

RELIABILITY AND VALIDITY OF A MEASURE OF PERCEIVED COLLECTIVE FAMILY EFFICACY BELIEFS FOR FILIPINO ADOLESCENTS

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ABSTRACT

This study examined the psychometric properties of the Revised-Family Collective Efficacy Questionnaire (RFCEQ), a revised version of a previously developed measure of perceived collective efficacy beliefs. Content validation was performed to establish that the items of the scale were consistent with the concept of collective family efficacy beliefs. The scale was then administered with a sample of 774 Filipino adolescents. The factorial validity of RFCEQ was determined using exploratory factor analysis and confirmatory factor analysis, while reliability estimates were determined through Cronbach alpha. EFA and CFA results supported a two-factor structure for the RFCEQ. In general, results of the analyses provided evidence that the RFCEQ is a valid and reliable measure of Filipino adolescents' perceived collective family efficacy beliefs.

Keywords: Personal Efficacy, Collective Efficacy, Collective Family Efficacy Beliefs, Filipino Adolescents, Validity, Reliability

INTRODUCTION

The social cognitive theory of Bandura emphasizes the role of self-beliefs on how individuals shape their lives. Specifically, beliefs of personal efficacy may serve as guide to one's behaviours (Bandura, 1997) and life choices (Pajares & Urdan, 2006). However, perceived efficacy is not limited to self-efficacy as people lives in an interdependent social system and many actions and choices are made collectively with other people. This is referred to as *collective efficacy* which is "concerned with the performance capability of a social system as a whole" (Bandura, 1997, p.469). Perceived collective efficacy is assumed to be rooted in self-efficacy (Bandura, 1982) and is considered as "an emergent group-level attribute rather than simply the sum of members' perceived personal efficacies (Bandura, 1997, p.478). There are empirical studies providing strong evidence on the influence of perceived collective efficacy on group functioning (Bandura, 2000; Bandura, 2006) and in general, findings suggest that higher perceived collective efficacy is related to higher motivational investment, stronger staying power in the face of impediments or setbacks, and greater personal accomplishments in groups.

While perceived collective efficacy is experienced by various types of groups, organizations, or social units, some researchers focused their attention on family efficacy (Caprara, Regalia, Scabini, Barbaranelli, & Bandura, 2004). Caprara et al. (2004) identified four dimensions of family efficacy – *collective family efficacy, filial efficacy, marital efficacy, and parental efficacy*. Although the concept of family efficacy stems from the concept of collective efficacy (Magno, Profugo, & Mendoza, 2009), collective family efficacy is the one that closely adheres to the conceptualization of collective efficacy as it "focuses on the perceived operative capabilities of the family as a whole (Caprara et al., 2004, p. 250). Perceived collective family efficacy is formally defined as family members' "beliefs in the capabilities of their family to work together to promote each other's development and well-being,

maintain beneficial ties to extrafamilial systems, and to exhibit resilience to adversity” (Bandura, Caprara, Barbaranelli, Regalia, & Scabini, 2011, p. 424). Achieving consensus in decision-making and planning, coping together with adversities, and providing emotional support in difficult times and in stressful situations are some of the key elements of collective family efficacy (Caprara et al., 2004). Collective family efficacy has been found to be positively associated with family satisfaction and open communication with parents (Bandura et al., 2011; Caprara et al., 2004). Among Filipino adolescents, collective family efficacy has also been found to be positively associated with dimensions of resiliency that has social orientation (Magno et al., 2009). Hence, assessment of the perceived collective family efficacy of an individual is important and could be very important for adolescents who depend on social units like one’s family in making important life decisions, performing complex tasks, or adjusting to life challenges and problems. Moreover, collective family efficacy is probably more relevant to individuals who live in a more collectivistic society like Filipinos because such collectivistic society considers interdependency as acceptable and even necessary. Thus, developing and validating measures of perceived collective family efficacy beliefs for Filipino adolescents seem to be an important endeavour. Such task is even more important as existing measures of collective family efficacy beliefs are relatively scarce compared with self-efficacy beliefs scale.

