Initial Validation of a Measurement Scale assessing Students' Orientation towards Corporate Social Responsibility in a Chinese Society

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Abstract

The development of students' social ethicality is often found as a learning outcome of General Education (GE) (Association of American Colleges & Universities, n.d.; Wells, 2016), this makes corporate social responsibilities (CSR) a valid GE topic. In fact most local universities have a business ethics (BE) and/or CSR component in their business programmes, usually in the form of a discipline specific or a GE course. In order to assess the effectiveness of GE endeavours in developing students' CSR orientation (CSRO), a reliable and valid measurement scale is needed. Based on the underlying CSRO dimensions of Economic, Legal, Ethical and Discretionary suggested by A.B. Carroll (1979, 1991), Aupperle (1982), Aupperle, Carroll and Hatfield (1983) validated a forced-choice measurement scale (E-CSRO) in English that assessed individual's CSRO. This study translated E-CSRO into Chinese (C-CSRO) and initially tested it with N=793 Chinese sub-degree business students in Hong Kong High items reliabilities were attained; Exploratory Factor Analysis supported clear factor loading that corresponded with A.B. Carroll's (1979, 1991) CSRO constructs; Confirmatory Factor Analysis (CFA) indicated reasonably good model fit of C-CSRO. The initial results appeared to support C-CSRO's

psychometric properties and validity was convergent to those of E-CSRO when applied to a Chinese student sample. C-CSRO has the potential to facilitate study of CSRO in the Chinese community where English is not the first language and also can assist cross-cultural comparison in this area.

Key words: assessment, business students, corporate social responsibility, orientation, measurement scale

Background

The need to bolster sense of social responsibilities of business students is beyond contention. Corporate social responsibility (CSR) is a topic of applied ethics within a commercial context (Van Liedekerke, & Dubbink, 2008). Its importance in the curriculum was confirmed by Deans and faculties of business schools (Christensen, Peirce, Hartman, Hoffman, & Carrier, 2007; Escudero, 2009; Evans, & Weiss, 2008) and accrediting bodies (Association to Advance Collegiate Schools of Business, 2013). Yet business schools are left with have much latitude as to where and how to position CSR in the curriculum map. Most local universities claimed that they have the mission to nurture business students' social ethicality. The most common way that BE/CSR would appear in the curriculum would be: embedded within other business courses, as a standalone discipline specific course or as a General Education (GE) course.

Before the effectiveness of GE endeavours in developing students' CSRO can be assessed, there is a prior need to obtain a valid measurement instrument that can capture and gauge one's CSRO. Two studies were conducted at a local University in relation to the assessment of students'

CSRO. Simmons, Shafer and Snell (2009) used a BE course as an intervention; Whitla (2011) integrated an ethics component into an International Business course. Both studies used the Perceived Role of Ethics and Social Responsibility PRESOR (Singhapakdi, Vitell, Rallapalli & Kraft, 1996) to assess pre/posttest CSRO scores of the students. PRESOR applies a nine-point Likert scale from "strongly disagree to "strongly agree on each of the 13 item statements. It broadly measures a person's CSRO in relation to a firm's effectiveness as reflected from the stockholder's (supposedly less CSR sensitive) and stakeholder's (supposedly more CSR sensitive) views.

A. B. Carroll (1979, 1991) proposed the CSR Pyramid, a conceptual framework that defined a person's CSRO has four dimensions including Economic (produce goods and services at a profit), and three non-economic dimensions of Legal (law-abiding), Ethical (behave in socially commendable manner that are beyond codified legal requirement) and Discretionary or Philanthropic (engage in charitable activities voluntarily). And CSRO of a firm is really the CSRO of its people-in-charge who operate within the interplay of these four CSR dimensions (Wood, 1991). Based on A. B. Carroll's (1979, 1991) conceptual constructs, Aupperle (1982) initiated another measurement scale (the E-CSRO) that assessed CSRO which was later on enhanced by Aupperle, Hatfield and A. B. Carroll (1983).

Different from PRESOR, E-CSRO is an ipsative or forced-choice scale. The term "ipsative" was coined by Cattell (1944) and its Latin root "*ipse"* means "he/himself". When an ipsative scale measures attitude of a person, it depends on and relative to scores of other attributes of the same person who is under assessment (Brown & Maydeu-Olivares, 2011). Such a kind of scale

requires juxtaposing and ranking the item variables concerned by the respondent. For a pure ipsative scale a person's scores for all item variables under the same question should always sum up to the same constant (Clemans, 1966; Radcliffe, 1963), whereas for E-CSRO the sum of scores for all item variables contained in each question may range from 0 to 10, as such it is regarded as partially ipsative only (Hicks, 1970).

