Pilot Test of SF-6D Valuation Survey on Chinese Adults in Hong Kong

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Objective: This paper reports on the results of a pilot valuation survey undertaken in Hong Kong (HK) to assess the feasibility, acceptability and validity of using the SF-6D to derive a utility-based algorithm for estimating a single index measure from the SF-36 for use in economic evaluation.
Method: The SF-6D, a six dimensional health state classification based on a selection of items from the SF-36, was translated into Chinese. A sample of 50 states defined by the SF-6D (out of 18,000) were valued by an age-sex stratified sample of 126 Chinese adults randomly selected from a family practice population in HK. The standard gamble (SG) method was used to elicit values for eight SF-6D health states per respondent. Econometric models were estimated to predict health state values for all states generated by the SF-6D and compared to the results of a similar survey undertaken in the UK. Econometric models had to deal with the hierarchical nature of the data and skewness.
Results: All 126 respondents completed the interviews with 3% finding the process very difficult and 21% felt bored. 907 SG valuations (90% out of 1008 observations) were suitable for analysis. Health state values range from –0.75 to 1.0. The basic mean health state model (with the constant forced though unity) achieved an excellent fit with a mean absolute error of 0.054. There was only one inconsistency between model coefficients for the dimension levels. The performance of the HK model compared very favourably with the UK survey and produced similar coefficients for all dimensions except physical functioning that were somewhat larger.
Conclusion: This pilot study showed that it was feasible, acceptable and valid to apply SF-6D survey methodology to a Chinese adult sample in Hong Kong.

Table 1: Health state values

State	Mean	N	SD		UK Mean	N	SD
111621	.5264063	16	.28821428				
113411	.7636765	17	.30580276				
115653	.5987500	17	.30147878				
121212	.8480469	16	.23562106				
122233	.7239338	17	.27763649				
122425	.5353125	16	.31822375				
124125	.6800000	17	.27896747				
131542	.5571094	16	.29907347				
132524	.6859559	17	.31837740				
133132	.8182500	15	.23258485				
135312	.6364844	16	.26115737				
142154	.6632353	17	.32026724				
144341	.5757500	15	.22548846				
211111	.9511029	17	.19557202				
212145	.5577344	16	.29843209				
213323	.7519853	17	.27595822				
221452	.6466912	17	.29377558				
224612	.5147500	15	.21962031				
232111	.7219531	16	.27640473				
235224	.6848162	17	.26826189				
241531	.7625000	16	.24747517				
312332	.7547794	17	.27352096				
315515	.4931250	16	.26787357				
321122	.7697794	17	.26932578				
323644	.5525735	17	.34145898				
332411	.7767917	15	.24650219				
334251	.5425781	16	.30739445				
341123	.6733594	16	.22667374				
412152	.7353676	17	.25749270				
414522	.6275000	17	.28420531				
421314	.6340625	16	.18641994				
425131	.6296094	16	.27767702				
431443	.5856985	17	.34849662				
432621	.5918750	14	.32314588				
443215	.5760833	15	.22909511				
511114	.6086458	18	.36760367				
512242	.5307031	16	.29561446				
522321	.6086719	16	.25416918				
523551	.5542500	15	.37587927				
531635	.4612500	15	.22514926				
534113	.6181618	17	.28724381				
545422	.5955882	17	.37378321				
611221	.5315809	17	.36160194				
614434	.4864167	15	.39980823				
622513	.5631618	17	.35196994				

625141	.3375000	15	.24341323				
631355	.5263235	17	.30488102				
633122	.5682031	16	.28411558				
642612	.4946875	16	.28224675				
645655	.0935268	112	.41353434				

Table 2: Main Effects Models for HK data[a]

