RUNNING HEAD: FAITH MATURITY SCALE

"Faith Maturity Scale" for Chinese: A Revision and Construct Validation

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Abstract

Using a large sample of Chinese Christians (n=2,196), we examined the internal structure,

reliability, and validity of the Faith Maturity Scale (FMS). Despite its being developed in

North America, and for a mainline Protestant population, the FMS was shown to have validity

among non-Western, non-mainline Protestants. There is convergent validity with self-reported

religious practices and a belief measure of religiosity. Our analyses also confirmed good

construct validity with the Big Five personality dimensions, social axioms, attributional style,

as well as quality of life. FMS remained associated with religious practices and high quality of

life after personality was statistically controlled. Findings supported that the Chinese version of

the FMS assesses the same theoretical construct as does the original scale, and that the

distinction between the vertical and horizontal dimensions of faith maturity is meaningful.

"Faith Maturity Scale" for Chinese: A Revision and Construct Validation

The increasing attention to the benefits of religion and spirituality on people's health and well-being (see, e.g., Miller & Thoresen, 2003) and adolescent spiritual development (Benson, Roehlkepartain, & Rude, 2003; King & Bension, 2006; Roehlkepartain, Benson, King, & Wagener, 2006) underscores the importance of measuring religiosity validly. To this end, the faith maturity scale (FMS; Benson, Donahue, & Erickson, 1993) was developed with an American Protestant sample. To the extent that the FMS focuses on the value of and behavioral changes in religious life, rather than right belief, the construct it measures is similar to intrinsic religiosity. This scale has been used widely (Dy-Liacco, Piedmont, Murray-Swank, Rodgerson, & Sherman, 2009; Ji, 2004; Piedmont & Nelson, 2001; Salsman & Carlson, 2005), and found to be robust in predicting psychological adjustment (Salsman & Carlson, 2005). It correlates with measures of emotional maturity, personal meaning, and prosocial behavior. Incremental validity evidence supports use of the FMS as a measure of religiousness over and above existing personality constructs (Piedmont & Nelson, 2001).

Whether the FMS is applicable outside of this North American context is, however, an empirical question. The FMS was found to be reliable among Catholics in the Philippines (Dy-Liacco et al, 2009) and among the Chinese (Chou & Chen, 2005; Fu, 2008). However, there is no evidence on its validity outside of North America.

The internal structure of the FMS is also worthy of attention. According to Benson et al. (1993), the scale is made up of the vertical and horizontal dimensions. The vertical dimension captures the emphasis on maintaining one's relationship with that which is transcendent, while the horizontal dimension captures the emphasis on serving humanity, in mercy and justice. Obviously, these two dimensions align with the biblical mandate to love both God and fellow humans.. It is also congruent with the developmental perspective that religion and spirituality are a transcendence of self in relation to a perceived divine *and* a concern for the social good (King, 2003; King & Bension, 2006; Lerner, Alberts, Anderson, & Dowling, 2006). Along this line, Goodenough (2001) and Kalton (2000) opined that spirituality has to embrace both the horizontal and vertical dimensions to represent a fuller religious life. To them, the vertical dimension is about the hierarchical relation and unification with an absolute ultimate/creator, whereas the horizontal dimension concerns the ethical aspect of religious life and the sense of belonging to universe of humans. Although the two-dimensional structure has received some empirical support and is shown to be related differentially to personality and prosocial behavior (Piedmont & Nelson, 2001), Christian doctrinal orthodoxy (Ji, 2004), psychological distress (Salsman & Carlson, 2005), and hope and optimism (Ciarrocchi, Dy-Liacco, & Deneke, 2008), whether the two dimensions and the distinction between them are psychologically meaningful for the Chinese population awaits further empirical work.

Thus, the present investigation had two purposes. First, we examined the internal structure of the FMS for a Chinese [i], primarily evangelical/fundamentalist population. We hypothesized that

H1. The FMS has for the Chinese population a two-dimensional internal structure, representing the vertical and horizontal aspects of spirituality.