Though ipsative scale is not without its criticism (Anastasi, 1988, Johnson, Wood & Blinkhorn, 1988), there are certainly merits in using an ipsative scale to assess CSRO (Burton, Farh & Hegarty, 2000). Fundamentally it can better answer for specific research purposes especially when comparative scoring is needed, and normative scale does not have this capability to explore intra-personal differences (Broverman, 1962). In reality, businesses often operate under a forced-choice situation, for businesses only have limited resources and business executives are constantly required to allocate limited resources in accomplishing competing CSR objectives. The forced-choice nature of E-CSRO acknowledges the possibilities for a person to have overlapping or even conflicting CSRO and allows the expression of such a state of mind by evoking personal judgments on the relative importance of the four CSR dimensions of Economic, Legal, Ethical and Discretionary. So by actually mimicking the business reality of scarcity in resources, E-CSRO accommodates competing CSR objectives and the possibility of ethical dilemmas. Besides, a forced choice design can help eliminate some undesirable response such as social desirability bias (Hofstede, 1980) and uniform bias due to acquiescence (Cheung & Chan, 2002). So far E-CSRO was applied and tested in a number of previous studies (Aupperle, Simmons III & Acar, 1990; Burton, & Hegarty, 1999; Burton Farh & Hegarty, 2000; Ibrahim & Angelidis, 1993; Maignan & Ferrell, 2000; O'Neill, Saunders & McCarthy, 1989; Pinkston & A.

B. Carroll, 1996; Smith, Wokutch, Harrington & Dennis, 2001; Strong & Meyer, 1992), and was regarded as robust, highly reliable and psychometrically sound (Ibrahim, Angelidis, & Howard, 2006).

Even though the vast majority of people in Hong Kong are being brought up in a bilingual environment, English is still their second language and Chinese is used predominantly in their daily living. Hence, it is risky to assume that a measurement instrument in English can be accurately comprehended. The aim of this study is to produce a reliable and valid measurement instrument to assess CSRO that can facilitate other related research in the Chinese community, especially where English is not their first language. To this end the objectives of this study are to:

- translate the measurement scale E-CSRO from English into Chinese as C-CSRO;
- investigate C-CSRO in a Chinese community on its underlying constructs and psychometric properties;
- initially examine the equivalence of C-CSRO to its source instrument.

Method

E-CSRO was first translated into Chinese, and then administered to some year 1 and 2 students who had enrolled with an Associate in Business program offered by the Hong Kong Community College. Data collected were tested on its reliability and correlations; subjected to Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) so as to investigate its underlying factor structure and replicability of the measurement model in the sample data.

Translation method

The E-CSRO measurement scale has 15 questions, under each question there are four statements, and each statement corresponds to one of A. B. Carroll's (1979) four CSR dimensions of Economic, Legal, Ethical and Discretionary. So in fact E-CSRO can be regarded as having 15 question sets. Up to a maximum of 10 points in total can be allocated to the four statements contained under the same question set. Below are the instruction and a sample question set taken from E-CSRO:

Based on the relative importance and application to your firm, allocate up to, but not more than, 10 points to each set of four statements. For example, you might allocate points to a set of statements as follows:

A = 4	A = 1	A = 0
B = 3	B = 2	B = 4
C = 2 or	C = 0 or	C = 3
D = 1	D = 7	D = 0
Total = 10 points	Total = 10 points	Total = 7 points

1. It is important to perform in a manner consistent with:

(Economic) A. expectations of maximizing earnings per share

(Legal) B. expectations of government and the law

(Discretionary) C. the philanthropic and charitable expectations of society

(Ethical) D. expectations of societal mores and ethical norms

Note. The designated CSRO (in bracket) for each statement A to D is hidden on the actual questionnaire.

The researcher together with an English language teacher who has expertise in applied translation became the reviewers of the whole translation process. They reviewed the content of E-CSRO and agreed that out of the 15 question sets, 13 were relevant to local setting. Also both of them reached the consensus to slightly fine-tune a few words/terms in E-CSRO so as to better align to the Hong Kong context.

Enlightened by some good practices found in the cross-cultural translation literature (Brislin, 1970; J. S. Carroll, Holman, Sergura-Bartholomew, Bird & Busby, 2001; Fouad, Cudeck & Hansen, 1984; Hansen, 1987; Lee, Li, Arai & Puntillo, 2009; Prieto, 1992), a serial method that involved forward and backward translation, and an interactive and committee approach that involved team work among the translators, reviewers and back-translators, weaved through the whole translation process (Barata, Gucciardi, Ahmad & Steward, 2006; Herrera, DelCampo & Ames, 1993; McKay, Breslow, Sangster, Gabbard, Reynolds, Nakamoto & Tarnai, 1996; Ponce, Lavarreda, Yen, Brown, DiSogra & Satter, 2004).

E-CSRO was first translated independently by Translator A who was a business professional and ex-teacher in business course at tertiary level with two Master Degrees, one in law and the other in finance; Translator B who was a seasoned copywriter for advertising agencies with a Bachelor Degree in Journalism. They critiqued on each other's work and agreed on one version of C-CSRO. After that the output was reviewed by Reviewer A and B to arrive at one agreed version of C-CSRO which was to be back-translated into English. To moderate the potential risk that translation professionals may improve inadequately translated documents by undue inferences when back-translating (J. S. Carroll et al., 2001; Herrera et al. 1993, McKay et al., 1996), non-

professional but competent bilinguals were engaged as back-translators (J. S. Carroll et. al., 2001; Herrera et al., 1993; Hyräks, Appelqvist-Schmidlechner & Paunonen-Ilmonen, 2003). Both back-translators have solid exposure and understanding to the socio-cultural specificities of the target population. Figure 1. depicted the whole translation process of C-CSRO. At any one step, more than one bilingual participated as translators, back-translators or reviewers so as to attain optimal output.

