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ORIGINAL AND APPLIED RESEARCH

Validation of a translated measurement scale to assess Chinese business students' orientation toward corporate social responsibility

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ABSTRACT

This study translated a corporate social responsibility orientations scale (E-CSRO), a measurement scale that assesses individuals' orientation toward corporate social responsibility, into Chinese (C-CSRO). A convenience sample of Chinese business students ($N = 793$) was recruited and randomly halved. Reliability and correlational statistics, exploratory and confirmatory factor analysis suggested C-CSRO's basic factor structure and construct interrelatedness are convergent with those of E-CSRO. Future researchers should cross-validate C-CSRO with different student groups and other Chinese communities.

KEYWORDS

Chinese business students; corporate social responsibility; translated measurement scale; validation of measurement scale

Introduction

The public in general expects businesses to operate in a socially responsible manner. Yet a series of white-collar crimes of global magnitude in the last few decades has prompted skepticism. Behind the corporate veil, it is the persons in charge who mastermind corporate decisions. As today's business students will become tomorrow's business decision makers, the need to inculcate them with positive corporate social responsibility orientations (CSRO) is pertinent. Such need to strengthen CSR education is also relevant to Hong Kong and Mainland China. The former is a key financial and economic hub of China whereas the latter has been enjoying rapid economic growth over the years. Yet, both are faced with their own problems of corporate misconducts and they share the same need to nurture Chinese business students' CSRO. Despire such a common concern to better educate students on CSR, scholars opined that study in assessing the effectiveness of educational endeavors to change a person's CSRO is still inadequate (Kleinrichert, Tosti-Kharas, Albert, & Eng, 2013). Before CSR educational interventions can be better assessed, there is a prior need in obtaining a scale that can establish baseline measures of a person's CSRO. Similarly a Chinese scale in measuring students' CSRO in the Chinese communities is also needed.

Literature review

Research evidence seems to suggest that business students are in general prone to be more selfish and inclined to dishonesty than their nonbusiness peers are (Baird, 1980; Brown, 1995; Frank, 2004; Kahneman, Knetsch, & Thaler, 1986; Lampe & Engleman-Lampe, 2012; Levy & Rakovski, 2006; McCabe & Trevino, 1995; Sautter, Brown, Littvay, Sautterm, & Bearnes, 2008). It remains questionable whether business students have the ethical capacity to safeguard the public from corporate misconduct (Muff et al., 2013). If we look into the situation of China, the need to bolster business students' sense of CSR is also pressing. With economic growth on a fast track, irresponsible corporate acts in Mainland China have been reported in the news from time to time. In the 1990s, about 90% of the institutions accredited by the Association to Advance Collegiate Schools of Business had some form of business ethics (BE) courses, while only 3% of the universities in China offered such courses (Wu, 2003). By 2007, about 39% of the universities in China that ran MBA programs offered some form of BE courses (Zhou, Ou, & Enderle, 2009). Though the Western notion of CSR has a growing presence in China's universities, students' understanding of it still appears limited (Wang & Juslin, 2012).

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A CSR framework

CSR itself is a megatopic, making it challenging to arrive at one universal definition (Baden & Harwood, 2013; Okoye, 2009). It touches on aspects of business including corporate strategy, supply chain management, CSR reporting, and a CSR/sustainability stock index (Skouloudis & Evangelinos, 2014), among numerous others. Besides being versatile, CSR also involves conflicting forces such as personal and public interests, economics, and ethics (Windsor, 2006). A. B. Carroll (1979, 1991) suggested a CSR framework known as the CSR Pyramid that encompassed both economic and noneconomic obligations of a business through four succinct variables, namely, economic (provision of goods and services with an aim to make profit), and three noneconomic dimensions: legal (compliance with the law), ethical (socially commendable behaviors that exceed legal requirements) and discretionary or philanthropy (engaging in charitable activities not legally required). This framework reflects real business dilemmas, and is regarded as the most cited (Crane & Matten, 2004) and enduring CSR concept (Windsor, 2006) that "still enjoys considerable popularity among CSP scholars" (Wood, 2010, p. 52).