A second purpose of this study was to evaluate validity of the instrument for the Chinese, by examining the link of the FMS with personality traits, social axioms, quality of life, and religious behaviors.

FMS and Personality

Some past research (e.g., Eysenck, 1998) suggested that having a religious affiliation is associated with high agreeableness and conscientiousness. Saroglou's (2002) meta-analysis showed religiosity positively correlated with extraversion, in addition to agreeableness and conscientiousness. Therefore, we expected that:

H2a. The FMS would be positively correlated with extraversion.

H2b. The FMS would be positively correlated with agreeableness.

H2c. The FMS would be positively correlated with conscientiousness.

As for the relationship of religiosity to openness to experience (also called intellect or intellectance) and emotional stability, Saroglou (2002) noted a contingency on the kind of religiosity measured. While openness to experience is negatively related to religious

fundamentalism, it is positively related to the quest orientation. Therefore, given that horizontal

dimension is more concerned with the complexity of human nature, rather than the sole

reliance on the Absolute, we tentatively hypothesized that

H2d. The FMS (but to a lesser extent for the vertical dimension) would be positively

correlated with intellect.

Furthermore, whereas extrinsic religiosity is related to high neuroticism, open or mature

religiosity is related to emotional stability (Maltby, 1999; Saroglou, 2002). Therefore, to the

extent that the FMS does not measure extrinsic religiosity, but only a general inclination to

faith, we hypothesized that

H2e. The FMS would be positively correlated with emotional stability.

FMS and Social Axioms

People hold general beliefs (called social axioms) about the world (Leung et al., 2002).

One is the religiosity axiom, that there are supernatural influences on the world, and that

religions are good. Although the FMS is specific to the Christian faith, we expected that

H3. The FMS would be positively correlated with the religiosity axiom.

Another relevant axiom is fate control, which is the belief in the presence of impersonal

forces influencing social events. Examples of items are "some people are born lucky", and "fate

determines one's successes and failures". In contrast to most Asian and New Age religions, the

Christian theology emphasizes a belief in a caring, personal God rather than supernatural

principles or an impersonal *Qi* (cosmic energy) that might control people's destiny (Hui, Ng, &

Tai, 2010). Therefore, we expected that people who are more advanced in the Christian faith

are less likely to be high on fate control. In other words,

H4. The FMS would be negatively correlated with fate control.

FMS and Attributional Style

Abramson, Seligman, and Teasdale (1978) and other researchers noted that the style of

attributing good events to factors that are stable, global and internal characterizes an optimistic

outlook in life, while attributing bad events to the same internal, stable and global factors

characterizes a pessimistic outlook. Recent studies have shown an association of optimism with

spiritual commitment, religious affiliation (Ciarrocchi, Dy-Liacco, & Deneke, 2008), and

intrinsic religiosity (Salsman, Brown, Bretching, & Carlson, 2005). We therefore expected that

H5. The FMS would be related to an optimistic attributional style.

FMS and Quality of Life

There have been much theoretical work and empirical evidence on the relationship

between religiosity and subjective quality of life (QOL) or well-being (e.g., Koenig,

McCullough, & Larson, 2001; Peterson & Webb, 2006). Sawatzky, Ratner, and Chiu's (2005)

meta-analysis of 51 studies found the subjective quality of life moderately related to spirituality.

Therefore, if the FMS measures in a Chinese population what it purported to measure, it should

also predict QOL. Following Piedmont and Nelson (2001) who argued that religiosity has

incremental validity over personality factors, we hypothesized that

H6. The FMS would, over and above the Big Five personality dimensions, predict various

aspects of quality of life.

FMS and Religious Behaviors

Although it may sound somewhat intuitive, it is reasonable to expect that people who have

a high FMS score to engage in more behaviors that are encouraged in their faith system.