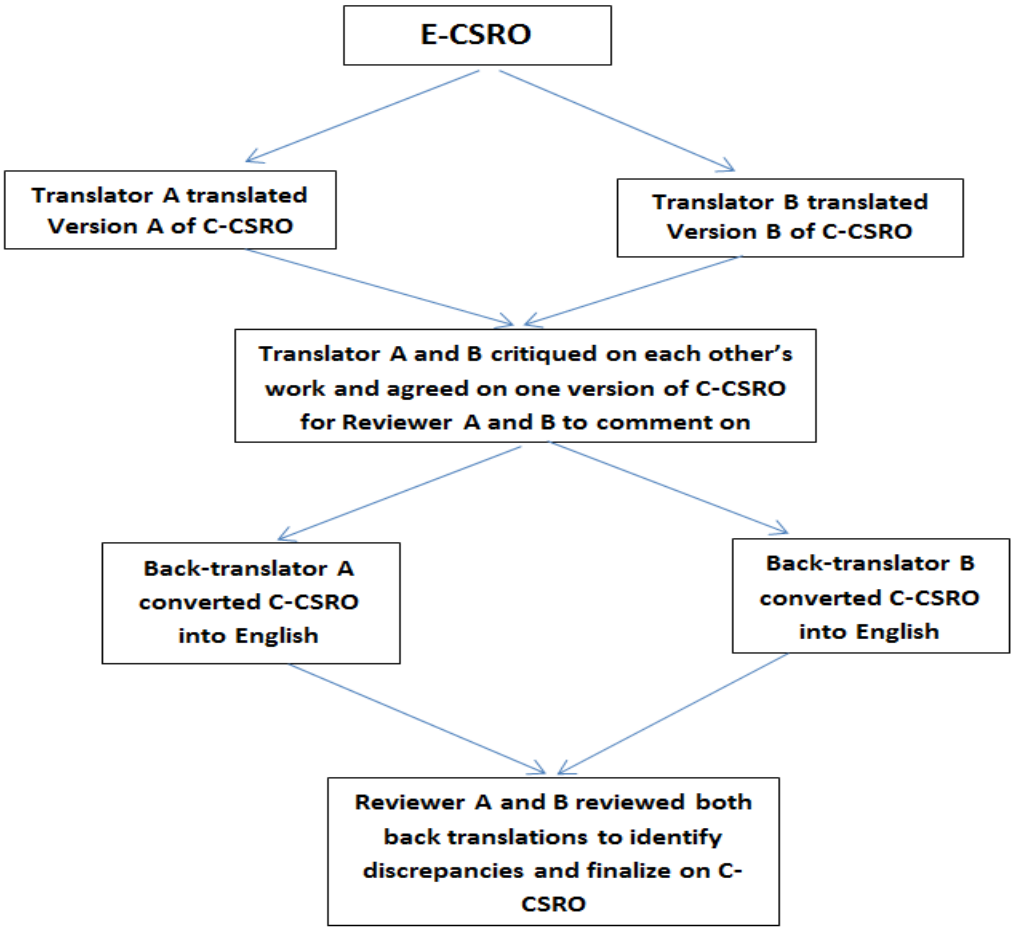

Figure 1. Translation process from E-CSRO to C-CSRO.

To further boost content clarity and validity, C-CSRO was subjected to a cognitive test via focus group discussion with N=8 Associate Degree students who majored in corporate communications and should be able to examine the C-CSRO with higher linguistic sensitivity. Students were specially asked if "they can fully understand the instruction of the questionnaire", "what does each item mean to them", "can they fully understand the meaning". During the course, some small yet constructive suggestions were made to further refine a few wordings of C-CSRO. Finally a pilot survey with N=133 was conducted as a pre-run of the actual data collection procedure.

Statistical Method

Data were tested using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). SPSS and AMOS Version 21(Arbuckle, 2012) were used to conduct the test. C-CSRO came from a measurement scale with a well-defined factor structure, and the purpose of this study was to confirm whether the underlying dimensions of the item variables aligned with the factor structure of E-CSRO instead of exploring into some unknown collinearities among a range of new variables. So Principal Component Analysis (PCA) that has the advantage of generating slightly higher loadings (Velicer, Peacock & Jackson, 1982) and help identify factor structure more distinctively was used for data extraction. Varimax rotation method could maximize variances making the more dominant factors structure and its discriminant validity stand out and providing more interpretable results (Worthington & Whittaker, 2006), hence was opted as the data rotation method. For CFA, Maximum Likelihood (Bollen, 1989) was used as the estimator procedure.

Results

Descriptive Statistics

793 valid responses were collected and Kaiswer-Mayer-Olkin (KMO) tests on the C-CSRO data was .709 while KMO exceeding .6 is the recommended value (Kaiser, 1974). Bartlett Test of Sphericity results were: χ^2= 24049.681, *df* = 1326 and p < .001 supporting data adequacy of C-CSRO for factor analysis (Barlett, 1954). Table 1. showed mean scores and standard deviation of the four C-CSRO. In terms of ranking Economic was regarded as the most important responsibility followed by Legal, Ethical and then Discretionary.

Table 1.

