Psychological Collectivism: A Measurement Validation and Linkage to Group Member Performance

Christine L. Jackson
Purdue University

Michael J. Wesson
Texas A&M University

Jason A. Colquitt
University of Florida

Cindy P. Zapata-Phelan
University of Florida

The 3 studies presented here introduce a new measure of the individual-difference form of collectivism. Psychological collectivism is conceptualized as a multidimensional construct with the following 5 facets: preference for in-groups, reliance on in-groups, concern for in-groups, acceptance of in-group norms, and prioritization of in-group goals. Study 1 developed and tested the new measure in a sample of consultants. Study 2 cross-validated the measure using an alumni sample of a Southeastern university, assessing its convergent validity with other collectivism measures. Study 3 linked scores on the measure to 4 dimensions of group member performance (task performance, citizenship behavior, counterproductive behavior, and withdrawal behavior) in a computer software firm and assessed discriminant validity using the Big Five. The results of the studies support the construct validity of the measure and illustrate the potential value of collectivism as a predictor of group member performance.

Keywords: collectivism, individual differences, teams, groups, personality

As the nature of work has changed, cooperation among employees has become increasingly important (Hedge & Borman, 1995; Mohrman & Cohen, 1995; Motowidlo & Schmit, 1999). Work is increasingly scheduled around group-based projects rather than individual job descriptions, with individual employees working in several different groups at any given time (Ilgen & Pulakos, 1999; Mohrman & Cohen, 1995). The performance evaluation and compensation systems that govern the employees in such groups often build in cooperative components, with members appraised and rewarded on the basis of shared achievements (e.g., Bartol & Durham, 2000; DeMatteo, Eby, & Sundstrom, 1998). Such systems may also supplement the traditional focus on “taskwork” behaviors by considering “teamwork” behaviors on the part of individual group members (e.g., LePine, Hanson, Borman, & Motowidlo, 2000). As a result, the very conceptualization of job performance has changed, as the concept of “doing a good job” has become more dependent on the concept of “being a good group member.”

As job performance takes on a more cooperative character, it becomes necessary to identify employees with a propensity to be effective group members. Reviews in the personality and teams literatures have speculated that collectivism could take on a new importance in the contemporary workplace (Kozlowski, Gully, Nason, & Smith, 1999; Murphy, 1999; Perrew & Spector, 2002). Highly collective individuals see themselves as members of one or more in-groups, are primarily motivated by the norms of those in-groups, prioritize the goals and well-being of those in-groups, and emphasize their connectedness to other in-group members (Triandis, 1995). Scholars have theorized that collectivism could enhance one’s tendency to cooperate in group contexts (Chen, Chen, & Meindl, 1998; Cox, Lobel, & McLeod, 1991; Earley & Gibson, 1998; Wagner, 1995). Still, a fundamental question remains largely unexplored: Does collectivism predict members’ job performance in work group settings?

One reason for the lack of research linking collectivism to group member job performance may be the reliability and validity of collectivism measures. In a recent review, Earley and Gibson (1998) concluded, “What seems to be a safe, but pessimistic, conclusion is that if further research is to be conducted using individualism–collectivism, then continued efforts need to be made in improving its measurement” (p. 296; see also Kagitcibasi, 1994; Oyserman, Coon, & Kemmelmeier, 2002; Triandis, Chan, Bhawuk, Iwao, & Sinha, 1995). With that in mind, we report the results of three independent studies that (a) validate a new measure of collectivism for use in work contexts and (b) link scores on that measure to group member performance. The first study developed and tested the new measure in a sample of management consultants. The second study cross-validated the measure in a university alumni sample and examined its convergent validity with other collectivism scales. The third study assessed the discriminant validity of the new measure with established individual differences and tested the predictive validity of the measure by linking it to supervisor ratings of group member job performance in a sample of computer software developers.
Collectivism: Origins and Measurement

Much of the attention devoted to collectivism can be attributed to Hofstede’s (1980) cross-cultural study that identified individualism—collectivism as one of four major cultural variables. Scholars have continued to examine individualism—collectivism as a cultural variable, often using the country rankings provided by Hofstede as proxies. Others have developed new scales using Hofstede’s variables as a basis for their research. For example, the Global Leadership and Organizational Behavior Effectiveness (i.e., GLOBE) Project created scales to assess two forms of collectivism (one referenced to the collective distribution of resources and one referenced to the cohesion of organizations and families) with the intention of predicting organizational practices and leader attributes and behaviors (House, Javidan, Hanges, & Dorfman, 2002).

Other studies have operationalized individualism and collectivism as individual-difference variables. For example, Triandis and colleagues proposed that both could be viewed as psychological dimensions that correspond to the constructs at the cultural level (Triandis, Leung, Villareal, & Clack, 1985). The authors suggested that the individual version of collectivism be termed allocentrism and the individual version of individualism be termed idiosyncracy. The value of this perspective can be seen in arguments by Triandis and Suh (2002), who suggested that only around 60% of the members of an individualistic culture will be allocentric as individuals and 60% in collective cultures will be allocentric. This view is consistent with a recent meta-analysis by Oyserman et al. (2002), which found that between-culture differences in collectivism were “neither as large nor as systematic as often perceived” (p. 40). Like Triandis et al. (1985), the studies reported here cast collectivism as an individual difference. However, we eschewed the allocentrism label in favor of psychological collectivism, a less confusing term that has been used occasionally in the literature (e.g., Hui, Triandis, & Yee, 1991). An individual-difference-based view of collectivism has become more common in organizational behavior, with several studies occurring within one culture (e.g., Colquitt, 2004; Colquitt, Noe, & Jackson, 2002; Cox et al., 1991; Dickson & Weaver, 1997; Eby & Dobbins, 2000; Moorman & Blakely, 1995; Piliavin & Meindl, 1998; Van Dyne, Vandewalle, Kostova, Latham, & Cummings, 2000) or using an individual-difference approach in multiculture studies (e.g., Earley, 1994; Gibson, 1999; Gomez, Kirkman, & Shapiro, 2000; Kirkman & Shapiro, 2001).

The studies reported here also follow an emerging consensus in the literature that collectivism and individualism are not polar opposites but rather orthogonal, independent constructs. Oyserman et al.’s (2002) review summarized this position as follows:

> Although the assumption of IND being the conceptual opposite of COL may be intuitively appealing, an accumulation of recent research suggests this simple approach does not sufficiently represent the impact of IND and COL on basic psychological processes. Instead, IND and COL are better understood as domain-specific, orthogonal constructs. (p. 8; see also Ho & Chiu, 1994; Triandis, 1995)

Given our focus on predicting the performance of group members, the remainder of this article focuses solely on collectivism.