The E-CSRO measurement scale

Based on A.B. Carroll's (1979, 1991) CSR Pyramid, Aupperle (1982) and Aupperle, Hatfield, and Carroll (1983) developed a forced-choice measurement scale in English (the E-CSRO) that operationalized the measurement of an individual's CSRO. E-CSRO allows a person to assign his or her own relative scores over the four CSRO of economic, legal, ethical, and discretionary, and thus enables comparison of intrapersonal CSRO scores (Brown & Maydeu-Olivares, 2011). Such a forced-choice design indicates that the fulfillment of each CSR option is often done at the expense of the others, due to competition for resources (Jamali & Mirshak, 2007). The E-CSRO was tested and applied in numerous studies and regarded as robust and academically sound (Ibrahim, Angelidis, & Howard, 2006). The original E-CSRO had 15 question sets, each containing a lead-in statement followed by four substatements, A–D. Each substatement corresponds to one of the four CSRO dimensions of economic, legal, ethical, and discretionary, respectively. A maximum of 10 points in total can be allocated to the four substatements in the same question set, and equal scoring for each substatement is allowed. The Instruction and Question 1 of the original E-CSRO are extracted below.

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

Assume you are considering from the perspective of your firm. Evaluate the relative importance of each of the statements within its own set and give scores to each one of them.

A score of 10 is the maximum that you can give to one set of statements. If you think a statement is very important within the set, the maximum score you can give is 10 to a single statement; if you think the statement is very unimportant, the minimum score you can give is 0. Within each set, you can give the same score to different statements. The total score for a set of statements can be from 10 to 0. Scores should be integers.

For example, you might allocate points to a set of statements as follows:

1. It is important to perform in a manner consistent with:
   A. expectations of maximizing earnings per share
   B. expectations of government and the law
   C. the philanthropic and charitable expectations of society
   D. expectations of societal mores and ethical norms

Research purposes

To ascertain the effectiveness of educational means in nurturing CSRO among Chinese students, a Chinese measurement scale that is similar to E-CSRO is needed. An initial study was conducted to obtain such a scale in Chinese known as the C-CSRO (Wong, 2017). To follow up on this prior work, in the present study we aimed to do the following:

- Elaborate in detail the translation process of E-CSRO into Chinese (C-CSRO)
- Further test the underlying constructs and psychometric properties of C-CSRO using two split samples derived from a group of Chinese business students in Hong Kong
- Further examine and confirm the structural convergence of C-CSRO with E-CSRO

- Derive a reliable and valid measurement scale that is useful for CSR educational research in the Chinese community

Method

We first elucidated how E-CSRO was converted into Chinese as C-CSRO. Next, it was applied to a group of Chinese students enrolled on an associate degree business program at a community college in Hong Kong. An associate degree program usually takes two years to complete, and its graduates are normally eligible to apply to study for the last two years of a four-year undergraduate degree program. Samples were split into two halves, Sample 1 and 2. Sample 1 was first subjected to reliability and correlational tests. As C-CSRO is a translated output and in a way a new scale, hence Sample 1 was also subjected to exploratory factor analysis (EFA) to determine whether it carried a similar factor structure to its host scale. Sample 2 was subjected to confirmatory factor analysis (CFA) using AMOS V. 21 (Arbuckle, 2012). The next section elaborates on the translation and statistical procedures.

Translation procedures

Figure 1 depicts the translation process for C-CSRO. Established methodical and procedural approaches in cross-cultural translation of measurement scales were embedded in the process, including a reiterative and serial method with forward and backward translation (Brislin, 1970; Fouad, Cudeck, & Hansen, 1984; Hansen, 1987; Prieto, 1992), and an interactive approach that drew on team consensus between translators, reviewers, and back-translators (Barata, Gucciardi, Ahmad, & Stewart, 2006; J. S. Carroll, Holman, Segura-Bartholomew, Bird, & Busby, 2001; Lee, Li, Arai, & Puntillo, 2009; Ponce et al., 2004). To avoid professionals to "improve" translation outputs unknowingly during the process, some nonprofessionals who are competent in their assigned tasks were employed as translators and back-translators (Herrera, DelCampo, & Ames, 1993; Hyrkäs, Appelqvist-Schmidlechner, & Paunonen-Ilmonen, 2003; McKay et al., 1996).