Moreover, as a finegrained dispositional variable, faith maturity would have unique association

with religious behaviors that is not accounted for by general personality factors. Therefore,

H7. The FMS would, over and above the Big Five personality dimensions, predict specific

religious behaviors.

Method

Procedure and Participants

Data for the present study were collected as part of a larger program of longitudinal

research in the formation and transformation of beliefs among the Chinese. For that

longitudinal project, prospective participants were reached via diverse channels (bulk emails

through five universities and one community college in Hong Kong and Macao, bulk emails

and public announcements in two churches in Hong Kong, internet advertising, and snow

balling). All of them were led to our research website, where they learned that this was a panel

study for which they would later receive several invitations to complete online questionnaires

(in Chinese), at which time they could decide to volunteer or not. After they had read the

consent form and indicated their willingness to participate, they would immediately receive an

email containing a URL to the first questionnaire. This questionnaire session lasted for about

30 minutes. To encourage participation, we offered a lucky draw (1 in 100 chance to win a gift

voucher of HK$100 (about USD15). We also told participants that if they gave up the lucky

draw, a donation of HK$20 would be given to a charity for poverty reduction. In any case, they

would receive, as a token of our gratitude, a brief analysis of their personality.

Just as paper-and-pencil surveys have their drawbacks, internet surveys have their own as

well. These include sampling bias towards the computer-literate, younger, and more educated.

However, as the online method can potentially give us access to a larger sample at a lower cost,

it is a good complement to the conventional method. The full sample of the first wave of

survey participants (which we used for the present study) is made up of 6,207 individuals, of

whom 2,196 indicated that they were Christians. The analyses reported below were based on

this Christian sub-sample. A large portion (83.2%) of them came from over 320 churches in

Hong Kong, Macao, China, and other parts of the world, while the rest reported not having

been to church during the past month. A questionnaire administered in the second wave

suggested that about 37% received the invitation to participate through their universities or

churches, 14% were invited by their friends, and 14% saw our research webpage. Another 10%

were notified by friends through blogs or social networking on the internet, 5% on organization

or university websites, 4% in seminars or classes, 3% by leaflets, and 2% on internet forums.

Measures

Faith maturity. The short form of FMS (Ji, 2004, see appendix) with 12 items was

adopted for this study. Participants rated each item on a 7-point scale (1= *never*;

4=*occasionally*; 7= *always*). This short form of the scale has been translated into Chinese

(Chou & Chen, 2005; Fu, 2008), with internal consistency of the two dimensions of FMS

between .74 and .85.

Personality. The 50-item International Personality Item Pool Big-Five Domain scale

(IPIP; Goldberg et al., 2006) was used to measure five personality dimensions, namely intellect

(openness to experience), conscientiousness, extraversion, agreeableness, and emotional

stability. Studies have shown that the IPIP-Big Five was comparable to and highly correlated

with longer measures of Big Five, such as Costa and McCrae's (1992) NEO-FFI (Gow,

Whiteman, Pattie, & Deary, 2005; Lim & Ployhart, 2006; Mõttus, Pullmann, & Allik, 2006).

The IPIP items had been translated into Chinese (followed by the usual back-translation

procedure) and used previously in a study for validating a personality scale. Hui, Pak, and

Cheng (2009) reported that Cronbach's alpha of conscientiousness was .78; extraversion .87;

agreeableness .77; intellect .79 and neuroticism .91, comparable to the mean scale alpha of .84

reported by IPIP. Participants rated each item on a 5-point scale (1= extremely disagree; 5 = extremely agree).

Social axioms. To avoid fatigue and enhance completion rate, we had to shorten the original 60-item Social Axiom Survey II (SAS; K. Leung, et al., 2009). Five items most strongly loaded on each of the following dimensions were selected: social cynicism (negative assessment of human nature and social events), social complexity (belief in multiple and uncertain solutions to social issues), reward for application (belief that investing human resources will bring good outcomes), religiosity (belief in the presence of supernatural influences on the world, and that religions are good), and fate control (belief in the presence of impersonal forces influencing social events). A 5-point scale similar to the IPIP was used.