Families of Measures

Most of the major measures of collectivism can be categorized into three principal families that tend to share items across scale versions. Appendixes A and B summarize these families, including the articles that introduced and revised the collectivism scales, the in-groups referenced by those scales, the labels for scale facets in cases where the measure was multidimensional, and sample items. We also provide the number of Web of Science citations from 2000 to 2005 for each of the articles, to provide a sense of the current visibility of the various scales. The first family, shown in Appendix A, is the Triandis family, introduced in Hui’s (1988) dissertation, based on earlier work (Hui & Triandis, 1986). The first four versions of the Triandis scales included between five and seven facets (Hui, 1988; Triandis et al., 1986; Triandis, Bontemps, Villareal, Asai, & Lucca, 1988; Triandis, McCusker, & Hui, 1990), whereas the more recent versions collapsed those facets into two broader dimensions (Gelfand & Realo, 1999; Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis & Gelfand, 1998). The second family, summarized in Appendix B, is the Earley family, introduced in Erez and Earley (1987) and revised and expanded in Earley (1993). Unlike the Triandis scales, Earley’s measures are intended to capture a unidimensional form of collectivism. Appendix B also summarizes the Wagner family. The measure introduced in Wagner and Moch (1986) includes three facets, reflecting collective beliefs, values, and norms. Wagner (1995) introduced a different version that utilized many of the Triandis items.

Scales from all three of the major families have struggled with issues of reliability. Hui’s (1988) own validation study yielded an average reliability of .60 for his subscales. Studies using Singelis et al.’s (1995) scales have found reliabilities as low as .59 (Oishi, Schimmack, Diener, & Suh, 1998; Probst, Carnevale, & Triandis, 1999; Robert, Probst, Martocchio, Drasgow, & Lawler, 2000; Triandis & Singelis, 1998). In a review article, Earley reported that his measures had poor psychometric properties and recommended that other scales be used (Earley & Gibson, 1998). Some studies using Wagner and Moch’s (1986) scale have also failed to reach the .70 standard (Chen, Meindl, & Hunt, 1997; Eby & Dobkins, 1997). Finally, Wagner’s (1995) scale has failed to reach the .70 standard in some instances, with reliabilities as low as .58 for the subscales (Ramamoorthy & Carroll, 1998). These reliability problems were noted in Oyserman et al.’s (2002) review, which estimated that half of the cross-cultural studies on collectivism have used scales with poor reliability.

The collectivism scales, as a set, have also been criticized with respect to content validity (Earley & Gibson, 1998; Fiske, 2002; Kagitcibasi, 1994; Oyserman et al., 2002; Triandis, 1995). For example, Earley and Gibson (1998) argued, “Quite frankly, if one simply observed the highly varied operationalizations of individualism—collectivism without reference to the underlying construct, it might appear that these measures tap unrelated constructs” (p. 291). In commenting on the inconsistent results of Oyserman et al.’s (2002) meta-analytic review, Fiske (2002) concluded,

> This can only mean that the various scales are not measuring the same two constructs—in other words, the various scales that are intended to measure IND are actually measuring several different, still unidentified attributes of the respondents and that scales designed to measure COL are measuring a variety of unknown attributes as well. (p. 80)
Concerns about content validity are underscored by the correlations among the various scale facets. Studies using scales from the Triandis family have sometimes yielded near-zero or even negative correlations among facets purported to represent collectivism (Hui & Yee, 1994). Moreover, when scale scores were used as indicators of a higher order collectivism construct, those scores had either low factor loadings or poor internal consistency (Chen et al., 1997; Hui & Yee, 1994). Studies using scales from the Wagner family have also yielded small or near-zero correlations among facets (Moorman & Blakely, 1995; Ramamoorthy & Carroll, 1998; Wagner, 1995; Wagner & Moch, 1986). Such results raise questions about whether the various facets named in the Appendixes are actually assessing the same underlying construct.

**Study 1**

In response to the concerns raised about collectivism measurement (Earley & Gibson, 1998; Kagitcibasi, 1994; Oyserman et al., 2002; Triandis et al., 1995), in Study 1 we developed and tested a new collectivism measure to be used in organizational research. The content of our measure was initially based in Triandis’s various discussions of the defining attributes of collectivism (Triandis, 1989, 1995, 1996; Triandis & Bhawuk, 1997). Triandis argued that collectivists (a) use groups as the units of analysis in their social space, preferring to draw meaning from group memberships; (b) emphasize a sense of collective responsibility and common fate; (c) feel great concern about what happens to in-group members; (d) emphasize group norms as a driver of behavior rather than individual attitudes; and (e) prioritize the goals of the in-group rather than personal goals. Triandis further suggested that these defining attributes should be moderately correlated—that the attributes should converge to capture the common core of collectivism (Triandis, 1995; Triandis & Bhawuk, 1997).

We compared these attributes with descriptions of collectivism in other reviews of the literature. Ho and Chiu (1994) derived a classification scheme for collectivism that consisted of 18 different “component ideas” for the construct. Almost all of the components could be viewed as more specific or nuanced versions of the Triandis attributes described above. Exceptions included economic and religious philosophies that are more relevant at the national culture level, along with the importance of privacy. Oyserman et al. (2002) presented a summary of all of the concepts included within collectivism measures in their meta-analysis. Most of the concepts could again be viewed as more specific or nuanced versions of the Triandis attributes. Exceptions included the importance of advice and a focus on hierarchy. It should be noted that Oyserman et al. argued that many of these exceptions, including privacy and advice issues, should more appropriately be conceptualized as consequences of collectivism, not defining qualities of the construct itself.

We therefore limited the content of our measure to the five facets summarized in Table 1: preference, reliance, concern, norm acceptance, and goal priority. Our terminology and discussion of each facet in Table 1 are distilled from the key sources cited in the table (though often with low reliability or near-zero correlations among facets). The scales in the Earley family sample the preference, reliance, and norm acceptance facets (though in a purportedly unidimensional fashion). The scales in the Wagner family sample most, if not all, of the facets in Table 1 (though with often low reliability or near-zero correlations among facets). The scales in the Earley family sample the preference, reliance, and norm acceptance facets (though in a purportedly unidimensional fashion). The scales in the Wagner family sample most, if not all, of the Table 1 concepts (though again with near-zero correlations among subscales).