Mean and Standard Deviation

	Mean	**Std. Deviation**
Economic	2.755	1.182
Legal	2.449	.665
Ethical	2.420	.713
Discretionary	1.651	.647

Note. Valid N(listwise)=793

Cronbach alphas of C-CSRO demonstrated high internal consistencies with Economic at .921, Legal .833, Ethical .805, and Discretionary .849 supporting clear item homogeneity; and Flaherty et al. (1988) purported that in situation to test a modified instrument, an alpha coefficient >.60 could be regarded as satisfactory. All items correlations of C-CSRO were significant with p value < .05. The strongest correlations were found between Economic and the

three non-Economic dimensions of Legal, Ethical and Discretionary at -.42, -.592 and-.465 respectively. Pearson r between the non-economic variables was weaker with Legal/Ethical -.102, Ethical/Discretionary .159 and Ethical/Legal .191. These results were in fact in line with Aupperle et al. ‘s (1983) findings when validating E-CSRO. Since Ethical, Legal and Discretionary in a way are overlapping conceptually, they were likely to compete for scores and this could explain why weaker and at times negative correlations were found in the non-economic CSRO.

Exploratory Factor Analysis (EFA)

Scree Plot Test (Figure 2.) shows the first four factors have an Eigenvalue greater than 1 which altogether explained for 41.35 % of the total variance of the item scores. Starting from factor Five there is a clear twist in the slope leading to a kinked curve, implicitly though not conclusively, we can interpret the data has embedded at least four distinctly identifiable factors (Cattell, 1966, Gorsuch,1983).

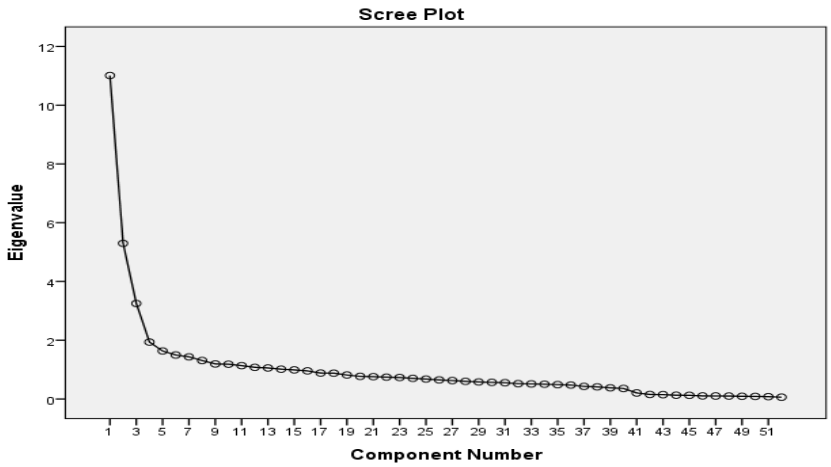

Figure 2. Scree Test of C-CSRO.

Similar to Aupperle et al.'s (1983) practice, correlation coefficient ≥ .4 was used as the cut-off value to extract factors and the more dominating variables were found in the following pattern: 12 variables loaded on component one (Economic), 7 variables on component two (Legal), 6 variables on component three (Discretionary) and 4 variables on component four (Ethical) (Table 2.). Overall a discrete factor loading structure of four predominant factors that aligned with the psychometric properties of the original E-CSRO could be identified.

Table 2.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
13C Economic	.810	-.017	-.102	-.068
10D Economic	.759	-.081	-.092	-.052
12D Economic	.751	-.071	-.075	-.024
11A Economic	.738	-.038	-.029	-.104
9B Economic	.699	-.152	-.152	-.097
6A Economic	.672	-.253	-.255	-.226
7C Economic	.669	-.174	-.212	-.130
5B Economic	.609	-.142	-.185	-.209
4A Economic	.544	-.228	-.317	-.361
2A Economic	.504	-.265	-.300	-.448
3B Economic	.474	-.270	-.222	-.364
1B Legal	-.149	.715	-.113	-.028
3A Legal	-.123	.691	-.144	.173
6B Legal	-.145	.674	-.079	-.067
2C Legal	-.081	.674	-.060	-.051
4B Legal	-.016	.632	-.067	-.009
9C Legal	-.243	.466	-.013	.062
7B Legal	-.253	.437	.013	-.034
1C Discretionary	-.169	-.157	.769	-.015
3C Discretionary	-.132	-.106	.735	.093
2B Discretionary	-.128	-.105	.720	-.073
6D Discretionary	-.219	-.065	.621	.020

4C Discretionary	-.149	-.006	.502	.103
1D Ethical	-.166	-.037	-.042	.794
2D Ethical	-.219	-.061	-.080	.729
4D Ethical	-.114	-.092	.119	.541
1A Economic	.467	-.304	-.382	-.520
6C Ethical	-.308	.092	.032	.426
8C Ethical	.044	.005	.020	.383
12B Legal	-.257	.295	-.040	-.078
10B Legal	-.125	.304	-.061	.108
11C Legal	-.170	.357	.104	.058
9A Discretionary	-.151	.014	.290	.085
10A Discretionary	-.197	-.065	.303	-.014
13D Discretionary	-.238	-.083	.398	-.034
9D Ethical	-.142	.010	.035	.143
11D Ethical	-.275	.017	.002	.226
10C Ethical	-.335	.015	-.004	.074
11B Discretionary	-.242	-.077	.054	.008
12C Discretionary	-.205	-.069	.175	-.004
5A Discretionary	-.084	-.005	.407	.149
5D Ethical	-.248	.066	-.019	.142
8B Discretionary	.018	.013	.196	-.127
8D Economic	.279	-.094	-.083	-.188
3D Ethical	-.068	-.065	-.115	.206
5C Legal	-.214	.302	.034	.053
12A Ethical	-.166	.018	.000	.122
13B Legal	-.091	.173	-.032	-.075
13A Ethical	-.404	.079	-.095	.215
8A Legal	-.038	.250	-.065	.022
7A Ethical	-.096	-.043	.092	.341
7D Discretionary	-.152	.100	.314	.070

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a] a. Rotation converged in 19 iterations.