Attributional style. Following the format of the original attributional style questionnaire (Peterson, Semmel, Baeyer, Abramson, Metalsky, & Seligman, 1982), we constructed an internet version of the questionnaire. Participants were asked to choose from a list what they perceived as the causes for each of the five good events and five bad events. They then rated, on a 7-point Likert scale, whether those selected causes were stable (versus unstable) and global (versus specific). We summed the stability and globality ratings on the factors after reversing those items underlying bad events to yield an optimism score. Cronbach alpha was .67. As this measure was administered about half a year later, there was some participant attrition.

Quality of life. The 28-item Hong Kong Chinese version of World Health Organization Quality of Life Measures (WHOQOL-BREF(HK); K. F. Leung, Tay, Cheng, & Lin, 1997) has been widely used in the study of Chinese in Hong Kong (C. Y. S. Leung & Tsang, 2003; K. F. Leung, Wong, Tay, Chu, & Ng, 2005; Tsang, 2005). In the present study, two items were dropped. (One was on whether the food one likes is readily available, and the other on sex life. We deemed the first item trivial, and the second too intrusive.) The instrument provides indices on Physical Health, Psychological Health (culturally adjusted for Hong Kong), Social Relationships, and Environment. Overall quality of life and overall health were indicated by one item each. Participants responded to each item on a 5-point scale.

Religious behaviors. There were a total of ten items. Four of them asked participants to indicate on a yes-no scale if they had during the past year read two or more religious books, talked to others about their faith, attended mission-related activities, and made financial contributions to missionary work. Another four binary questions were on whether participants had in the previous month attended or served in various church activities. The last two were answered on a graded scale. One question was on the frequency of bible study and prayer during the past week (0 to 7+ times), while the other on the frequency of watching/listening to religious broadcast (0 to 7+ times).

Results

Internal Structure of the FMS

To understand the underlying structure of the scale, a series of CFAs was carried out to test three models. Model 1 is a one-factor model. Model 2 is a two-factor model with five items on the horizontal dimension and seven items on the vertical dimensions, as suggested by Ji (2004). Model 3 is a two-factor model similar to Model 2, with one fewer item from each of the dimensions. Both dropped items had low item-total correlations on our preliminary analysis. Moreover, one of them (item 1) had been found to load on the vertical dimension in some studies but on the horizontal dimension in others (Ji, 2004; Piedmont & Nelson, 2001).

The one-factor model (Model 1) did not fit well with the observed data ($\chi^2 = 2963.06$, $df = 54$, $p < 0.001$; $CFI = .761$, $NFI = .759$, $RMSEA = .093$). Model 2 (a two-factor model) is an improvement ($\Delta\chi^2(1) = 1115.31$, $p < .005$), although still unacceptable ($CFI = .853$, $NFI = .849$, $RMSEA = .074$). For Model 3 (the revised two-factor model), although the chi square statistic for is still significant ($\chi^2 = 939.63$, $df = 34$, $p < .001$), the other indices demonstrate satisfactory fit ($CFI = .910$, $NFI = .907$, $RMSEA = .066$). Thus, this model was adopted as the final factor model. Factor loadings of all items were large and statistically significant, with values ranging from 0.60 to 0.89. H1 was supported. Accordingly, the following analyses were conducted with the horizontal and vertical subscales separately.

Descriptive statistics and reliability estimates are summarized in Table 1. The internal consistency of the overall scale and that of its two subscales were satisfactory. The two subscales were correlated with each other ($r = .47$, $p < .001$). Consistent with earlier studies (de

Vaus & McAllister, 1987, Francis, 1997), which found women to be more religious than men,

we observed a gender difference in the same direction on the vertical subscale. However, men

were higher than women on the horizontal subscale, suggesting that Christian females are less

committed than Christian males when it comes to social concern.