We designed our measure around a second-order factor structure, with the five facets serving as latent indicators of a higher order collectivism construct. This structure is consistent with Triandis’s view that the defining attributes of collectivism should be moderately correlated (Triandis, 1995; Triandis & Bhawuk, 1997).

### Table 1

**Key Facets of the Collectivism Construct**

<table>
<thead>
<tr>
<th>Facet</th>
<th>Discussion</th>
<th>Key sources</th>
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<tr>
<td>Preference</td>
<td>Collectivists emphasize relationships with in-group members and prefer to exist within the bounds of the in-group. They are affiliative by nature and believe that collective efforts are superior to individual ones.</td>
<td>Triandis (1995)</td>
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<td></td>
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<td>Ho &amp; Chiu (1994)</td>
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<td>Oyserman et al. (2002)</td>
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<tr>
<td>Reliance</td>
<td>Collectivists believe that one person’s responsibility is the responsibility of the entire in-group. This sense of collective responsibility makes them comfortable relying on other members of the in-group.</td>
<td>Triandis (1989)</td>
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<td></td>
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<td>Ho &amp; Chiu (1994)</td>
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<td>Oyserman et al. (2002)</td>
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<tr>
<td>Concern</td>
<td>Collectivists are motivated not by self-interest but by a concern for the well-being of the in-group and its members.</td>
<td>Triandis (1989, 1995, 1996)</td>
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<td>Triandis &amp; Bhawuk (1997)</td>
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<td>Ho &amp; Chiu (1994)</td>
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<td>Oyserman et al. (2002)</td>
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<tr>
<td>Norm acceptance</td>
<td>Collectivists focus on the norms and rules of the in-group and comply with those norms and rules in order to foster harmony within the collective.</td>
<td>Triandis (1989, 1995, 1996)</td>
</tr>
<tr>
<td>Goal priority</td>
<td>Collectivists’ actions are guided by the consideration of the in-group’s interests. Thus in-group goals take priority over individual goals, even if this causes the in-group member to make certain sacrifices.</td>
<td>Triandis &amp; Bhawuk (1997)</td>
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<td>Ho &amp; Chiu (1994)</td>
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<td>Oyserman et al. (2002)</td>
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and is also consistent with the conceptualization of most multidimensional constructs in organizational behavior (Law, Wong, & Mobley, 1998). We felt that this strategy would allow us to create a more reliable collectivism scale because the five facets should be more internally consistent than the dimensions used in other scales. We also felt that this strategy would maximize both “bandwidth” and “fidelity” (Cronbach, 1990). Bandwidth refers to the amount of information and is increased by assessing a wide variety of construct elements. Fidelity refers to the reliability of the information and is decreased by assessing too many loosely related concepts. Of this bandwidth–fidelity tradeoff, Triandis et al. (1995) wrote,

> It should be noted here that researchers in this area ask for an instrument that will measure the common core, and yet not be too long. However, because allocentrism and idiocentrism are very broad constructs, their measurement with a few items is very difficult. Most short scales have low fidelity (Cronbach, 1990), and it is not surprising that in most past studies the Cronbach alphas have been unsatisfactory (lower than .70). Selection of a narrow aspect of the constructs can result in high alphas, e.g., patriotism can be measured with a .95 alpha (Schmitz, 1992), but then one needs a measure for each collective, which is not convenient since most researchers want a few items to measure the broader construct. (p. 464)

Our goal was therefore to create a small set of items to measure each of the five facets. The second-order factor structure of the measure could then balance fidelity (within the five latent indicators) with bandwidth (within the higher order factor). Because our five facets should be significantly correlated, our measure should possess adequate reliability at the scale level, not just the facet level. Moreover, the second-order structure could provide researchers with a great degree of flexibility. When psychological collectivism is not the central focus of a study, the general factor can be used as a single variable. However, when psychological collectivism is the central focus, the facets can be assessed separately in order to gain a more fine-grained understanding of collectivism effects. Oyserman et al. (2002) suggested that the use of such a facet-level approach could improve the theoretical clarity found in the literature.

We should also note that all five of the facets in Table 1 appear relevant to work contexts in which cooperation is important. K. G. Smith, Carroll, and Ashford (1995) reviewed a number of theoretical perspectives that can be used to explain cooperation. One perspective is attraction theories, which argue that cooperation is fostered when individuals have a natural affinity for one another. The preference and concern facets seem relevant to cooperation from this standpoint, as both should create a sense of attraction to the group. Another perspective is power and conflict theories, which argue that cooperation is fostered when goals and tasks are interdependent. The goal priority and reliance facets seem relevant here, as both should facilitate the development of interdependence within the group. A third perspective discussed by K. G. Smith et al. is modeling theories, which link cooperation to the development of shared norms for prosocial behavior. The norm acceptance facet seems most relevant to this perspective. Thus, each of the facets seems relevant to cooperation as it is conceptualized in the literature.

Method

Item Generation

The first step in constructing the measure was to decide what in-group to reference in the items. The choice of in-group is critical, as the very definition of collectivism is in-group based (Triandis, 1995). Indeed, Deaux and Reid (2000) suggested that “collectivism should be assessed in terms of specific group memberships rather than some general feelings toward groups in general. We suggest that people may be collective in their attitudes toward some groups but not others” (pp. 181–182). The instructions leading into our measure therefore referenced work groups as the in-group, as opposed to the friend, family, neighbor, and kin groups used in past research. We felt that this would make the measure more relevant to applied research in organizational behavior and industrial–organizational psychology.

The second step in constructing the measure was generating items that reflect each of the facets in Table 1. We generated 5 items for each facet with the goal of eventually retaining the strongest 3 (the final, shortened form of the measure is shown in Table 2). We then asked 10 subject matter experts to blindly classify the 25 items into the five facets in Table 1. Items were correctly classified 95% of the time, and only 2 of the items were misclassified by more than one expert. We should note that 2 of the preference items were similar to those used in past research (Earley, 1993; Erez & Earley, 1987; Wagner, 1995; Wagner & Moch, 1986). We then piloted the 25 items in a sample of 540 undergraduates taking management courses at a large Southeastern university to gauge item readability and form an initial picture of the factor structure.