Confirmatory Factor Analysis (CFA)

The C-CSRO Model drew on A. B. Carroll's (1979) Pyramid of CSR that hypothesized to measure the latent variable of CSRO of a Chinese person (C-CSRO) with the four factors of

Economic (Econ), Legal, Ethical and Discretionary (Disc). Observed variables loaded on the four factors in the following pattern (Figure 3.):

1A, 2A, 3B, 4A, 5B, 6A, 7C, 8D, 9B, 10D, 11A, 12D, 13C load on factor C1Econ

1B, 2C, 3A, 4B, 5C, 6B, 7B, 8A, 9C, 10B, 11C, 12B, 13B load on factor C2Legal

1D, 2D, 3D, 4D, 5D, 6C, 7A, 8C, 9D, 10C, 11D, 12A, 13A load on factor C3Ethical

1C, 2B, 3C, 4C, 5A, 6D, 7D, 8B, 9A, 10A, 11B, 12C, 13D load on factor C4Disc

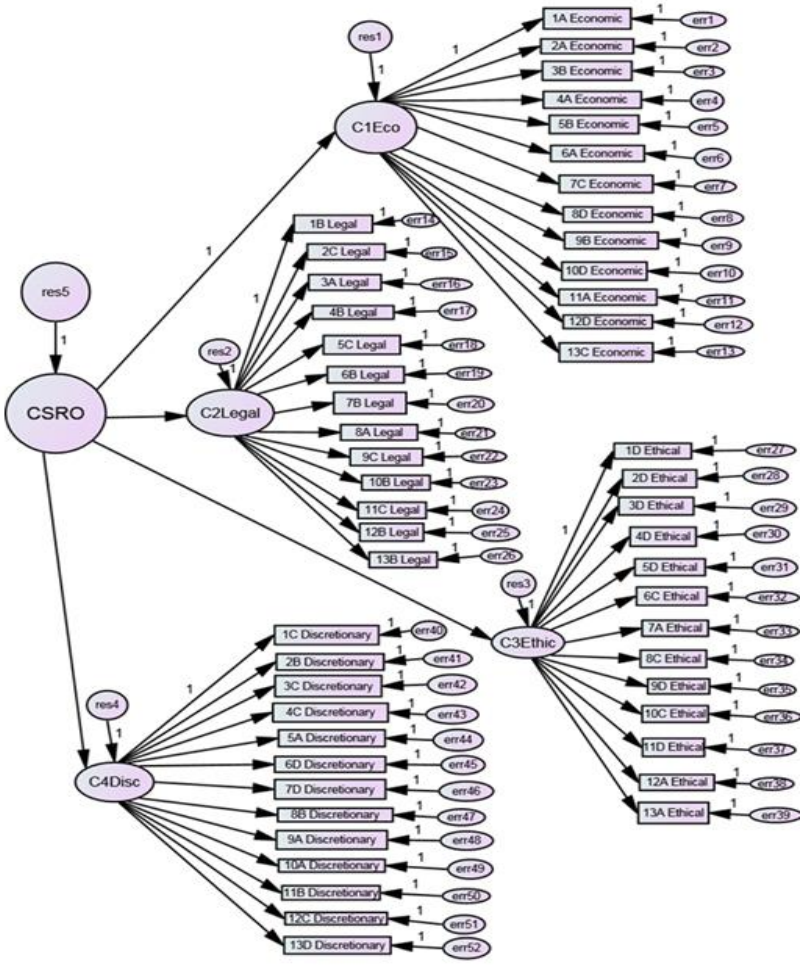

Figure 3. C-CSRO Model in a 52 items scale.

A trial run using Maximum Likelihood (ML) as the estimation procedure returned with some dissatisfactory fit statistics χ^2 = 12454.035; *df* = 1270, *p* = .000.; RMSEA .105 and CFI .519. Altogether the C-CSRO Model has 52 item indicators, with 13 indicators loaded on one factor. According to Burton et al. (2000) when a CFA model that has many indicators per latent factor, it often could not converge and produced a poor fit even if the model itself was relatively precise. To answer for this problem, a parceling strategy was adopted.

To implement parceling, suggestions from Hoyle (2012) were referred. Take Economic as an example. There were 13 indicators or item variables that loaded on one and the only one CSRO of Economic. Based on the mean CSRO scores of these 13 indicators, the one of highest and the lowest mean scores were grouped together to form the first parcel of P1Econ; indicators with the next highest and lowest mean scores were grouped to form the second parcel P2Econ, so on and so forth. In the end four parcels were formed under the labels of P1Econ, P2Econ, P3Econ and P4Econ. Since there were 13 indicators to be allocated to four parcels, the odd one remaining was assigned to any one of the four parcels randomly. After all the 13 indicators were assigned to one of the four parcels of Economic, total scores within each parcel were then averaged based on the actual number of indicators assigned to it.