Relationship between the FMS and Other Psychological Variables

As shown in Table 2, both the FMS subscales correlated moderately with all five

personality dimensions. Four personality dimensions (extroversion, conscientiousness, and

emotional stability) correlated more strongly with the vertical dimension of the FMS than with

the horizontal dimension. Intellect, however, was associated more strongly with the horizontal

dimension. All hypotheses regarding correlation between the FMS and personality (H2a to H2e)

received support.

Second, as predicted in H3, the FMS vertical and horizontal subscales were moderately

associated with the religiosity subscale of the SAS (rs= .48 and .23, respectively, $p < .001$).

Furthermore, as predicted in H4, they were negatively associated with the fate control subscale

(rs= -.25 and -.13, respectively, $p < .001$). Although we had not made any prior prediction, we

also present the correlation coefficients between the FMS and the other three social axioms in

Table 2. Both social complexity and reward for application correlated positively with the two

subscales of the FMS, while social cynicism correlated negatively with the vertical subscale.

Third, as predicted in H5, both vertical and horizontal subscales were correlated with optimistic attributional style (rs= .22 and .16, respectively, $p < .01$). Fourth, the FMS vertical and horizontal subscales were correlated moderately with overall QOL (rs= .32 and .21, respectively, $p < .001$). Whereas the FMS related moderately with physical health (r=.24) and social relationship (r=.30), it was strongly associated with psychological well-being (r=.45). Furthermore, compared to the horizontal dimension, the vertical dimension of the FMS has a consistently higher correlation with various domains of quality of life. These findings were all consistent with H6.

With regard to H7, we compared people who reported high level of religious practice (and hence presumably were more devoted in their faith) with those who did not, on the FMS. Table 3 shows that the former had significantly higher FMS scores than those who did not, thus providing further evidence of construct validity. The point-biserial correlation between FMS (especially the vertical dimension) and various religious practices is moderate to high. Furthermore, the FMS was correlated with the frequency of private prayer and bible study, as well as with the frequency of watching/listening to Christian broadcast (Table 4). The vertical dimension of the FMS, compared to the horizontal dimension, has a higher correlation with various religious practices. These findings are consistent with H7.

Incremental Validity of the FMS

To examine whether the FMS provides additional explanatory power over and above what personality measures can offer, we conducted a series of hierarchical multiple regression on two sets criterion variables. The first set of criterion variables is religious in nature. They are "religious practice" (which is an aggregation of the binary responses on the eight items described in the preceding section), frequencies of bible reading/prayer, and frequency of watching religious broadcast. The second set of criteria is the quality of life variables. In all regression analyses, the demographic variables (i.e., age, family income, education, years of having become a Christian) were first entered in the model, followed by the personality dimensions. The two FMS dimensions were entered in the third step.

Table 5 shows that adding the FMS to a regression model resulted in a significant improvement in R^2. This is true for almost all criterion variables, except physical health. Although in predicting non-religious content variables, the size of variance accounted for by the FMS was smaller than that by the personality measures ($\Delta R^2 = .04, .02, .01, .03$ and $.01$ for psychological health, social relationship, environmental, overall QOL and overall health respectively), the FMS provides substantial explanatory power for religious practices ($\Delta R^2 = .18$) and reading bible and prayer ($\Delta R^2 = .14$).

There is a difference between the vertical and the horizontal dimensions: While the vertical dimension of the FMS predicted various criterion variables, the horizontal dimension was less consistent as a predictor. That the horizontal dimension could predict interpersonal

relationship and environmental health and, to a lesser extent, personal religious practices is in

line with the theoretical distinction between the two dimensions, which the original creator of

the scale had intended.