Sample

Study 1 participants were 241 full-time employees of a multinational consulting firm. All participants in the study were at the same level (consultant) within the organization, and all were based in the United States. The consultants’ projects centered on the installation and customization of various software systems (e.g., Peoplesoft systems, SAP systems). Owing to the anonymous nature of the responses to the survey, exact gender distribution cannot be determined. However, the initial sample population was 65% male, with an average age of 27.5. Listwise deletion of missing data resulted in a usable sample of 235 participants.

Consultants represent an interesting setting for examining cooperative phenomena. Their tasks are organized around projects rather than jobs, with some projects taking only a few days and others taking several months. Although the task requirements vary from project to project, cooperation among the consultants is always a necessity. Unfortunately, one barrier to cooperation is that projects are often staffed with consultants who lack experience or familiarity with one another. Thus, individuals must supply the ingredients for cooperation themselves, rather than relying on past history and experience to supply them.

Procedure

Data were collected through the use of an Internet survey. A total of 643 usable e-mail addresses were obtained through the participating company. These e-mails contained an offer to participate in the study, which could be accessed by following a link in the e-mail. Owing to the nature of the survey, respondents were guaranteed complete anonymity in both their responses and their decision to participate. In responding to the 25 collectivism items, respondents were asked to think about the work groups to which they currently belong and have belonged in the past. All items were assessed using a 5-point Likert scale with anchors of 1 (strongly disagree) and 5 (strongly agree). A total of 241 consultants chose to participate, resulting in a response rate of 37%.
Results and Discussion

A confirmatory factor analysis of the 25 items yielded a reasonable fit for a second-order structure with the five facets as latent indicators of the higher order psychological collectivism factor: $\chi^2(270, N = 235) = 532.26, p < .001$; $\chi^2/df = 1.97$; incremental fit index (IFI) = .94; comparative fit index (CFI) = .94; root-mean-square error of approximation (RMSEA) = .06. Good model fit is typically inferred when $\chi^2/df$ falls below 3 and IFI or CFI rise above .90 (Kline, 1998). RMSEA is interpreted as follows: Greater than .10 is poor fit, .08 to .10 is mediocre fit, .05 to .08 is reasonable fit, and less than .05 is good fit (Browne & Cudeck, 1993).

We used the results of the confirmatory factor analysis to select the best 15 items from the larger set of 25. Reducing the length to 15 items made our measure more similar in length to the most commonly used collectivism measures, which range from 8 (Earley, 1993; Gelfand & Realo, 1999; Triandis & Gelfand, 1998) to 11 items (Wagner & Moch, 1986). However, the 15-item length still devoted 3 items to each facet, allowing facet level analyses to be performed when desired. The best 15 items were chosen on the basis of factor loadings, skewness and kurtosis, residual values, and item content.

The fit of the 15-item model was strong: $\chi^2(85, N = 235) = 117.51, p < .05$; $\chi^2/df = 1.38$; IFI = .98; CFI = .98; RMSEA = .04. As shown in Figure 1, each of the collectivism items loaded strongly on the general factor: .56 for preference, .49 for reliance, .61 for concern, .65 for norm acceptance, and .46 for goal priority. All 10 of the interfacet correlations were statistically significant. Thus, the general factor seemed to be driving the five facets to an approximately equal degree. The psychological collectivism measure also possessed strong reliability, whether used as an overall scale ($\alpha = .84$) or as five more specific facets. Facet-level reliabilities were as follows: .86 for preference, .81 for reliance, .90 for concern, .90 for norm acceptance, and .87 for goal priority.

Study 2

The purpose of Study 2 was to cross-validate the shorter 15-item version of our collectivism measure and to assess its convergent validity. Convergent validity refers to the extent to which alternative measures of the same construct share variance (D. T. Campbell & Fiske, 1959; Schwab, 1980). We tested the convergent validity of our collectivism measure by correlating its scores with those derived from other measures of the construct. We chose a representative version of the scales in each of the families summarized in the Appendixes. Specifically, we included the most recent scale from the Triandis family, used by Triandis and Gelfand (1998) and Gelfand and Realo (1999), adapted from Singelis et al. (1995). We also included the most recent scale from the Earley family, in the form of Earley (1993). Finally, we included Wagner and Moch’s (1986) scale, chosen over Wagner (1995) because the latter includes items from the other two families.

Method

Sample

Study 2 participants were 140 individuals working in a variety of organizations and industries. Of the participants, 115 were registered alumni of a large, Southeastern university. The remaining 25 were students in an executive weekend master of business administration (MBA) course at the same university. Participants were 68% male and averaged 40 years of age. Listwise deletion of missing data resulted in a usable sample of 139 participants.

Procedure

A list of 325 names was randomly drawn from a database of 7,000 registered alumni who were known to be employed full time. We mailed
the alumni a survey along with a letter explaining that the purpose of the study was to assess attitudes about working in groups. Participants were told that they were eligible for the study if their job contained a significant group component, meaning they needed to collaborate with others to perform day-to-day tasks and achieve collective work goals. Participants earned a $5 cash payment for their participation. A total of 115 surveys were received, indicating a response rate of 35%. In addition, 43 executive MBA students were given a copy of the survey during their weekend visit to the campus, with the same cash incentive offered. Twenty-five surveys were received, for a response rate of 58%. On average, the participants worked in groups of eight people when performing their job duties and reported high levels of task interdependence with their fellow group members (M = 4.24 out of 5.00 using the measure developed by Pearce & Gregersen, 1991). All items were assessed using a 5-point Likert scale with anchors of 1 (strongly disagree) and 5 (strongly agree).

Results and Discussion

Cross-Validation of Collectivism Measure

The fit of the 15-item model was strong: χ²(85, N = 139) = 101.91, p < .10; χ²/df = 1.20; IFI = .99; CFI = .99; RMSEA = .04. Each of the items loaded highly on its intended facet, with loadings ranging from .56 to .95, with an average of .83. Four of the five facets loaded strongly on the general collectivism factor: .68 for preference, .69 for reliance, .47 for concern, and .42 for goal priority. The norm acceptance facet had a weaker loading of .21, though it was still statistically significant. Nine of the 10 interfacet correlations were statistically significant, with the exception being reliance and norm acceptance. The measure possessed strong reliability, whether used as an overall scale (α = .85) or as five, more specific facets (αs ranging from .78 to .93).