Before translation started, the researcher together with an English language teacher specializing in applied translation first scrutinized E-CSRO to ensure its social relevance to the local context. Two questions were in doubt. One was on discrimination against ethnic minorities, and the other touched on "whistle-blowing." When compared with the United States, where E-CSRO originated, discrimination against ethnic minorities does not appear to be as key an issue, while the notion of "whistle-blowing" is less of a cultural norm in a predominantly Chinese community like Hong Kong. In fact, both questions were also discarded by Burton, Farh, & Hegarty (2000) when they applied E-CSRO to some Chinese students in Hong Kong. Hence these two question sets were excluded from translation. For the remaining 13 question sets, the reviewers agreed to slightly fine-tune certain words or phrases (set in italics) in E-CSRO, so that the measurement scale could better align to the local situation but without compromising its original meaning. The adjustments include: Question 5 statement A "provide assistance to *private and public education* institutions" was changed to "provide assistance to educational institutions that are in need"; Question 7 statement B "compliance with *local, state*, and *federal* statutes" to become "compliance with ordinances." Question 12 statement B "compliance with various *federal* regulations" was changed to "compliance with various laws and regulations"; question 12 statement C "assist the *fine* and performing arts" into "assist the arts and performing arts."

The refined E-CSRO was translated into two Chinese versions independently by Translators A and B. A is a business professional and ex-teacher of business at tertiary level; B is a seasoned business professional in copy writing. They commented on each other's work and agreed on one version of C-CSRO. This output was then reviewed by two reviewers independently. Reviewer A specializes in teaching English as a second language and applied linguistics; reviewer B is an ex-business professional and teaches business at tertiary level. To facilitate the review, C-CSRO was broken down into 48 parts. Each part was compared against the corresponding part in E-CSRO and each reviewer gave a score for their semantic equivalence using Flaherty et al.'s (1988) three-point scale , where a score of 1 represents a different meaning between E-CSRO and C-CSRO on a particular part, 2 represents almost the same meaning in both versions, and 3 represents exactly the same meaning. Neither Reviewer scored any part at 1. Only one part was ranked by both reviewers at 2-2; the rest were ranked either 2-3 or 3-3, indicating a high level of content compatibility between C-CSRO and E-CSRO.

Next, C-CSRO was back-translated into English by two parties. Back-translator A consisted of two final year university students. They first shared the translation equally and independently, then critiqued on each other's work, moderated their outputs if