The Family Collective Efficacy Questionnaire

The Family Collective Efficacy Questionnaire (FCEQ) is a measure of a person’s perceived collective family efficacy. It was developed by Fulgencio (2008) to measure selected Filipino student leaders’ collective family efficacy. The initial items of the FCEQ were generated from an open-ended pre-survey questionnaire given to college students who are members and leaders of student organizations. Fulgencio (2008) identified and clustered the responses from the pre-survey based on Albert Bandura’s definition and description of collective efficacy. Three dimensions which became the three subscales of the FCEQ were identified: perceived efficacy to take action as a family (TAF), perceived capability of other family members (COFM), and perceived efficacy to solve problems as a family (PSF). Initially, 29 items comprised the preliminary draft of the FCEQ which made use of a 5-point Likert scale. Content validation and item and reliability analysis of the FCEQ resulted to its final form of 15 items (5 items per dimension). The instrument was used to assess the perceived collective family efficacy of 192 Filipino college student leaders (Fulgencio, 2008). However, while item analysis and reliability analysis were conducted on the FCEQ, the factorial or structural validity of the FCEQ was not assessed so there was no empirical support to the assumption that the FCEQ measures the three identified dimensions of perceived collective family efficacy. One cannot simply assume the structure of the FCEQ so there is a need for factorial validation. Furthermore, since the study of Fulgencio (2008) only involved student leaders, there is also a need to determine if the FCEQ is valid with samples from normal population (e.g. non-student leaders). Hence, while the FCEQ is one of the few locally-made instruments that measure perceived collective family efficacy beliefs, much has to be done to establish its validity and reliability among Filipino samples.

The Present Study

Given the significant role of family influences on the development of adolescents and the importance of perceived collective efficacy in the choices and actions of an individual, especially that of an adolescent who is dependent in so many ways in one’s family, there is a need for an assessment tool that can measure one’s perceived collective family efficacy. The present study aimed to develop a valid and reliable instrument that can measure the perceived collective family efficacy of Filipino adolescents. To achieve this aim, the study adapted the

items of the FCEQ with the purpose of revising and improving the scale in terms of its content validity and establishing its psychometric properties in terms of reliability and factorial validity.

METHOD

Participants

A total of 774 undergraduate students (Mean age = 17.79 years) from a university in Manila, Philippines were selected as participants for the study. 597(76.80%) of the participants were females. The participants came from different year levels and were selected through convenience sampling. The participants were briefed about the purpose of the study and they responded to the research instrument in their regular classes.

Instrument

A scale was designed by the researchers to measure perceived collective family efficacy beliefs by revising the Family Collective Efficacy Questionnaire (FCEQ) developed by the first author (Fulgencio, 2008) as part of her dissertation study. The Revised-FCEQ (RFCEQ) retained the English form of the original scale because Filipinos are considered as bilinguals who are expected to have adequate reading and reading comprehension skills in both the English and Filipino (the national language of Filipinos) languages. Moreover, English is used as one of the medium of instruction in Philippine schools in the elementary, secondary, and tertiary levels. Thus, the English form of the scale is deemed appropriate to its target population of Filipino adolescents.

The items from the original FCEQ were reviewed by the researchers for content validation and revisions were made on a number of items to make the items more reflective of the construct of perceived efficacy. For example, the original FCEQ item “We find time to do things that are important to us” was revised to “We *can* find time to do things that are important to us.” In addition, some items were made more concise while others were rewritten to improve the sentence structure. It was also ascertained that the language used in all of the items in the RFCEQ would be suitable to Filipino adolescents. For content validation by peers, the instrument was reviewed by two doctorate students in Guidance and Counseling. Suggestions were made by the reviewers to improve the format and the instruction in the instrument but no suggested revisions were provided concerning the items. The instrument was also reviewed by a college professor who specializes in English and suggestions were made to improve the sentence structure of the items. After revisions incorporating the suggestions of the reviewers were made, the RFCEQ contains 15 statements that describe a family’s perceived capability to perform collective action and work as a unit, solve problems together and solve problems within the family, and beliefs on the capability of family members. Like the original scale, the RFCEQ is a Likert response scale which asked respondents to indicate whether they agree or disagree with each statement using a scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

PROCEDURE

The RFCEQ was administered with the participants of the study. During the administration of the instrument, participants were reminded that there were no right or wrong answer and it was important for everyone to be honest with their responses. They were also requested to complete all items and were given assurance that their responses will be kept private and confidential. Many of the participants completed the instrument within 5 minutes although no time limit was set for the completion of the instrument. Using split sample method,

participants' data were subjected to exploratory factor analysis and confirmatory factor analysis using the SPSS Version 16 and AMOS Version 16, respectively.

RESULTS

Exploratory Factor Analysis

Using split sample analysis, data from randomly selected 360 participants was subjected to exploratory factor analysis (EFA) to determine the factorial structure of the Filipino adolescents' collective family efficacy beliefs. Prior to the main analysis, the item-total correlations and internal consistency of the Revised-FCEQ were determined. The item-total correlations ranged from .40 to .72 and Cronbach's alpha was .94. Thus, all 15 items of the RFCEQ were retained for the EFA. The obtained Kaiser-Meyer-Olkin (KMO) value of .95 and the Bartlett's Test of Sphericity value of 3568.528 ($p < .001$) suggest that the data is suitable for factor analysis.