Convergent Validity

Convergent validity can be judged by examining the correlation between our collectivism measure and the Triandis, Earley, and Wagner measures, shown in Table 3. Our measure was strongly correlated with the Triandis measure (r = .52), the Earley measure (r = .50), and the Wagner measure (r = .50). These correlations provide strong support for convergent validity given the different in-groups referenced by the scales, the varying coverage of the five collectivism facets in Table 1, and the different item styles used (e.g., attitudes, past behaviors, norms, beliefs), and the lower reliabilities of some of the other measures (.29 for Earley, .68 for Wagner). The convergent validity correlations for our measure were also stronger than the correlations for the other three, as the Triandis, Earley, and Wagner measures had intercorrelations ranging from .23 to .35.

The facet-level correlations in Table 3 can be used to provide a more fine-grained picture of convergent validity. With respect to the Triandis scale, preference and concern should correlate most strongly with the horizontal facet, which assesses collectivism from an equal status perspective. Norm acceptance, on the other hand, should correlate most strongly with vertical collectivism, which focuses on hierarchical contexts in which norms and rules feed down to group members. With respect to the Wagner scale, preference and reliance should correlate most strongly with the values facet, which captures the belief that members should do what the group thinks is best. Goal priority should correlate most strongly with the norms dimension, which captures the belief that members should sacrifice individual goals for the good of the group. The
correlations in Table 3 match that expected pattern, with the exception of the relation between goal priority and norms. We should note, however, that Wagner’s norms facet yielded very few significant correlations across the table. In fact, the three Wagner facets were not correlated with one another (rs ranging from −.07 to .13).

Study 3

Having described the development and validation of our new measure of psychological collectivism, in Study 3 we seek to make a more substantive contribution. As noted at the outset, the relationship between collectivism and group member performance remains largely untested. Past research has linked collectivism to reward generosity (Gomez et al., 2000), preference for group-based appraisals (Ramamorthy & Carroll, 1998; Waldman, 1997), self-efficacy for teamwork (Eby & Dobbins, 1997), and cooperative choices in a prisoner’s dilemma game (Cox et al., 1991). We explored collectivism’s linkage with four dimensions of job performance: (a) task performance—the proficiency with which members perform the activities recognized as part of their group role (Borman & Motowidlo, 1993); (b) citizenship behaviors—discretionary behaviors that lie outside of an employee’s job description and may not be formally rewarded by the group (C. A. Smith, Organ, & Near, 1983); (c) counterproductive behaviors—intentional behaviors on the part of employees that are contrary to the group’s legitimate interests (Sackett & DeVore, 2001); and (d) withdrawal behaviors—a more passive response to dissatisfaction characterized by psychological and physical avoidance of the group and its work (Hulin, 1991).

Task Performance

According to J. P. Campbell, McCloy, Oppler, and Sager’s (1992) theory of performance, the most proximal individual predictors of task performance are motivation and declarative and procedural knowledge, which are themselves predicted by personality, interest variables, and past experience, among others. In group settings, the collectivism facets should supply the interest criterion needed to foster declarative and procedural knowledge, as collective members prefer to work in groups and are concerned about group welfare. Collective members may also have more past experience working in groups, as past research has linked those two variables (Eby & Dobbins, 1997). In addition, the collectivism facets may supply motivation in task contexts, as the tendency to prioritize group goals should foster a more intense and long-lasting exertion of effort. We are aware of only one study that has linked a member’s collectivism levels to his or her task performance in an actual group setting (Shaw, Duffy, & Stark, 2000). Although this study did not find a significant zero-order link between the two variables, an interaction effect was uncovered in which the relationship between collectivism and task performance became more positive at higher levels of perceived task interdependence. We therefore predicted the following:

Hypothesis 1: Psychological collectivism will be positively related to supervisor ratings of group member task performance.

Citizenship Behavior

Citizenship behaviors form the core of what is more commonly called “teamwork” (LePine et al., 2000), and such behaviors are typically explained using a social exchange theory lens (Blau, 1964). Specifically, Organ (1990) argued that a social exchange relationship is a prerequisite for citizenship behaviors, given that such behaviors may not be formally rewarded by the organization. Triandis and Bhawuk (1997) suggested that collectivists are more likely to adopt a social exchange mindset as they are predisposed to “play relationships by ear,” adopt a long-term time perspective, give more than they receive, and ground their willingness to reciprocate in a deeply held concern for their group. Consistent with this reasoning, past research has supported the linkage between collectivism and individual citizenship behaviors in two studies (Moorman & Blakely, 1995; Van Dyne et al., 2000). We therefore predicted the following:

Table 3

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</table>

Note. N = 139.

* p < .05, one-tailed.
Hypothesis 2: Psychological collectivism will be positively related to supervisor ratings of group member citizenship behavior.

Counterproductive Behavior

Robinson and Bennett’s (1997) model of workplace deviance argues that counterproductive behaviors are triggered by provocations such as inequity and poor work conditions. These provocations create two forms of motivation for engaging in counterproductive behavior: instrumental (to resolve the disparity in the exchange relationship) and expressive (to vent one’s anger). These motivations can be neutralized by a number of constraints, including internalization of norms, bonds to a social system, and the potential for formal and internal sanctions. Collectivism should foster two of these constraints given that collectivist members are more likely to internalize the norms of the group and possess strong bonds to the social system (Ho & Chiu, 1994; Oyserman et al., 2002; Triandis, 1989, 1995). Although we are not aware of any studies linking collectivism to the counterproductive behaviors of individual group members, we predicted the following:

Hypothesis 3: Psychological collectivism will be negatively related to supervisor ratings of group member counterproductive behavior.

Withdrawal Behavior

Some forms of withdrawal are found within taxonomies of counterproductive behavior, including poor attendance, tardiness, and the withholding of effort (Robinson & Bennett, 1997; Sackett & DeVore, 2001). We separated the two constructs in this study, however, as withdrawal behaviors are more passive responses relative to actions like sabotage, intentional breaking of group rules, and verbal abuse of group members. Most models of withdrawal view the psychological and physical disengagement from work as a response to dissatisfaction (Hulin, 1991; Johns, 2001). Although past research has linked collectivism to respondent satisfaction in student project groups (Shaw et al., 2000), researchers have argued that satisfaction alone is incapable of explaining a large portion of variance in withdrawal (Johns, 2001). Such behaviors also depend on contextual variables like job embeddedness, which is characterized by strong ties to other members in a group’s social network (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). Collectivists form stronger bonds with in-group members and are more likely to make sacrifices for the good of the group (Ho & Chiu, 1994; Oyserman et al., 2002; Triandis, 1995), making withdrawal less likely. Although we are not aware of any studies linking collectivism to the withdrawal of individual group members, we hypothesized the following:

Hypothesis 4: Psychological collectivism will be negatively related to supervisor ratings of group member withdrawal behavior.