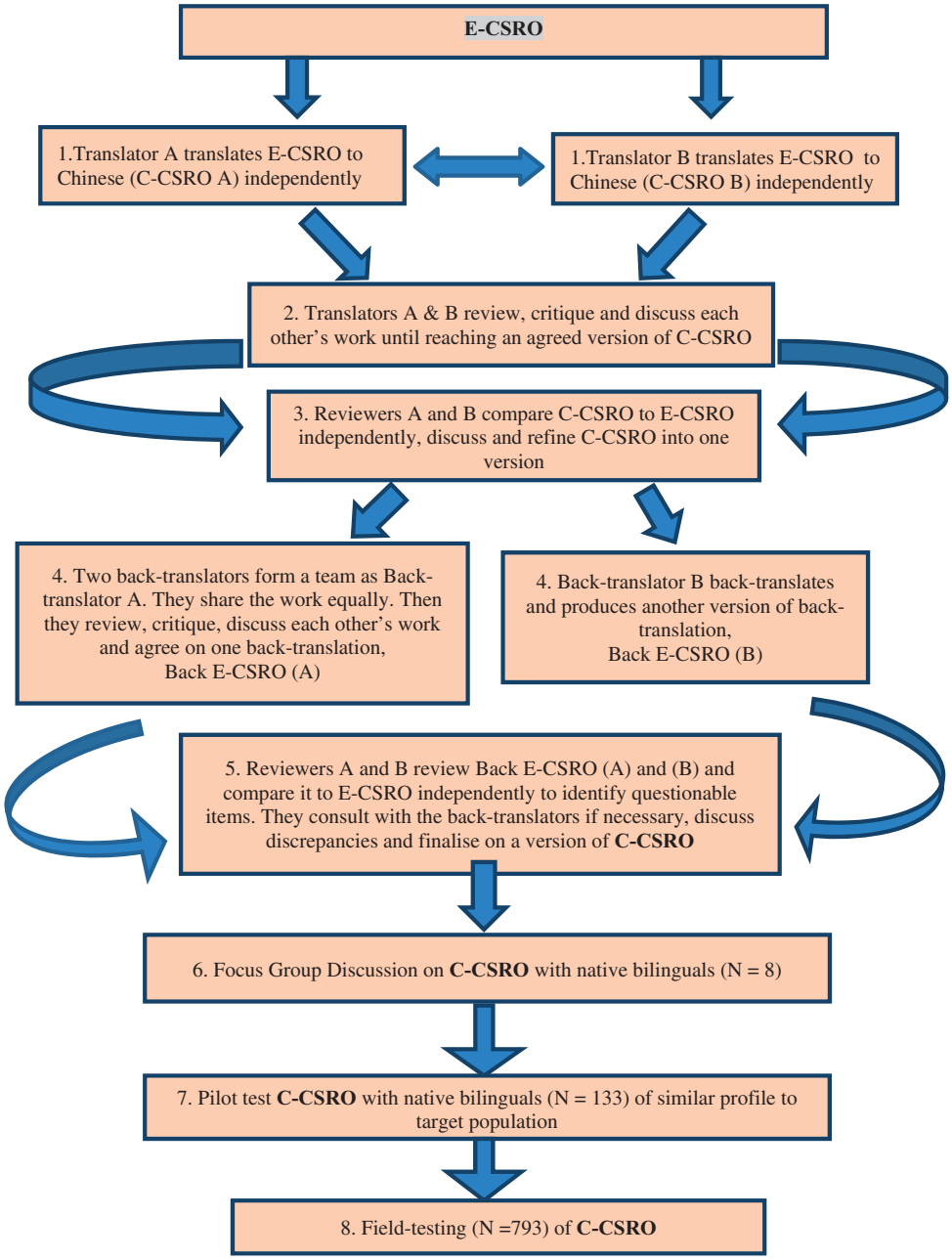

Figure 1. Procedures in converting E-CSRO to C-CSRO.

necessary and agreed on one back-translated version as *Back-CSRO (A)*. Back-translator B is a teacher of English language at tertiary level with a master's degree. She back-translated C-CSRO independently, producing *Back-CSRO (B)*. After that, reviewers A and B compared *Back-CSRO (A)* with *Back-CSRO (B)* independently, again using Flaherty et al.'s (1988) scale to identify discrepancies. Results showed most parts received a 3-3 or at least a 3-2 score from both reviewers. No part received a 2-2, 2-1 or 1-1. The few parts that were ranked at 2 by either reviewer were examined; the discrepancies found were minor and no further adjustment was needed. Overall, C-CSRO appeared to be an adequate translation of E-CSRO. C-CSRO was then subjected to a focus group discussion with some associate degree students majoring in corporate communications. And the group considered C-CSRO was easy to understand and there was no content ambiguity. Finally, a pilot test was then performed to rehearse the administrative procedures of the actual survey.

Statistical procedures

A convenience sample of 872 students responded and 793 anonymous responses were usable. They were

Table 1. Descriptive statistics and *t* test for Sample 1 and Sample 2.