After parceling, the number of indicators of C-CSRO was trimmed down to 4x4=16 (Figure 3.). And the CFA model to be tested hypothesized a single model of C-CSRO on a Chinese person's orientation towards CSR that was explained by the factors of C1Econ (Economic), C2Legal, C3Ethical and C4Disc (Discretionary). Covariations among these four factors were explained fully by their regression on C-CSRO, and error terms associated with the item measurement were

uncorrelated. Each of these factors has 4 indicators that were represented by a parcel and loaded on their respective factors in the following pattern:

P1 Econ, P2Econ, P3Econ, P4Econ load on factor C1Econ;

P1Legal, P2Legal, P3Legal, P4Legal load on factor C2Legal;

P1 Ethical, P2 Ethical, P3 Ethical P4 Ethical load on factor C3Ethical;

P1Disc, P2Disc, P3Disc, P4Disc load on factor C4Disc.

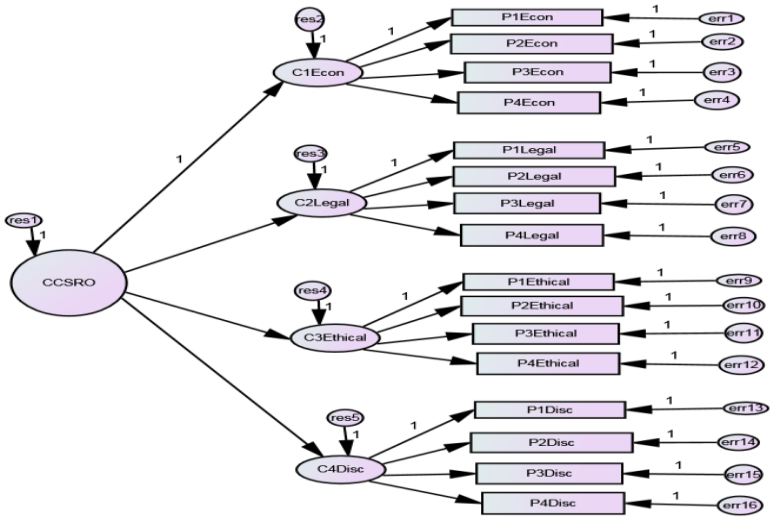

Figure 4. C-CSRO Model after parceling.

The C-CSRO Model after parceling has 16 observed variables 36 distinct parameters to estimate, with [16(16+1)/2] -36= 100 degrees of freedom. χ^2 test of overall model = 606.05, $p < .001$, χ^2/df ratio = 6.06. With the probability value of the χ^2 test smaller than .05, by convention the null hypothesis that the model fits the data on a global basis should be rejected. As the calculation of

X^2 can be affected by samples size, larger the sample size would lead to higher X^2 statistics and increase the risk of committing type I error i.e. rejecting a true model (Finney & Distefano, 2006). So other tests of absolute fit were examined. Goodness of fit Index GFI (Jöreskog & Sörbom, 1984) represents how well the relative amount of observed variances and covariances among the indicators fit the hypothesized model. Some suggested GFI >.9 acceptable fit (Bentler & Bonnett, 1980; Gerbing & Anderson, 1988), others regarded this as good fit (Meyers, Gamst & Guarino, 2013), and when GFI is close to one it is an indicator of good model fit (Byrne, 2010). GFI of the C-CSRO Model is .921, indicating reasonably good fit. Root Mean square error of approximation RMSEA measures the fit between model-based and adjusted covariance matrix and the actual covariance matrix (Steiger & Lind, 1980). RMSEA value of .06 may imply good model fit (Hu & Bentler, 1999), .05 represents close fit, up to 0.08 represents adequate fit and >.10 indicates poor fit (Browne & Cudeck, 1993). RMSEA here is .08 that measures up to a standard of fair fit at a 90% confidence interval with upper bound at .086 and lower bound at .074, PCLOSE at .000 is < .05.

Relative fit indices assess the proportionate improvement in model fit by comparing between a target model and a more restricted baseline model where typically all observed variables are uncorrelated (Hu & Bentler, 1999) e.g. Comparative Fit Index CFI (Bentler, 1990), Tucker-Lewis Index TLI (Tucker & Lewis, 1973) and Normed Fit Index NFI (Bentler & Bonett, 1980). CFI .95 to 1 is generally regarded as good to best fit; TLI .95 to 1 indicates excellent fit (Tracey, Marsh & Craven, 2003), .9 is acceptable fit and < .9 means the model needs respecification (Bentler & Bonett 1980). CFI of C-CSRO is .934 meaning 93.4% of the covariations in the data can be reproduced by the priori model. TLI is .921 and NFI is .922, both appear to support a

reasonably sufficient fit of the model when compared with a null model. Similar to RMSEA, Standardized Root Mean Square Residual SRMR measures the badness of the model fit that means the smaller the number the better is the model fit; and SRMR below .08 indicates good fit (Hu & Bentler, 1999). SRMR of C-CSRO is .0679 suggesting the data fits the model pretty well.