Method

Sample

Study 3 participants were 186 full-time employees of a computer software firm. The organization is a supplier and developer of software systems based in the southwest United States. The company splits its workforce into groups on the basis of clients or regions served. The sample consisted of programmers, software support, and client support, with all jobs being fairly technical in nature. In all cases, participants worked in groups that were highly interdependent, requiring cooperation to meet the specific needs of their clients. Participants were 71% male and averaged 31.54 years of age and 3.35 years with the organization. Listwise deletion of missing data resulted in a usable sample of 178 participants.

Procedure

All measures were assessed through the use of an Internet-based survey. A total of 262 usable e-mail addresses were obtained from the participating organization. These e-mails contained an offer to participate in the study, which could be accessed by following an Internet link within the e-mail. A total of 186 of the employees chose to participate, resulting in a response rate of 71%. Participants’ supervisors were also asked to fill out a survey assessing job performance in the context of work group tasks. In all cases, the supervisor who filled out this survey was the same person who performed the employee’s formal performance appraisal (though it was stressed that these rankings did not feed into that system in any way). Of the 186 participants, complete supervisor data were obtained for 128, a response rate of 69%.

Measures

All measures were assessed using a 5-point Likert scale with anchors of 1 (strongly disagree) and 5 (strongly agree).

Task performance. Supervisors rated their employees using the 7-item scale developed by Williams and Anderson (1991), with the wording changed to reflect work group duties and responsibilities. Supervisors were asked, “How much do you agree with the following statements: This employee _____,” with sample items including “adequately completes assigned work group duties,” “fulfills responsibilities specified by his/her work group,” “meets formal requirements of the work group,” and “fails to perform essential duties for the work group” (reverse scored).

Citizenship behavior. Supervisors rated their employees using the 16-item measure created by Lee and Allen (2002), with the wording changed to reflect work-group-directed citizenship. Sample items included “willingly gives time to help other group members who have work-related problems.” “shows genuine concern and courtesy toward other group members, even under the most trying business or personal situations.” “attends functions that are not required but that help the work group’s image.” “defends the work group when other employees criticize it,” and “offers ideas to improve the functioning of the work group.”

Counterproductive behavior. Supervisors rated their employees using the nine-item scale developed by Robinson and O’Leary-Kelly (1998), with the wording changed to assess work-group-directed counterproductive behaviors. Supervisors were asked, “Within the last year, how often has this person _____?” Sample items included “said or did something to
purposely hurt a work group member,” “damaged property being used by
the work group,” (deliberately bent or broke a group rule(s),” and “said
rude things about work group members.”

Withdrawal behavior. Supervisors also rated their employees with 10
items developed by Lehman and Simpson (1992). The item wording was
again changed to reflect the work group context and was also altered to
allow for supervisor-reported rather than self-reported data. Supervisors
were asked, “Within the last year, how often has this person _______?”
Sample items included “been absent from work group activities,” “left
work early without permission,” “seemed to be daydreaming rather than
working,” “spent time on personal matters rather than group duties,” and
“talked about leaving current job or work group.”

Psychological collectivism. The measure shown in Table 2 was again
used.

Triandis collectivism. As in Study 2, the scale used by Triandis and
Gelfand (1998) and Gelfand and Realo (1999), adapted from Singelis et al.
(1995), was used.

Big Five. We measured these personality dimensions using the Big
Five Inventory (John, Donahue, & Kentle, 1991). Sample items included “I
persevere until the task is finished” (Conscientiousness, 9 items), “I am
helpful and unselfish with others” (Agreeableness, 9 items), “I am some-
times depressed or blue” (Neuroticism, 8 items), “I have an active imag-
ination” (Openness to Experience, 10 items), and “I am outgoing and
socialize” (Extraversion, 8 items).

Results and Discussion

Cross-Validation of Factor Structure

We conducted another second-order confirmatory factor analy-
sis to provide further cross-validation of the measure in Table 2. The
fit of the model was again strong: $\chi^2(85, N = 124) = 148.06,
p < .001; \chi^2/df = 1.74; IFI = .95; CFI = .95; RMSEA = .06.
Each of the collectivism items loaded highly on its intended factor,
with loadings ranging from .59 to .97. Moreover, the five collectiv-
ism facets loaded significantly on the general factor: .53 for
preference, .50 for reliance, .61 for concern, .52 for norm accep-
tance, and .34 for goal priority. Nine of the 10 interfacet correla-
tions were statistically significant, with the exception being prefer-
ence and goal priority. The measure again possessed strong
reliability, whether used as an overall scale ($\alpha = .82$) or as five,
more specific facets. Facet-level reliabilities were as follows: .89
for preference, .79 for reliance, .84 for concern, .82 for norm
acceptance, and .83 for goal priority.

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Note. $N = 124$.

*p < .05, one-tailed.
of the proportionate contribution each predictor makes to total variance explained. A recent review suggested that dominance analysis and the epsilon statistic are the two preferred methods for judging the relative importance of correlated predictors (LeBreton, Ployhart, & Ladd, 2004).

The results in Table 5 reveal that the five facets explain about 35% more variance in the outcomes than the higher order factor. Each of the five facets significantly contributes to at least one of the outcomes. Preference is relatively important in predicting task performance, whereas reliance and concern contribute to the prediction of citizenship. Norm acceptance is important to the prediction of counterproductive behavior and, to a lesser extent, withdrawal. Finally, goal priority has a high degree of importance for two outcomes: task performance and withdrawal behavior. These results illustrate that all five collectivism facets contributed to the predictive validity of the psychological collectivism factor.

We also compared the predictive validity of our collectivism measure with that of the Triandis scale. Triandis collectivism was significantly correlated with member task performance ($r = .16$) but was not correlated with the other three outcomes (see Table 4). We compared the predictive validity levels using a usefulness analysis, in which the incremental variance explained by each measure was compared using two separate regressions. As shown in Table 6, scores on our collectivism measure explained incremental variance in all four outcomes after controlling for scores on the Triandis measure, with $R^2$ values ranging from .03 to .08. In contrast, scores on the Triandis measure failed to explain incremental variance.