	Sample 1 ($n = 396$)		Sample 2 ($n = 397$)			
	M	*SD*	*M*	*SD*	*t*	*p*
Economic	2.71	1.08	2.80	1.28	0.971	.332
Legal	2.48	.650	2.42	0.680	−1.322	.187
Ethical	2.42	.664	2.42	0.760	−0.013	.989
Discretionary	1.64	.633	1.66	0.662	0.323	.747

randomly halved into Sample 1 ($n = 396$) and Sample 2 ($n = 397$) using SPSS Version 21. The *t*-test results indicated no significant differences between the four CSR dimensions (Table 1). Kaiser-Meyer-Olkin test results were 0.664 and 0.731 for Samples 1 and 2, respectively, exceeding the recommended Kaiser-Meyer-Olkin value of 0.6 (Kaiser, 1974). The result of Bartlett's test of sphericity on multivariate normality was significant for and for Sample 1, $\chi^2(1326, N = 396) = 11917.202$, $p < .001$, and Sample 2, $\chi^2(1326, N = 397) = 13515.416$, $p < .001$, which supports the data's suitability for factor analysis in both samples (Bartlett, 1954). Mahalanobis *d*-squared tests showed four cases that were extreme outliers. These cases were reviewed and no unreasonableness was found, hence were retained.

Sample 1 was tested for item reliability, interscale correlation coefficients of the components, and factor structure by EFA. Similar to justifications given in Wong (2017), Principal component analysis was used for data extraction while varimax rotation was used for data rotation. Sample 2 was subjected to CFA, using maximum likelihood (Bollen, 1989) as the estimation procedure. Underlying assumptions for using maximum likelihood include a reasonably large (not less than 200) sample and data normality (Jackson, Gillaspy, & Purc-Stephenson, 2009). There is no definite cutoff value to decide univariate and multivariate nonnormality. Some suggested when distribution of univariate skewness approaches 2.0 and kurtoses 7.0 that can be regarded as moderately nonnormal (Curran, West, & Finch, 1996), whereas another suggested it could be an issue when absolute skewness is ≥3 or higher and kurtosis ≥10 (Kline, 2005). Overall, skewness and kurtosis of most observed variables fell within the preferred range.

Results

Reliability and correlational statistics

For internal consistency, Cronbach's alpha values for C-CSRO are: economic .903, legal .824, ethical .776, and discretionary .830. Cronbach alpha values over .9 can be interpreted as excellent, over .8 good, over .7 acceptable, over .6 questionable, over .5 poor, and under .5 unacceptable (George & Mallery, 2003). Pearson's *r* correlations between economic and the three noneconomic dimensions of legal, ethical, and discretionary are strongest at −0.411 ($p < .01$), −5.10 ($p < .01$), and −0.421 ($p < .01$). Among the three noneconomic CSRO dimensions, Pearson's *r* correlations are relatively weaker, ranging from 0.075 to −0.144 (Table 2). The outcomes were in fact comparable to those obtained by Aupperle et al. (1983), Burton et al. (2000), and Wong (2017).

Table 2. Pearson correlation of interscale components of C-CSRO (Sample 1, $n = 396$).

	1	2	3	4
Economic	–	−0.411**	−0.510**	−0.421**
Legal		–	0.109*	−0.144**
Ethical			–	0.075
Discretionary			.	–

*$p < .05$ (two tailed). **$p < .01$ (two tailed).

Exploratory factor analysis

The first four factors with an initial eigenvalue greater than 1 explained 40.255% of the total variance of the item scores. Thirty-one items had correlation coefficients of .4 or higher loaded on the first four factors, with a distribution breakdown of: 11 items on Factor 1 (economic), 8 items on Factor 2 (discretionary), 7 items on Factor 3 (ethical), and 5 items on Factor 4 (legal) (Table 3). A few negative cross-loadings were spotted between the economic and the noneconomic items, which will be elaborated on in the Discussion. Overall, a discrete factor structure that aligns with that of E-CSRO can be observed.

Confirmatory factor analysis

The hypothesized C-CSRO model has four factors, economic (Econ), legal, ethical (Ethic), and discretionary (Disc), that together express a person's CSRO. Each factor has 13 statements or indicators that load on it respectively (i.e., 13 statements × 4 CSRO factors), totaling 52 observed indicators. Initial CFA results on Sample 2 indicated poor model fit, $\chi^2(1270, N = 397) = 7307.25$, rendering $\chi^2/df = 5.75$, $p < .001$; root mean square error of approximation (RMSEA) = 0.110, comparative fit index (CFI) = 0.530. Burton et al. (2000) found that "CFA with many indicators per latent factor often does not converge and tends to produce a poor fit even when the model is relatively accurate" (p. 157). To keep the number of free

Table 3. Component rotated matrix Sample 1.