Discussion and Conclusion

The primary purpose of this investigation was to refine and evaluate a Chinese version of

the FMS. We were able to achieve this aim with a demographically diverse sample drawn from

the Chinese population. As predicted in H1, the instrument still maintains good reliability and a

clearly interpretable two-dimensional structure specified in earlier research, after two items

were dropped from the instrument on the basis of their unstable psychometric properties shown

in previous studies. The two-dimensional construct of faith maturity has generalizability not

only beyond North American samples to the Chinese, but also beyond the mainline

denominations to the evangelical/fundmentalist traditions prevalent in the current sample.

There is evidence of validity of the FMS within a nomological net of personality, social

axiom, attributional style, and quality of life. Consistent with H2a to H2e, we found the FMS

correlated with the Big Five. While many previous studies suggested that the correlation of

religiosity with the Big Five is low (Dy-Liacco et al., 2009; Emmons, Barrett, & Schnitker,

2008; Piedmont & Nelson, 2001; Saroglou, 2002), the present study showed a slightly stronger

correlation. This is so even for the correlation with openness, which in some previous studies

(e.g., Piedmont & Nelson, 2001) has not been significant. This difference in the strength of

correlation can be attributed at least partially to our sample, which while being all Christian, was very diverse on age, occupation, and other demographic characteristics. That the participants had come from several hundreds of churches distinguished the present study from previous ones. The findings are aligned with Saroglou's (2002) observation that mature faith is associated positively with personality dimensions such as extraversion, agreeableness, conscientiousness, openness to experience, and emotional stability. In addition, the negative association of the FMS with social cynicism and fate control, as well as the positive correlation with optimism, further demonstrate the FMS as an instrument that taps the positive side, rather than the dark side of religiosity.

Moreover, the FMS, like most measurements of religiosity, has incremental validity over the Big Five for the prediction of various religious practices (H7). It can predict missional activities (e.g., giving money to support missionary work, and talking to others about one's own faith), which are more emphasized in fundamentalist/evangelical churches than mainline churches. Therefore, despite its being originally constructed with the American mainline churches in mind, the present study provides initial evidence that the FMS can be applied beyond cultural and denominational borders.

Of the two dimensions of the FMS, the vertical dimension has a weaker association with several criterion variables. This difference between the two dimensions replicates previous research (Ciarrocchi et al., 2008; Dy-Liacco et al., 2009; Piedmont & Nelson, 2001), and

highlights that the horizontal dimension of the FMS is a related, albeit distinct, dimension of spirituality. It is strongly associated with intellect, and is also predictive of social relationship and environmental health. While the association of horizontal dimension of FMS in relation to other variables is not as impressive as that of vertical dimension, the differential pattern of relationships of the two dimensions with other variables supports what researchers (Goodenought, 2001; Kalton, 2000; King, 2003; Lerner, Alberts, Anderson, & Dowling, 2006) argued about: A balanced and mature religious life has to include, in addition to the vertical dimension, a horizontal dimension of spirituality, which transcends the self to the concern of the humanity. Thus the construct the FMS measures is richer than intrinsic religiosity.

The FMS adds some explanatory power to a model predicting quality of life, beyond that contributed by the Big Five (H6). Although it may be a judgment call regarding the small effect size, this finding among the Chinese is consistent with previous findings (Ciarrocchi et al., 2008; Dy-Liacco et al., 2009; Piedmont & Nelson, 2001) that the spirituality variable is unique from the Big five. The incremental validity corroborates Pargament's (2002) and Piedmont's (2007) claim that spirituality has in people's life a unique role irreducible to other variables such as personality. For one thing, the ΔR^2 shows that the FMS improves the prediction model. For another, the fairly high value of β (of the vertical dimension and in the psychological health in particular) shows that the explanatory power of the faith maturity construct is comparable to that of other personality variables for certain outcomes.