Although we included the Big Five in Study 3 primarily to gauge the discriminant validity of our collectivism measure, we felt it would be worthwhile to compare the predictive validity of psychological collectivism with that of the Big Five. Table 7 summarizes the effects of collectivism and the Big Five in combination. The results reveal that collectivism has the highest relative importance of the predictors, regardless of whether standardized regression coefficients, dominance analysis, or the epsilon statistic are used to assess importance levels.

### General Discussion

The three studies described in this article point to a number of strengths for our psychological collectivism measure. The measure

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<th>Table 5</th>
<th>Relationships Between Psychological Collectivism and Group Member Performance</th>
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Note. $N = 124$. * $p < .05$.

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Note. $N = 124$. † $p < .10$. * $p < .05$. 
Table 7
Psychological Collectivism and the Big Five in Combination

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<th>Member citizenship behavior</th>
<th>Member counterproductive behavior</th>
<th>Member withdrawal behavior</th>
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<td>$D$</td>
<td>$e$</td>
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<td>.31*</td>
<td>76.2</td>
<td>76.2</td>
<td>.19*</td>
</tr>
</tbody>
</table>

Note. $N = 124$.
† $p < .10$, * $p < .05$.

is focused solely on work groups as the in-group, making it more relevant to applied research in the organizational sciences. The measure was carefully constructed around the most frequently discussed facets of the collective construct, as described in key reviews of the literature (Ho & Chiu, 1994; Oyserman et al., 2002; Triandis, 1989, 1995, 1996; Triandis & Bhawuk, 1997). The second-order structure of the collectivism measure allowed us to balance bandwidth and fidelity by capturing the broad spectrum of collectivism facets while measuring each one in an internally consistent fashion. This is in contrast to previous collectivism scales, which tended to sample from widely different domains that did not always seem to be tapping the same construct.

Taken together, three samples totaling 552 group members supported the construct validity of our new measure on a number of fronts. The measure was shown to be reliable at both the overall scale level and the facet level, in contrast to other scales, whose reliability sometimes falls below the .70 standard. In addition, the 15 items seemed to be valid indicators of the five facets, and the five facets seemed to be valid indicators of the higher order factor (as evidenced by the significant second-order loadings and the significant interfacet correlations). Convergent validity was supported in the form of high correlations with representatives of all three major scale families (Earley, 1993; Triandis & Gelfand, 1998; Wagner & Moehl, 1986). Discriminant validity was supported by separating psychological collectivism from a measure of the Big Five.

The creation of a construct valid measure of collectivism allowed us to test a key substantive question: Do collective group members tend to be better performing group members? Study 3 provides some preliminary support for that question, as scores on psychological collectivism were associated with supervisor ratings of four separate dimensions of group member performance. Collective members performed their group tasks better, contributed more discretionary citizenship, and were less likely to engage in counterproductive or withdrawal behaviors. These results add to a small body of research that supports the performance benefits of collectivism with respect to individual group members (Moorman & Blakely, 1995; Shaw et al., 2000; Van Dyne et al., 2000).

Our facet-level analyses shed further light on the performance implications of collectivism. Oyserman et al. (2002) suggested that facet-level analyses of collectivism could bring more theoretical clarity to the literature by isolating the “active ingredients” in a given relationship (p. 41). In other words, the facets can help explain how and why collectivism predicts each of the outcomes. Our results showed that each of the facets served as an “active ingredient” for at least one performance dimension, with preference explaining task performance effects, reliance and concern facets explaining citizenship effects, norm acceptance explaining counterproductive and withdrawal effects, and goal priority explaining relationships with task performance and withdrawal.

The contributions above should be interpreted in light of this article’s limitations. Our collectivism scale used self-report data from a common source. This limitation creates the possibility that the higher order factor observed in our confirmatory factor analysis results was (at least partially) an artifact of common method variance. Parker (1999) illustrated how common method variance can inflate the influence of a higher order factor in his examination of the hierarchical model of psychological climate. A more stringent test of whether a psychological collectivism factor underlies the five facets in our measure would require either multiple sources (e.g., peers, significant others) or multiple methods (e.g., interview, projective test). These steps would allow the model in Figure 1 to be tested in a multitrait–multimethod fashion. In addition, we should note that the adequate reliability found for our measure may be a function of the semantic similarities of the items within each facet. However, it should be pointed out that the reliability may also be a function of the significant correlations found between the five facets, in contrast to other scales that have used facets that are generally uncorrelated in empirical tests. Moreover, we should note that the withdrawal behavior measure used in Study 3 exhibited poor reliability. Lehman and Simpson’s (1992) withdrawal items were intended to be self-report in nature, and it may be that supervisors are unable to reliably evaluate subtle behaviors like moonlighting, pretending to be busy, or discussing nonwork topics.

A final limitation of our study concerns the assessment of our measure’s predictive validity. Specifically, we chose to pit our measure against the Triandis and Gelfand (1998) measure, which is meant to be used in more diverse settings and is more general in nature than our measure. Researchers generally agree that matching the specificity or breadth of predictors and criteria enhances validity (Hogan & Roberts, 1996; Schneider, Hough, & Dunnette, 1996). The breadth of the Triandis and Gelfand (1998) measure may have hindered its ability to predict the specific dimensions of group member job performance assessed in our study. As such, the deck may have been stacked in favor of our more narrowly focused
measures, which was developed with work contexts in mind. It may be that scales from the Triandis family will be more significant predictors of nonwork outcomes than our scale, because the Triandis items are more rooted in family, friend, and personal contexts. Thus, although the work-focused nature of our scale may prove to be an advantage in predicting job attitudes and behaviors, other scales may be more predictive of outcomes rooted in other life domains.

Despite these limitations, our results suggest some avenues for future research. First and foremost, research is needed to further refine the measure introduced in this article, given that scale development is always an iterative process. Future studies should assess convergent validity with other collectivism scales, discriminant validity with other individual differences, and predictive validity with other outcomes. With respect to the latter, we would particularly encourage researchers to begin connecting scores on our scale to some of the other commonly examined collectivism outcomes, such as conflict resolution styles, communication styles, and reward preferences (Earley & Gibson, 1998). Future research should also continue to test the boundary conditions for collectivism effects. Shaw et al. (2000) showed that collectivism effects became less positive as task interdependence decreased. We suspect that the predictive validity of our scale would decline if the context changed from the highly interdependent groups in our samples to the more casual work groups used in some organizations. A number of other variables could help capture such contextual boundaries, including group life span and member proximity.