	Factor 1	Factor 2	Factor 3	Factor 4		Factor 1	Factor 2	Factor 3	Factor 4
12D Economic	**0.783**	**−0.076**	0.050	0.003	13D Discretionary	−0.154	**0.551**	−0.072	−0.056
13C Economic	**0.781**	−0.181	−0.038	0.022	5A Discretionary	−0.073	**0.521**	0.191	−0.096
10D Economic	**0.744**	−0.165	0.009	−0.046	10D Ethical	−0.074	0.048	**0.819**	−0.049
11A Economic	**0.743**	−0.025	−0.105	0.006	2D Ethical	−0.161	−0.065	**0.808**	−0.132
5B Economic	**0.624**	−0.240	−0.278	−0.245	4D Ethical	0.017	0.000	**0.590**	−0.120
6A Economic	**0.592**	−0.242	−0.268	−0.296	1A Economic	0.375	**−0.418**	**−0.507**	−0.359
7C Economic	**0.591**	−0.202	−0.109	−0.205	6C Ethical	−0.249	−0.003	**0.460**	0.080
9B Economic	**0.584**	−0.190	−0.057	−0.158	1B Legal	−0.107	−0.125	−0.098	**0.730**
2A Economic	**0.448**	−0.324	**−0.403**	−0.356	2C Legal	−0.064	−0.084	−0.129	**0.696**
4A Economic	**0.442**	−0.300	−0.326	−0.262	6B Legal	−0.073	−0.161	−0.080	**0.591**
13A Ethical	**−0.430**	−0.131	0.211	0.002	3A Legal	−0.139	−0.146	0.128	**0.542**
2B Discretionary	−0.125	**0.745**	−0.113	−0.065	4B Legal	0.014	−0.090	−0.059	**0.498**
1C Discretionary	−0.189	**0.731**	−0.012	−0.129	10A Discretionary	−0.120	**0.415**	−0.012	−0.093
3C Discretionary	−0.079	**0.713**	0.090	−0.057	3B Economic	**0.436**	−0.146	−0.255	−0.335
6D Discretionary	−0.140	**0.658**	0.039	−0.049	10C Ethical	**−0.401**	0.015	0.109	−0.104
4C Discretionary	−0.104	**0.562**	0.041	0.006					

Note. Extraction method: principal component analysis. Rotation method: varimax with Kaiser normalization. Rotation converged in 23 iterations. Bold items are those that had correlation coefficients of .4 or above.

parameters to a manageable number and enhance model fit (Bovaird & Koziol, 2012), a parceling strategy is recommended especially when the measurement scale has a large number of indicators (Floyd & Widaman, 1995; Hoyle, 2011). As C-CSRO has a relatively large number (52) of indicators, that makes parceling a reasonable option.

Following similar practice carried out in the initial validation of C-CSRO (Wong, 2017), Hoyle's (2012) suggestion was also used to implement parceling. Four parcels labeled P1, P2, P3, and P4 were created for each CSRO of economic, legal, ethical, and discretionary. From the 13 indicators that load on the same CSRO factor, those of the highest and lowest mean scores were grouped under the first parcel P1; those of the next highest and lowest mean scores were grouped under P2 and so on until all 13 indicators from the same CSRO were assigned to a parcel. Total item scores within each parcel were then averaged to become an indicator of its own. Subsequently the C-CSRO model was trimmed down to 4 CSRO factors × 4 parcels = 16 indicators (Figure 2).

