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The Chinese translation of the Francis Scale of Attitude toward Christianity: factor structure,  
internal consistency reliability and construct validity among Protestant Christians in  
Shanghai.

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**Abstract**

A sample of 131 Chinese Christians attending a Protestant church in Shanghai completed the Chinese translation of Francis Scale of Attitude toward Christianity developed originally by Francis, Lewis, and Ng (2002) in Hong Kong. The data support the factor structure, the internal consistency reliability, and construct validity of this instrument and commend it for further use in studies conducted among Christians in China.

*Keywords:* Psychology, religion, attitude, measurement, China

### **Introduction**

As part of an expanding international programme concerned with establishing the correlates, consequences and antecedents of individual differences in the affective or attitudinal domain of religion, Francis, Lewis, and Ng (2002) developed and tested a Chinese translation of the Francis Scale of Attitude toward Christianity. The original English language version of this instrument, introduced in the late 1970s by Francis (1978a, 1978b) has become widely available in a number of languages, including: Arabic (Munayer, 2000), Czech (Francis, Quesnell, & Lewis, in press), Dutch (Francis & Hermans, 2000), French (Lewis & Francis, 2003), German (Francis & Kwiran, 1999), Greek (Youtika, Joseph, & Diduca, 1999), Norwegian (Francis & Enger, 2002), Portugese (Ferreria & Neto, 2002), Romanian (Francis, Ispas, Robbins, Ilie, & Iliescu, 2009), Slovenian (Flere, Klanjek, Francis, & Robbins, 2008), Spanish (Campo-Arias, Oviedo, Dtaz, & Cogollo, 2006), Swedish (Eek, 2001), and Welsh (Evans & Francis, 1996). Comparable instruments have also been developed to access the affective or attitudinal dimension of religion in Hindu (Francis, Santosh, Robbins, & Vij, 2008), Islamic (Sahin & Francis, 2002), and Jewish (Francis & Katz, 2007) contexts. The rationale underpinning this international and interfaith programme of research has been summarised by Francis (2009), together with a discussion of the key findings emerging from the empirical evidence.

The Chinese translation of the Francis Scale of Attitude toward Christianity was tested by Francis, Lewis, and Ng (2002) among a sample of 598 Chinese adolescents between the ages of 13 and 18 years attending secondary schools in Hong Kong. Of this sample, 43% were male and 57% were female. Four fifths of the respondents (79%) described themselves as belonging to no religious group, while the remaining 21% identified a Christian denomination. As in the English language form, the Chinese translation of the Francis Scale of Attitude toward Christianity comprises 24 items concerned with affective responses

toward God, Jesus, prayer, bible, and church. Each item is assessed on a five-point Likert scale: agree strongly, agree, not certain, disagree, and disagree strongly.

Building on this foundational study conducted in Hong Kong, the aim of the present project is to examine the psychometric properties of the Chinese translation of the Francis Scale of Attitude toward Christianity among Christians in mainland China.

## **Method**

### **Instrument**

Participants were asked to complete the Chinese translation of the *Francis Scale of Attitude toward Christianity* (Francis, Lewis, & Ng, 2002). The scale consists of 24 items concerned with affective response toward God, Jesus, bible, prayer, and church. The items are assessed on a five-point Likert scale ranging from 5 (*agree strongly*) to 1 (*disagree strongly*). Eight questions are reversed for scoring purposes, such that, when summed, higher scores indicate more positive attitudes.

Participants were also asked to indicate how often they prayed and attended church on a six-point scale: *never or almost never, rarely (a few times per year), monthly but not every week, weekly but not every day, once a day, and more than once a day*.

### **Participants and procedure**

The sample comprised 131 Chinese Protestant Christians, attending the East Shanghai Church in the Yangpu District of Shanghai, China. Participants were asked to complete the questionnaire by the church minister at a break during the Friday evening service. There were 23 non-respondents (15% non-response rate). Age ranged from 16 to 62 years ( $M = 32.85$ ,  $SD = 12.14$ ), and 68% of the sample were female. The sample's modal frequency of prayer was once a day (32% of the total), while the modal frequency of church attendance was weekly but not every day (66% of the total). These patterns were not statistically different for females and males.

### **Data analysis**

The data were analysed by the SPSS statistical package, using the frequency, reliability, factor, and correlation routines.

### **Results**

In the first column, table one presents the item rest-of-test correlation coefficients in respect of all 24 items, together with the alpha coefficient. In the second column, table one presents the loadings on the first factor of the unrotated solution proposed by principal component analysis, together with the percentage of variance explained. Both sets of statistics support the conclusion that the scale is characterised by homogeneity, unidimensionality and internal consistency reliability within the sample. The alpha coefficient is established as 0.96, while the proportion of variance accounted for by the first factor is established as 55.5%.

-insert table 1 about here-

Steps towards assessing the construct validity of this scale can be made by assessing the extent to which certain predictions about the theoretical variations in attitude scores are reflected empirically (Orton, 1987). While attitudes alone may not be simple or direct predictors of behaviour (Ajzen, 1988), substantial evidence suggests a fairly close relationship between attitude towards religion and religious behaviour, as demonstrated by repeated studies using the Francis Scale of Attitude toward Christianity among children and adolescents (Francis, 1989). In the present study attitude scores correlated with church attendance ( $r = .53, p < .001$ ) and with personal prayer ( $r = .65, p < .001$ ). These statistics support the construct validity of the attitude scale within the sample.

### **Conclusion**

The present study has explored the scale properties of the Chinese translation of the Francis Scale of Attitude toward Christianity among a sample of 131 Chinese Christians

attending a Protestant church in Shanghai. The data support the unidimensionality, internal consistency reliability, and construct validity of the Chinese translation of this instrument. The scale can, therefore, be recommended for further use among Christians in China and should lead to valuable cross-cultural comparisons in an empirical psychology of religion.

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Table 1

*Item rest of test correlations and factor loadings*

Scale item	r	factor loading
I find it boring to listen to the bible*	.41	.43
I know that Jesus helps me	.84	.88
Saying my prayers helps me a lot	.83	.85
The church is very important to me	.75	.78
I think going to church is a waste of my time*	.42	.42
I want to love Jesus	.67	.71
I think church services are boring*	.40	.40
I think people who pray are stupid*	.65	.65
God helps me to lead a better life	.73	.77
I like to learn about God very much	.81	.85
God means a lot to me	.89	.92
I believe that God helps people	.85	.89
Prayer helps me a lot	.86	.89
I know that Jesus is very close to me	.78	.82
I think praying is a good thing	.60	.65
I think the bible is out of date*	.46	.45
I believe that God listens to prayers	.82	.86
Jesus doesn't mean anything to me*	.73	.73
God is very real to me	.85	.88
I think saying prayers does no good*	.43	.45
The idea of God means much to me	.76	.80
I believe that Jesus still helps people	.79	.83
I know that God helps me	.83	.87
I find it hard to believe in God*	.63	.65
<i>alpha</i> coefficient/% of variance	.96	55.5%

**Note** \* these negative items were reverse scored.

N= 131