EFA through Principal Axis Factoring (PAF) with Oblimin Rotation was then performed with the raw data. EFA is a factor analytic method used to determine the underlying dimensions or factors of a set of variables. PAF method was used because the multivariate normality of data in the study cannot be assumed, while Oblimin Rotation was used because oblique rotations method like Oblimin is more appropriate when there is reason to believe that dimensions or factors are correlated as in the case in the present study. Using the minimum Eigen value of 1 and screen plot as criteria, two factors which accounted for 63.18% of the variance were extracted. In terms of factor loading, an item was considered to load in a factor if factor loading is at least .40 in one factor and not more than .35 in another factor. Four items were found to have significant cross-loadings and were excluded in subsequent analyses. These items are: "*The members of my family are capable of learning and engaging in new experiences*"; "*My family can deal effectively with crisis*"; "*We can be supportive of the decision made by the family*"; and "*I trust our ability to address the problems of our family.*" Excluding the cross-loading items, the obtained pattern matrix shows that nine items loaded in Factor 1 with factor loadings ranging from .62 to .89, while three items loaded in Factor 2 with factor loadings ranging from .56 to .84.

To check if similar results will be obtained without the four items excluded for cross-loadings, EFA was again conducted on the same data using the remaining 11 items. Results were consistent with the initial EFA as two factors were again extracted. The two factors accounted for 65.66% of the variance and the same items that loaded in Factor 1 or Factor 2 in the initial EFA also loaded on the same factors during the second EFA. An examination of the items that loaded in Factor 1 (Eigenvalue = 6.17; % of variance = 56.11) shows that these items came from two of the hypothesized dimensions of the original FCEQ- perceived efficacy to take action as a family and perceived efficacy to solve problems as a family. Hence, this factor was labeled as *perceived efficacy for collective family action*. The items in this factor represent the belief that one's family is capable of doing significant tasks together, especially with regard to goal-oriented and problem-solving tasks. One sample item is "*My family can work together in order to accomplish a goal.*" The nine items in this factor comprise the first subscale of the RFCEQ. The Cronbach's alpha for the first subscale is .91, suggesting that the first subscale has high reliability in terms of internal consistency.

Meanwhile, the items that load in Factor 2 (Eigenvalue = 1.05; % of variance = 9.56) came from the original FCEQ dimension of perceived capability of other family members. Hence, Factor 2 was labeled as *perceived efficacy of family members*. The items in this factor refer to the belief that other members of one's family have the capability to perform tasks relevant

or important to the family. One sample item is: “*I have confidence that my family members can perform tasks that are assigned to them.*” The three items in this factor comprise the second subscale of the Revised-FCEQ. The Cronbach’s alpha for the second subscale is .82 which suggests that the second subscale has good reliability in terms of internal consistency. Combining the two subscales (11 items), the Cronbach’s alpha for the full scale is .92 which is an indication of high reliability. To again test for content validity, a college professor with a doctorate degree in psychology reviewed the items in the two subscales and confirmed that the items were valid and suitable to the subscale to which they loaded.

CONFIRMATORY FACTOR ANALYSIS

To validate the two-factor structure of the RFCEQ, a confirmatory factor analysis (CFA) using the data from the remaining 417 participants was conducted. CFA is used to confirm the hypothesized structure of a set of variables. In the present study, the two factors identified from the EFA served as the two hypothesized latent variables, while the respective items for each subscale served as indicators or manifest variables of the hypothesized latent variables. Through the CFA, it was examined if items load on their hypothesized factor and if the two-factor structure of the Revised-FCEQ meets the criteria for a good fitting model. To determine the fit of the data, multiple indices were used: chi square (χ^2), ratio of chi-square to degrees of freedom (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR). To evaluate the model fit, the following criteria were used: χ^2 should not be significant and χ^2/df should be 3.0 or less (Hoe, 2008); CFI and TLI should at least be .90 (Browne & Cudeck, 1993); and RMSEA (Browne & Cudeck, 1993) and SRMR (Hu & Bentler, 1999) should not be higher than .08.

