosity" have significant and positive correlations with Life-Satisfaction Scale. This result indicates individuals with these types of religiosity are more likely to be satisfied with their life. However, these correlation coefficients become smaller in the middle group. Among the younger cohort group, no significant correlations can be found. On the other hand, "Custom of visiting graves" and "Merit-making" have negative correlations with Life-Satisfaction Scale among the older cohort group. However, similarly to the former variables, these negative coefficients also shrink as cohort group gets younger. Membership probabilities of "Custom of visiting graves" is the only variable with a significant correlation with life-satisfaction

Table 5: Correlation between life-satisfaction scale
and posterior class membership probabilities of each class

Cohort group		1904-33	1934-63	1964-93
Correlation with Life-Satisfaction Scale				
Life-Satisfaction Scale	Pearson's R	1	1	1
	Sig. (2-tailed)			
	N	6905	16737	4796
Visiting grave custom	Pearson's R	**-.109****	**-.074****	**-.047****
	Sig. (2-tailed)	.000	.000	.001
	N	6905	16737	4796
Traditional beliefs	Pearson's R	**.078****	**.074****	**.018**
	Sig. (2-tailed)	.000	.000	.225
	N	6905	16737	4796
Merit-making	Pearson's R	**-.063****	**-.028****	**.016**
	Sig. (2-tailed)	.000	.000	.270
	N	6905	16737	4796
Spirituality	Pearson's R	**.050****	**.041****	**.021**
	Sig. (2-tailed)	.000	.000	.142
	N	6905	16737	4796
Institutional religiosity	Pearson's R	**.024***	**.009**	**.009**
	Sig. (2-tailed)	.049	.262	.554
	N	6905	16737	4796

scale among the younger cohort group. However, it seems higher membership probability for this class in the younger cohort groups is associated with subjective well-being negatively. In short, regardless to which type of religiosity it is, the relationship between religiosity and Subjective well-being seems to be disappearing in younger cohort.

Possible Explanations

For the result of correlation analysis, there are several possible explanations. Here I close my discussion with sharing three different explanations for the results above.

(1) Norris and Inglehart's (2004) secularization theory

The first explanation focuses on Norris and Inglehart's secularization theory. According to them, religion has a role in providing sense of security. Therefore, where level of human security is low, religiosity takes an important role to maintain individuals' subjective well-being. On the other hand, if societies get modernized and safer, importance of religion decreases. In Japan, we experienced rapid modernization process since the end of 19th century. This caused the sense of security and safety (in other words, religious coping) which is provided by religion to be less important for mainlining individuals' subjective well-being.

(2) Socialization theory

Individuals develop their religiosity when they are socialized. In Japan, religion is fused and

connected with many norms and customs in people's daily life, for example, saying "Itadakimasu（say grace）" with clapping hands before meals. If a person is raised in a rich and traditional Japanese family, or in traditional community with strong solidity where these norms and customs are likely to be strict, it can be assumed that he/she would more likely to have a certain kind of religious beliefs. In this sense, whether individuals have religious beliefs or not used to work as an indicator of their social attributes. However, as society get more modernized, people start having more individualized values. This process brings greater freedom to individuals from norms and customs which used to be set by their family or community. Because of the decline of those norms and customs, there are less opportunities for them to internalize religiosity through their socialization process today. Therefore, religiosity in Japan lost its use as an indicator of people's social attributes. And this caused the correlations between religiosity and subjective well-being to be decreased.

(3) Rise of new types of religiosity

This Survey on Japanese Value Orientations was conducted first in 1973. And questionnaire was designed to measure traditional religiosity of Japanese people of the time. It is possible the religiosity we can measure with these 14 items has already become too old for the religious situation today. If so, it is also a possible interpretation that there are new types of religiosity appearing, like enjoying yoga, hand-healing, or reading books of spiritual self-development. And these new types of religiosity might have a positive correlation with subjective well-being instead of other traditional types of religiosity.

For deeper understanding, further study will be needed.

Acknowledgements

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