After parceling, fit statistics of Sample 2 become the following $\chi^2(100, N=397) = 329.126$; χ^2/df ratio = 3.29, $p < .001$. The goodness-of-fit index (Jöreskog & Sörbom, 1984) was 0.910, suggesting acceptable (Bentler & Bonnett, 1980; Gerbing & Anderson, 1988) to good fit (Meyers, Gamst, & Guarino, 2013), and RMSEA was 0.076, meaning it measures up to adequate fit (Browne & Cudeck, 1993). Other indices were consulted. CFI was 0.944, and a CFI value greater than 0.90 means good model fit (Bentler, 1990; Bollen, 1989). The normed fit index (Bentler & Bonett, 1980) of 0.923 is marginally acceptable. The Tucker-Lewis index (Tucker & Lewis, 1973) of .933 implies sufficiently good fit of the data to the baseline model (Tracey, Marsh, & Craven, 2003). The standardized root mean square residual (0.071) measures the badness of the model fit, and a value < 0.08 means the data fit the C-CSRO model reasonably well (Hu & Bentler, 1999). Estimated path coefficients of C-CSRO (Figure 2) show standardized regression weights are C1Econ 1.34, C2 Legal –0.37, C3Ethical –0.52, and C4Disc –0.44, and standardized paths > 0.30 is considered as meaningful (Chin, 1998). Squared multiple correlations R^2 of the dependent factors of C-CSRO are > 10%, ranging from 0.191 to 1.784. R^2 indicates how far each factor (dependent variable) that explains the variance in an observed variable; when R^2 >10% may imply large effect size (Davis, 2013).

Three pairs of modification indices (MIs) were relatively higher: P4Legal ← C3Ethical (MI = 27.049); P1Econ ← P2Ethical (MI = 25.102) and err1 ↔ err10 (MI = 47.814). For the first pair, all indicators contained in the parcels of P4Legal and C3Ethical were examined and did not appear to be problematic. Statement 8D representing the economic dimension was related to P1Econ and err1 and Statement 8C representing the ethical dimension was related to P2 Ethical and err10. Skewness and kurtosis of Statements 8C and 8D were 1.257 and 5.636 and 2.130 and 7.052 respectively. In the initial validation of C-CSRO (Wong, 2017) it was found Statement 8C in E-CSRO is "Doing what is expected morally and ethically" (emphasis added) whereas Back-translation of 8C from C-CSRO into English became "Doing *whatever* is expected morally and ethically." Such a difference can be resolved by deleting one Chinese word meaning "ever" in C-CSRO statement 8C. For Statement 8D its Chinese-to-English back-translation reflected the original meaning well, hence no

Figure 2. Hypothesized factorial structure of the C-CSRO model.

adjustment was necessary. When estimated parameters on model error covariance of the highest MI (err1 ↔ err10) were freed and retested for model fitness (Byrne, 2001), re-specified model fitness slightly improved, $\chi^2(99) = 278.635$, $p < .001$. The CFI increased to 0.956, goodness-of-fit index to 0.924, Tucker-Lewis index to 0.947, and both RMSEA and standardized root mean square residual were down to 0.068 and 0.070, respectively, while the high MIs from err1 ↔ err10 and P1Econ ← P2Ethical were deflated.

Discussion

This study sought to further the validation of C-CSRO by using split samples. Results showed that reliability measures of the Chinese item variables remained high. In terms of direction and magnitude, interscale Pearson *r* correlations among the components of C-CSRO are comparable with those obtained from E-CSRO (Aupperle et al., 1983; Burton et al., 2000; Wong, 2017). Between the economic and the three noneconomic dimensions, correlations were stronger and all negative. This can be explained by the opposing nature of economic and noneconomic CSR objectives. For legal, ethical, and discretionary dimensions, all of them more related to the social aspects of CSR and in some ways overlapping conceptually. As Aupperle (1982) pointed out, "the ethical and discretionary responsibilities are less clearly understood" (p. 60) and "the most discriminating difficulties were the ethical and discretionary categories" (p. 97); and in a forced choice situation weaker correlational outputs were yielded among the three noneconomic dimensions.