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Table 1. Descriptive statistics of Faith Maturity Scale

FMS scale	Women(N=1397)		Men(N=646)		t-value	α
	M	SD	M	SD		
Vertical	5.09	1.11	4.90	1.18	-3.63***	.89
Horizontal	3.62	1.07	3.91	1.16	5.73***	.77
Total score	4.50	0.95	4.50	1.02	0.04	.87

*** *p* < .001

Table 2: Intercorrelations among the Faith Maturity Scale, the Big Five Personality Dimension, Social Axioms, and Quality of Life, with Means and Standard Deviations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. FMS_vertical	.89																			
2. FMS_horizontal	.47	.77																		
3. FMS-total	.92	.78	.87																	
4. Extroversion	.28	.21	.29	.86																
5. Conscientiousness	.20	.12	.19	.13	.76															
6. Agreeableness	.34	.32	.39	.35	.27	.77														
7. Intellect	.20	.34	.30	.30	.16	.28	.79													
8. Emotional stability	.29	.14	.27	.29	.25	.24	.13	.89												
9. Social cynicism	-.13	.01[a]	-.08	-.20	-.14	-.18	-.05[b]	-.21	.60											
10. Reward for application	.15	.14	.16	.10	.11	.18	.09	.03[a]	-.04[a]	.72										
11. Social complexity	.14	.11	.15	.00[a]	-.00[a]	.11	.17	-.08	.15	.31	.61									
12. Fate control	-.25	-.13	-.24	-.09	-.10	-.12	-.03[a]	-.26	.28	-.02[a]	.08	.70								
13. Religiosity	.48	.23	.44	.12	.11	.25	.09	.19	-.10	.26	.28	-.18	.76							
14. Physical health	.24	.16	.24	.27	.39	.24	.20	.48	-.16	.11	.02[a]	-.15	.11	.67						
15. Psychological health	.46	.28	.45	.43	.37	.40	.28	.63	-.25	.15	.06	-.26	.22	.62	.82					
16. Social relationship	.31	.17	.30	.39	.19	.40	.16	.34	-.18	.15	.07	-.13	.15	.36	.54	.58				

Table 2. *Continued*

17. Environmental	.23	.11	.21	.19	.23	.26	.15	.36	-.17	.14	.10	-.14	.19	.50	.51	.34	.69			
18. Overall QOL	.32	.21	.32	.26	.26	.25	.15	.37	-.17	.10	.03ª	-.16	.17	.43	.57	.34	.43	--		
19. Overall health	.17	.09	.16	.14	.15	.13	.06	.31	-.09	.06	.02ª	-.06	.09	.48	.40	.23	.33	.34	--	
20. Attribution style (N=1071)ᶜ	.22	.16	.23	.27	.30	.18	.20	.32	-.18	.17	.02ª	-.18	.11	.35	.40	.27	.24	.26	.18	.67
Mean	5.03	3.71	4.50	3.14	3.40	3.75	3.31	3.09	2.86	3.97	4.24	2.87	4.18	14.42	13.58	13.79	13.71	14.24	12.08	4.30
SD	1.14	1.10	.97	.66	.58	.49	.55	.76	.59	.54	.42	.71	.55	2.00	2.27	2.65	2.04	3.05	3.32	1.62

Note: Ns=1932-2051. Except as noted, all correlations are significant at p<.01. Cronbach alphas are presented on the diagonal.

a. n.s.

b. p < .05.

c. Because of attrition, the sample size for attribution style is 1070

Table 3. Differences in FMS Scores Between Individuals Reporting Religious Practices and Those Who Did Not