Figure 5. displays standardized loadings, with estimated path coefficients of C1Econ (Economic) stands out with the highest loading of 1.61, the other three factors of C2Legal, C3Ethical and C4Disc, all have factor loadings >.30. When standardized paths are above .30 they can be considered meaningful (Chin, 1998).

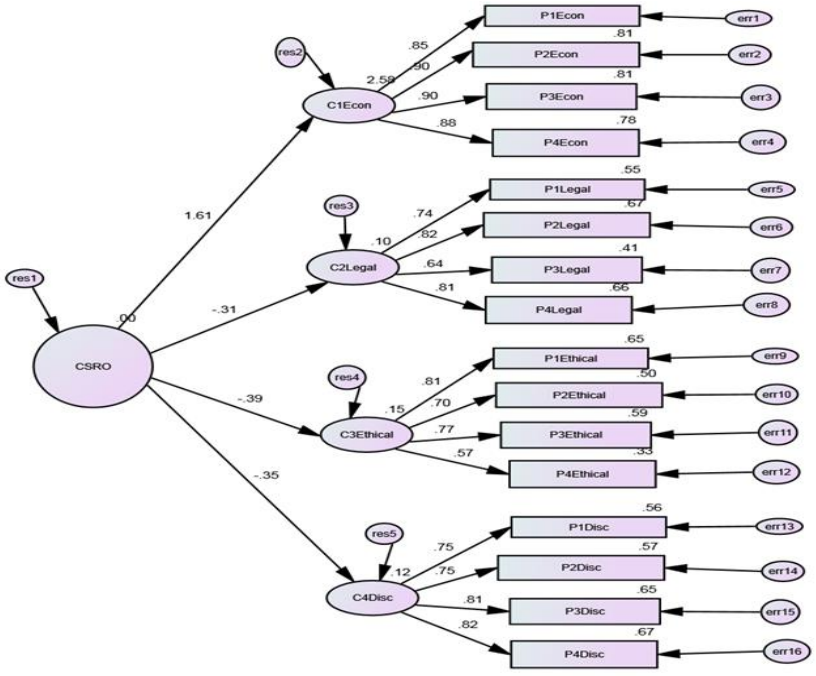

Figure 5. Hypothesized factorial structure of the C-CSRO Model.

Squared multiple correlations (R^2) indicate to what extent the respective factor (dependent variable) explains the variance in an observed variable and any R^2 larger than 10% of the variance is considered to have a large effect size (Davis, 2013). R^2 for most of the dependent factors here are rather substantial, ranging from 0.096 to 2.577.

Modification indices (MI) in relation to the error covariances and error for regression weights were examined. MIs err1 <--> err10 (MI = 137.7) and P1Econ<--- P2Ethical (MI=79.407) appeared substantially higher that warranted further investigation. Since a possible cause of the higher MIs could be due to some parameters that were fixed but in fact should be freed (Byrne, 2001), so an attempt was made to respecify the C-CSRO model by freeing estimated parameters on model error covariance with the highest MI coming from err1<--> err 10 and became the C-CSRO (Respecified) Model (Figure 6.).

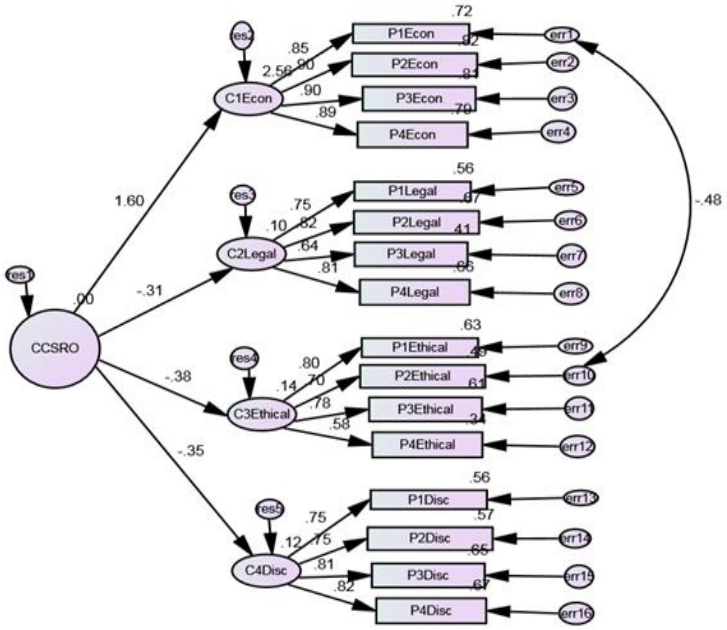

Figure 6. Hypothesized factorial structure of the C-CSRO (Respecified) Model.

Fit statistics of the C-CSRO (Respecified) Model showed minor improvement as compared to the C-CSRO Model after Parceling, with *df* of C-CSRO (Respecified) =99, χ^2 = 455.777, *p*= .000. CFI value increased from .934 to .953; GFI from .921 to .938, TLI from .921 to .944, RMSEA and SRMR were down from .080 to .675 and from .068 to .067 respectively.