CFA was conducted on the data using a covariance matrix and maximum likelihood estimation was employed to estimate parameters and fit indices. The results of the CFA generally supported the two-factor structure of the RFCEQ. All of the items in the RFCEQ loaded significantly into their hypothesized latent factors and that standardized factor loadings ranged from moderate to strong (.65 to .78). The fit indices also achieved an adequate fit to the data: χ^2 (43, $N=417$) = 159.35; $p < 0.001$; $\chi^2/df = 3.71$; CFI = .95; TLI = .93; RMSEA = 0.08; SRMR = .03. This means that the separation and distinctiveness of the two dimensions of perceived collective family efficacy as measured by the RFCEQ was empirically supported by the data. An alternative model was tested in which all items of the RFCEQ were made to load on one single latent factor. The fit indices of the one-factor model were: χ^2 (44, $N=417$) = 238.99; $p < 0.001$; $\chi^2/df = 5.43$; CFI = .91; TLI = .89; RMSEA = 0.10; SRMR = .04). A comparison of the fit indexes of the two-factor model and the one-factor model for the RFCEQ suggests that the two-factor model provided a better fit to the data than the one-factor model across all fit indices.

Reliability analysis using Cronbach’s alpha for the full scale and the two subscales were also good (full scale: $\alpha = .91$; factor 1: $\alpha = .89$; factor 2: $\alpha = .77$). Correlation between the two factors was moderately high and significant ($r = .68$). Descriptive statistics indicate that the sample reported comparable levels of efficacy beliefs in the two factors (Mean_{F1} = 4.09, SD = .67; Mean_{F2} = 4.02, SD = .77).

DISCUSSION

The purpose of the present study is to establish the reliability and validity of the Revised-FCEQ. Content validation through peer reviews provided support to the content validity of the RFCEQ. EFA identified the two-factor structure of the construct of collective family

efficacy beliefs as measured by the RFCEQ. The factorial validity of RFCEQ was further established with results of the CFA confirming the two-factor structure of the RFCEQ. The reliability estimates of the two subscales and the full scale of FCEQ were consistently good as evidenced by acceptable Cronbach alpha values in both the EFA and CFA samples. In sum, the present study provided empirical evidence on the validity and reliability of the RFCEQ. These results suggest that RFCEQ can be used to measure Filipino adolescents' perceived collective family efficacy beliefs. Assessment of adolescents' collective family efficacy beliefs may provide valuable information on how an adolescent view his or her family's capability to function as a unit, which may go a long way in providing insights on the family dynamics of an adolescent. Such information can then be used by school counselors to assist adolescent students in coping with family-related issues or personal problems that have strong roots from family experiences.

While related, the separation and distinctiveness of the factors of *perceived efficacy for collective family action* and *perceived efficacy of family members* suggests that Filipino adolescents may distinguish these two dimensions of collective family efficacy beliefs. Indeed, it is possible that the beliefs that one's family is capable of performing important tasks as a collective unit is related but distinct with the beliefs that members of one's family are capable of performing important tasks. Believing that one's family can effectively work together is important as it may give a person a sense of collective identity and a person may feel empowered for being in a family who can work and function effectively as a unit. While *perceived efficacy for collective family action* seems to be more closely associated with the concept of collective efficacy, *perceived efficacy of family members* is also important as believing on the capability of other family members may strengthen a person's beliefs that his or her family have the capability to work and solve problems as a unit. Believing on the other family members' capabilities may also be a manifestation of trust and pride to other family members which may enable a person to accept being and working together with such family members.

While the psychometric properties of the RFCEQ was satisfactory based on preliminary results, the reliability and validity of the instrument can be further established by testing it with a larger and more heterogeneous sample of Filipino adolescents. In this study, data was limited to a convenience sample from one university. Future researches need to examine the psychometric properties of the RFCEQ with samples from other schools and from other age or educational levels (e.g. high school adolescents). Moreover, the validity of RFCEQ as a measure of collective family efficacy beliefs still needs construct validation by examining how the measure would relate to other measures of collective family efficacy scales and self-efficacy scales. It would also be important to examine how the two factors of perceived collective family efficacy beliefs as measured by RFCEQ would relate or predict family variables like family satisfaction, communication to parents, family values and parenting styles. Furthermore, it would also seem important to determine the role of collective family efficacy beliefs in influencing important psychological outcomes among adolescents like adaptive coping, psychological wellness, resiliency, academic motivation, and achievement. With measures like RFCEQ, such research endeavors can be realized.

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APPENDIX

THE REVISED-FAMILY COLLECTIVE EFFICACY QUESTIONNAIRE

Perceived Efficacy for Collective Family Action

My family is capable of helping a family member solves his/her problem.

My family can work together in order to accomplish a goal.

I believe in my family's ability to do things together.

Our family can find time to do things that are important to us.

I believe that my family has the ability to accomplish things that are important to us.

My family can handle the most difficult situations.

My family is capable of discussing problems that affect us.

Together our family is able to solve problems.

Perceived Efficacy of Family Members

I have confidence that my family members can perform tasks that are assigned to them.

The members of my family are capable of doing their share of work whenever asked.

Most of my family members are capable of handling responsibility.