(n = 2,051)		Faith maturity scale		
		Vertical	Horizontal	Total
Have read two Christian book or above during the past year	No (n = 807)	4.56	3.40	4.09
	Yes (n = 1,244)	5.34	3.91	4.76
	t	-15.78***	-10.62***	-16.18***
	r	.33***	.23**	.34**
Have talked about one's faith to two person or above during the past year	No (n = 1,014)	4.52	3.45	4.09
	Yes (n = 1,037)	5.53	3.96	4.90
	t	-22.48***	-10.77***	-20.84***
	r	.45***	.23***	.42***
Have attended activities related to the mission work during the past year	No (n = 924)	4.68	3.50	4.21
	Yes (n = 1,127)	5.31	3.88	4.74
	t	-13.12***	-7.88***	-12.98***
	r	.28***	.17***	.28***
Have given offering to the mission work during the past year	No (n = 1,237)	4.77	3.49	4.26
	Yes (n = 814)	5.43	4.04	4.87
	t	-13.98***	-11.38***	-15.13***
	r	.29***	.24***	.31***
Have attended church fellowship two time or above during the past month	No (n = 902)	4.72	3.60	4.27
	Yes (n = 1,149)	5.27	3.80	4.68
	t	-11.15***	-4.16***	-9.79***
	r	.24***	.09***	.21***

Table 3. *Continued*

Have attended church groups two time or above during the past month	No (*n* = 958)	4.64	3.56	4.21
	Yes (*n* = 1,093)	5.37	3.84	4.76
	t	-15.00***	-5.79***	-13.24***
	r	.32***	.13***	.28***
Have attended church activities (such as bible school, baptism course, training) two time or above during the past month	No (*n* = 1,292)	4.79	3.61	4.32
	Yes (*n* = 759)	5.44	3.88	4.81
	t	-13.56***	-5.31***	-11.76***
	r	.28***	.12***	.25***
Have served in church activities during the past month	No (*n* =981)	4.63	3.52	4.18
	Yes (*n* = 1,070)	5.40	3.88	4.79
	t	-16.05***	-7.61***	-14.79***
	r	.34***	.17***	.31***

*** $p < .001$

Table 4. Correlation between Faith Maturity Scale and Religious Practices (*n* = 1,978)

	FMS Vertical	FMS Horizontal	FMS Total
Reading bible and prayer alone	.46***	.19***	.41***
Watching Christian broadcast	.19***	.14***	.20***

*** *p* < .001

Table 5. Incremental Validity of the Faith Maturity Scale over IPIP

Dependent variables	Demographics R^2	IPIP $\varDelta R^2$	FMS $\varDelta R^2$	β(vertical)	β(horizontal)
Religious variables					
Religious practice (n = 1,112)	.02**	.07***	.18***	.44***	.12***
Reading bible and prayer alone (n = 1,108)	.03***	.06***	.14***	.45***	-.04
Watching Christian broadcast (n = 1,106)	.06***	.02**	.03***	.17***	.040
Quality of life variables					
Physical health (n = 1,080)	.04***	.32***	.00		
Psychological health-HK (n = 1,073)	.06***	.51***	.04***	.21***	.03
Social relationship (n= 1,072)	.01*	.28***	.02***	.16***	-.08**
Environmental (n = 1,074)	.06***	.18***	.01*	.07*	-.07*
Overall QOL (n = 1,084)	.06***	.16***	.03***	.18***	.05
Overall health (n = 1,082)	.01*	.12***	.01*	.06	.04

*** p < .001; ** p < .01; * p < .05

Footnotes

[i] The Chinese is a diverse population. This study will focus on the people located in Hong Kong and Macao area.

Appendix

Faith Maturity Scale (Short form)
1.	**I** help others with their religious questions and struggles.*
2.	I seek opportunities to help me spiritually
3.	I feel a sense of responsibility for reducing pain and suffering in the world.*
4.	I give significant portions of time and money to help other people.*
5.	**I** feel God's presence in my relationships with other people.
6.	**I** feel my life is filled with meaning and purpose.
7.	I care a great deal about reducing poverty in my country and throughout the world.*
8.	I apply my faith to political and social issues.*
9.	The things I do reflect a commitment to Jesus Christ.
10.	**I** talk with other people about my faith.
11.	I have a real sense that God is guiding me.
12.	I am spiritually moved by the beauty of God's creation.

* Items for horizontal dimension, as suggested in Ji (2004).