Discussion

The above results showed high items reliability of the measurement scale C-CSRO. EFA outcomes yielded a four factor model of Economic, Legal, Ethical and Discretionary as suggested by A.B. Carroll (1979,1991); and CFA results appeared to show C-CSRO's factor structure and interrelatedness of its constructs were consistent with those that the original instrument E-CSRO intended to measure. Seemingly there was initial evidence to claim that the latent variables of C-CSRO are measured by its related indicators and there probably existed a more global factor in C-CSRO that has the ability to explain the co-variations among the factors.

Perhaps the few high modification indices deserved further elaboration. Content of the related item statements were reviewed and a teacher who specialized in translation was consulted for a second opinion. The first pair of high MI came from came from P1Econ<--- P2Ethical, with item statements 1A, 8D, 6A and 5B formed the parcel of P1Econ, and items 8C, 1D and 6C formed the parcel of P2Ethical. That means both questions 6 and 8 were involved here. In fact if we looked further in conjunction with the third pair of high MI from err1 <--> err10, it was found err 1 was tied in with P1Econ and err 10 was tied in with P2Ethical as well. Again item statement 8C which represented the Ethical dimension was related to err 10; and statement 8D

that represented the Economic dimension was related to err1. Based on these observations, seemingly statement 8C and 8D could be the potential source of concern. Henceforth, the investigation was narrowed down to Question 8, statements 8C and 8D in particular; their wordings in both E-CSRO and C-CSRO were scrutinized.

Question 8 asked the respondent to define what is meant by being a good corporate citizen. Statement 8C in E-CSRO in English is "doing ***what*** is expected morally and ethically". This was translated as "所作所為**皆**合乎一般道德標準" in C-CSRO. If 8C in its Chinese version was back-translated into English, it would become "***whatever*** it is doing is expected morally and ethically". This revealed some subtle yet important discrepancies between the meaning of C-CSRO and E-CSRO over the item statement of 8C. As for statement 8D, its original English wordings in E-CSRO is "being as profitable as possible" which was translated as "盡可能賺取最高利潤" in C-CSRO. When the Chinese version of 8D was back-translated into English, it appeared to reflect the original meaning in E- CSRO without problem. So the investigation focused on Statement 8C. If one word "**皆" (**meaning "all") in 8C of C-CSRO is deleted and becomes "所作所為合乎一般道德標準", this will clearly enhance content equivalence between C-CSRO and E-CSRO. Such change was reviewed and agreed by two other experienced language teachers, both of them were bilinguals and have formal training in translation.

C-CSRO was grounded upon the established conceptual framework of CSR Pyramid, whereas the item variables of the C-CSRO scale was translated from a well validated measurement scale E-CSRO, so misspecification due to conceptual inadequacies would be less likely. Hancock (2006) posited that model fit does not necessarily support model truth; looking out for exact

model fit or absolute truth is unrealistic; what is of higher interest rather is to find out if there is acceptable or not acceptable model-data fit. Given the initial fit statistics of C-CSRO were reasonably good, resorting to model re-specification with the sole objective to have even better model fit should be exercised with much care. Following this argument, it was decided that by deleting one word in statement 8C based on the rationales explained earlier, the content integrity of C-CSRO should be improved while change was kept to the minimum.

Conclusion and Caveats

The Western world has pioneered in the studying of CSR and CSRO. In recent decades, the topic of CSR has drawn notable attention in both the business and academic fields. Very often CSR became a topic of discussion in general and business education. In order to assess the effectiveness of GE endeavors in developing students' CSRO, there is a need to establish a relevant and valid measurement instrument. A. B. Carroll (1979, 1991) conceptualized the rather abstract and broad notion of CSR into a four dimensional construct, upon which Aupperle et al. (1983) designed an academically sound measurement instrument (E-CSRO) to assess the CSR orientations (CSRO) of individuals. Despite E-CSRO had been substantially applied and empirically supported by a number of studies over a few decades, a similar measurement scale in Chinese that assesses a person's CSRO has yet to be found. This study translated E-CSRO into Chinese (C-CSRO) and initially tested its validity among some Chinese student samples.

There are limitations in this study that have to be recognized. Firstly faulty translations can contaminate the results (Brislin, Lonner & Thorndike, 1973; Hansen & Fouad, 1984; Prieto,

1992; Sperber, 2004), and it is challenging to attain complete equivalence in cross-cultural translation. Also, CFA itself operates upon a model laden pre-requisite, and models may draw on heuristic views. So the seemingly reasonable conclusions that we can draw from CFA applications can actually stem from some rather restrictive theoretical assumptions. Despite of these limitations, anticipated benefits of using translated instruments to assist cross-cultural research justified the efforts. A translated measurement scale in Chinese that assesses CSRO is not only useful in the Chinese community where English is not the first language, it can also assist related cross-cultural study.

Presently an initial attempt to validate C-CSRO was performed. Overall, there is positive evidence to support reliability of C-CSRO's item variables. The sample data has displayed similar psychometric properties of E-CSRO and such properties are robust in this sample. Before C-CSRO can be applied to GE courses or GE learning activities to gauge students' development in CSRO, there is a need for additional analysis e.g. testing the validity of C-CSRO in relation to other personal attributes, using split samples for cross- validation by EFA and CFA; applying C-CSRO to other Chinese population segments such as non-business students to identify any configural invariance of their CSRO; in the end to enhance the predictive value and robustness of C-CSRO.

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