Finally, given that the five facets were differentially related to the performance outcomes, an interesting avenue for future research would be to explore the theoretical underpinnings of these facets. For example, Akers’s (1973) social learning approach to deviant behaviors, which identifies key mechanisms that should increase or decrease the likelihood of deviance, is one theoretical framework that would be particularly helpful in explaining the relationships found between the norm acceptance facet and counterproductive and withdrawal behaviors. Possible intervening mechanisms for these relationships include collectivists’ imitation of group members’ behavior as a means to comply with group norms and the value that collectivists place on complying with these norms. Social exchange theory (Blau, 1964), on the other hand, would be useful in understanding the relationships between the concern and reliance facets and citizenship. Specifically, the nature of the exchange relationship that collectivists have with their group could serve as an intervening mechanism of the facet-level relationships. From a social exchange theory perspective, collectivists’ concern for and reliance on group members should foster a social exchange relationship, which in turn has been argued to encourage more prosocial discretionary behaviors.

Our results also offer important practical implications. Given the linkage between psychological collectivism and group member performance, organizations should strive to maximize collectivism using selection and placement or employee development systems. In jobs where cooperation is vital, psychological collectivism could be assessed during employment interviews or personality tests. Such personality scores, which are routinely stored in the employee profiles of many human resource software systems, could also be used for placement decisions when staffing work groups. Alternatively, employee development programs could target psychological collectivism when necessary. Whereas typical development programs may be geared toward teaching task strategies that mimic high levels of conscientiousness or agreeableness, other programs could be used to teach collective strategies. Such programs could also be incorporated into the team-building programs routinely used to indoctrinate new group members.

References

Earley, P. C. (1994). Self or group? Cultural effects of training on self-


Pearce, J. L., & Gregersen, H. B. (1991). Task interdependence and


(Appendices follow)
## Appendix A

### The Triandis Family of Collectivism Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>In-groups</th>
<th>Dimension labels</th>
<th>Dimension sample items</th>
</tr>
</thead>
</table>
| Hui (1988): 63 items (82 citations last 5 years) | Coworkers
Friends
Spouse
Parents
Kin | 1. Consideration of implications of one’s own actions for others | 1. The decision of where one is to work should be jointly made with one’s spouse, if one is married. |
|         |           | 2. Sharing of material resources | 2. I would help if a colleague at work told me that he/she needed money to pay utility bills. |
|         |           | 3. Sharing of nonmaterial resources | 3. One needs to return a favor if a colleague lends a helping hand. |
|         |           | 5. Self-presentation and face-work | 5. Each family has its own problems unique to itself. It does not help to tell relatives about one’s problems. |
|         |           | 6. Sharing of outcomes | 6. The motto “sharing is both blessing and calamity” is still applicable even if one’s friend is clumsy, dumb, and causes a lot of trouble. |
|         |           | 7. Feeling of involvement in others’ lives | 7. There is everything to gain and nothing to lose for classmates to group themselves for study and discussion. |
| Triandis et al. (1986, 1988, 1990): 17–29 items (347 citations last 5 years) | None
Coworker
Friend
Family
Spouse
Parent
Kin
Nationality | 1. Concern for in-group | 1. When my colleagues tell me personal things about themselves, we are drawn closer together. |
|         |           | 2. Interdependence | 2. I would help within my means, if a relative told me that s/he is in financial difficulty. |
|         |           | 3. Family integrity | 3. One should live independently of others as much as possible. (R) |
|         |           | 4. Self-reliance (R) | 4. One does better working alone than in a group. (R) |
|         |           | 5. Distance from in-groups (R) | 5. My happiness is unrelated to the well-being of my coworkers. (R) |
| Singelis et al. (1995); Triandis & Gelfand (1998); Gelfand & Realo (1999): 8–16 items (214 citations last 5 years) | Work
group
Coworkers
Friends
Neighbors
Relatives | 1. Horizontal collectivism (includes concern for in-group, distance from in-group, interdependence, sociability) | 1. The well-being of my co-workers is important to me. I feel good when I cooperate with others. To me, pleasure is spending time with others. |
|         |           | 2. Vertical collectivism (includes concern for in-group, family integrity) | 2. It is important to me that I respect the decisions made by my groups. Parents and children must stay together as much as possible. Family members should stick together, no matter what sacrifices are required. |

*Note.* R = reverse scored.
## Appendix B

The Earley and Wagner Families of Collectivism Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>In-group</th>
<th>Dimension labels</th>
<th>Dimension sample items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erez &amp; Earley (1987): 4 items (27 citations last 5 years)</td>
<td>Work group Family</td>
<td>Unidimensional</td>
<td>Only those who depend on themselves get ahead in life. (R) One should live life independent of others as much as possible. (R) Working with a group is better than working alone. In society, people are born into extended families or clans who protect them in shared necessity for loyalty.</td>
</tr>
<tr>
<td>Earley (1993): 8 items (72 citations last 5 years)</td>
<td>None Work group Friends</td>
<td>Unidimensional</td>
<td>One does better work working alone than in a group. (R) If a group is slowing me down, it is better to work alone. (R) Problem solving by groups gives better results than problem solving by individuals. An employee should accept the group’s decision even when personally he or she has a different opinion.</td>
</tr>
<tr>
<td>Wagner &amp; Moch (1986): 11 items (24 citations last 5 years)</td>
<td>Work group</td>
<td>1. Beliefs</td>
<td>1. My work group is more productive when its members follow their own interests and concerns. (R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Values</td>
<td>2. I prefer to work with others in my work group rather than to work alone.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Norms</td>
<td>3. People in my group should recognize that they are not always going to get what they want.</td>
</tr>
<tr>
<td>Wagner (1995): 20 items (72 citations last 5 years)</td>
<td>Work group</td>
<td>1. Self-reliance (R)</td>
<td>1. Only those who depend upon themselves get ahead in life. (R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Competitive success (R)</td>
<td>2. Winning is everything. (R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Value attached to working alone rather than in a group (R)</td>
<td>3. Working with a group is better than working alone.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Subordination of personal needs to group interests</td>
<td>4. People in a group should realize that they sometimes are going to have to make sacrifices for the sake of the group as a whole.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Effects of personal pursuits on group productivity</td>
<td>5. A group is more productive when its members do what they want to do rather than what the group wants them to do. (R)</td>
</tr>
</tbody>
</table>

*Note.*  
R = reverse scored.

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