EFA results yielded a four-factor structure, with 31 of the 52 item variables loaded clearly on a specific CSRO. A few instances of cross-loadings were found: under variable 2A (economic) there was a positive loading of 0.448 on Factor 1 (economic) and a negative cross-loading of –0.403 on Factor 3 (ethical); under variable 1A (economic) there was a positive loading of 0.375 with two negative loadings of –0.418 and –0.507 on Factor 3 (ethical) and Factor 2 (discretionary). These outcomes resemble those found by Aupperle (1982) and Aupperle et al. (1983), where from "The dual loading of the economic and ethical components … [it] was apparent that an inverse relationship existed between the Economic construct and the Ethical construct" (p. 122). Owing to the fact that firms operate with a scarcity of resources, economic and noneconomic aspects of CSR have to compete for such resources. When firms attach more importance

to economic responsibilities, this might lead to de-emphasis of ethical responsibilities, or vice versa (Aupperle, 1982). As an ipsative scale, E-CSRO, and hence C-CSRO, can elicit such conflicts. Overall, split sample test results supported C-CSRO as a meaningful scale to assess a person's CSRO within a Chinese group and there exists a factor structure similar to what the original E-CSRO purported to measure in a Western society.

Ranking of the four CSRO dimensions (Table 1) followed a descending order of importance of economic, legal, ethical, and then discretionary, with the strongest endorsement on the economic dimension and the weakest on the discretionary dimension. In fact, A. B. Carroll (1979) had attached the same order of importance arbitrarily, while Aupperle et al. (1983) found similar empirical results. All in all, economic as a CSRO remains consistently dominant in terms of ranking in importance, while discretionary is consistently at the bottom. Rankings of the legal and ethical dimensions are more fluid and they might sometimes swap their places in the middle places (Burton et al., 2000; Edmondson & Carroll, 1999; Pinkston & Carroll, 1996).

CFA results of Sample 2 confirm a reasonably well-fitting model for C-CSRO. Model respecification rendered some deflation in the modification index and improvement in the fit statistics. But as explained earlier model fitness should not be purely data driven, unless supported by solid rationales that are both "theoretically and practically defensible" (Thompson, 2000, p. 272). Given that C-CSRO was built upon an established CSR framework and a robust host scale, and that fit statistics were sufficiently good and semantic discrepancy stemming from Statement 8C has been identified and can be addressed, to re-specify a model that already fits well solely to achieve a better model fit is not advisable (MacCallum, Roznowski, & Necowitz, 1992).

Conclusion

This study furthered on an initial validation of C-CSRO. There are some inherent limitations. Since the CSR Pyramid first appeared in 1979, new social phenomena have emerged and more contemporary notions like sustainable businesses and corporate governance have already developed into mainstream CSR topics that are not reflected by the CSR Pyramid. This requires an update to the taxonomy of CSR in A. B. Carroll's framework to reflect CSR current trends more closely. Methodologically, even though overall statistical outputs provide good supporting evidence for equivalence between C-CSRO and E-CSRO, it is still difficult if not impossible to eliminate all inadequacies in cross-cultural translation (Prieto, 1992; Sperber, 2004).

The steps in translating E-CSRO into Chinese (C-CSRO) were outlined. Using split samples it further tested and confirmed the reliability and validity of C-CSRO among a group of Chinese students. Results showed there are discrete factorial constructs in C-CSRO that are convergent to those found in E-CSRO, and the structural validity of C-CSRO as compared with E-CSRO is supported. Overall, this study can reasonably confirm the presence of A. B. Carroll's four CSR constructs in the Chinese measurement scale C-CSRO when applied to some Chinese subdegree business students in Hong Kong. Moreover there is potential transferability of C-CSRO. First, as the academic standing of an associate degree student is comparable to that of a freshman- and sophomore-year university student, and thus C-CSRO can be used to access CSRO of this group of undergraduates. Second, China has experienced dramatic economic growth in the past few decades, but the real challenge lies in whether businesses can operate with compatible standards of social ethicality. Although participants in this study are from Hong Kong but all of them are of Chinese ethnic origin. Redding (1990) once described Hong Kong as a place where materialism and pragmatism predominated and in fact many cities in Mainland China are catching up with similar social trends. Therefore this study may bear ecological implications for business students in Mainland China who will eventually become business professionals in the future. As a final point, to enhance the predictive value of C-CSRO, its psychometric properties and configural invariance can be further analyzed in light of other moderating attributes such as different business programs or a person's ethical propensity, between business and nonbusiness students, and between the Hong Kong Chinese and Mainland Chinese groups, so that efficacies of CSR education in the Chinese community can be better assessed.

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