				Constant forced through unity	
Model	(1)	(2)	(3)	(5)	(7)
	OLS	**RE**	**Mean**	**RE**	**Mean**
C	**0.806**		**0.796**		1.000
PF2	0.010		0.011		-0.060
PF3	-0.021		-0.020		-0.073
PF4	-0.048		-0.046		**-0.099**
PF5	**-0.106**		**-0.104**		**-0.157**
PF6	**-0.198**		**-0.184**		**-0.232**
RL2	-0.021		-0.022		**-0.065**
RL3	-0.010		-0.009		-0.053
RL4	-0.043		-0.029		-0.067
SF2	-0.010		-0.009		-0.052
SF3	0.007		0.007		-0.036
SF4	**-0.069**		**-0.070**		**-0.113**
SF5	**-0.105**		**-0.093**		**-0.131**
PAIN2	-0.033		-0.032		-0.075
PAIN3	-0.025		-0.025		-0.068
PAIN4	-0.040		-0.039		**-0.082**
PAIN5	**-0.060**		-0.060		**-0.103**
PAIN6	**-0.158**		**-0.145**		**-0.183**
MH2	-0.025		-0.026		**-0.069**
MH3	0.005		0.006		-0.037
MH4	**-0.128**		**-0.128**		**-0.172**
MH5	**-0.072**		-0.060		**-0.098**
VIT2	0.018		0.017		-0.026
VIT3	0.012		0.012		-0.031
VIT4	-0.017		-0.017		-0.060
VIT5	**-0.111**		**-0.099**		**-0.137**
n	907		50		50
Adj R2	0.274		0.662		0.938
Inconsistencies	1		0		1
MAE	0.044		0.044		0.045
No > |0.05|	20		19		20
No > |0.10|	4		3		8
t (mean=0)	0.003		0.003		0.005
JBPRED					
LB					

Estimates in bold are significant at $t_{0.1}$.

[a] Model numbering comes from Brazier et al (2002)
[b] Mean zero by definition.
[c] No R^2 statistics, GEE estimation.

Table 3: Main effects models estimated from UK data

			Constant forced through unity	
Model	**(3)**	**(2)**	**(5)**	**(6)**
	Mean	**RE**	**Mean**	**RE**
C	**0.827**	**0.833**	**1.000**	**1.000**
PF2	-0.014	-0.021	**-0.060**	**-0.058**
PF3	0.008	-0.026	-0.020	**-0.051**
PF4	-0.027	**-0.065**	**-0.060**	**-0.088**
PF5	**-0.043**	**-0.044**	**-0.063**	**-0.061**
PF6	**-0.096**	**-0.135**	**-0.131**	**-0.160**
RL2	-0.019	**-0.027**	**-0.057**	**-0.056**
RL3	**-0.043**	**-0.055**	**-0.068**	**-0.076**
RL4	**-0.036**	**-0.055**	**-0.066**	**-0.078**
SF2	-0.027	**-0.034**	**-0.071**	**-0.066**
SF3	**-0.049**	-0.022	**-0.084**	**-0.048**
SF4	**-0.057**	**-0.041**	**-0.093**	**-0.066**
SF5	**-0.073**	**-0.089**	**-0.105**	**-0.109**
PAIN2	0.008	-0.001	**-0.048**	**-0.042**
PAIN3	-0.001	-0.018	-0.034	**-0.046**
PAIN4	-0.032	**-0.026**	**-0.070**	**-0.055**
PAIN5	**-0.062**	**-0.068**	**-0.107**	**-0.103**
PAIN6	**-0.149**	**-0.155**	**-0.181**	**-0.178**
MH2	-0.026	-0.019	**-0.057**	**-0.043**
MH3	-0.022	**-0.032**	**-0.051**	**-0.055**
MH4	**-0.095**	**-0.093**	**-0.121**	**-0.115**
MH5	**-0.114**	**-0.106**	**-0.140**	**-0.125**
VIT2	-0.044	-0.006	**-0.094**	**-0.040**
VIT3	-0.037	-0.008	**-0.069**	**-0.030**
VIT4	-0.029	-0.011	**-0.069**	**-0.040**
VIT5	**-0.076**	**-0.068**	**-0.106**	**-0.087**
n	249	3518	249	3518
Adj R^2	0.583	0.200	0.508	[b]
Inconsistencies	2	2	5	4
MAE	0.071	0.073	0.074	0.078
No > |0.05|	117	122	118	122
No > |0.10|	52	53	52	59
t (mean=0)	[a]	0.250	[a]	**-6.717**
JBPRED	0.737	1.178	0.681	2.461
LB	**520.71**	**386.63**	**169.57**	**185.3**

All models are estimated with White's heteroscedasticity consistent standard errors.
Estimates in bold are significant at $t_{0.1}$.
[a] Mean zero by definition.
[b] No R^2 statistics, GEE estimation.