Personal Values and Performance in Teams: An Individual and Team-Level Analysis

SAGE

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Abstract

Two studies involving 107 undergraduate and 54 MBA teams were conducted to examine the effects of personal values on the performance of individual team members and on the performance of the team as a whole. Values with clear relevance to teams and to work were selected for the studies. To capture the relative importance of these values, they were measured within the context of a broader set of personal values. At the individual level, the importance students ascribed a sense of accomplishment had a significant, but unexpected negative, relationship with individual peer-evaluated performance. Students' prior performance outside their teams had a stronger positive relationship with in-team performance than did their personal values. At the team level, the average importance team members assigned the value of equality had a positive relationship with team performance. The average level of students' prior performance was also related to team performance, but the average importance given to the value equality was a stronger predictor of this fundamental team outcome. Implications of these results and directions for future research are discussed.

Keywords

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One enduring quest for team researchers as well as for practitioners is to find answers to the question, "What makes a good team player?" (e.g., Driskell, Goodwin, Salas, & O'Shea, 2006). The search for desirable team member characteristics is consistent with models of team effectiveness that focus on team inputs, outcomes, and factors that mediate the effects of inputs on outcomes (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). It also follows from the general expectation that team composition will influence important team processes and outcomes (Bell, 2007). Studies, however, in which visible or surface-level demographic characteristics have been used to operationalize team composition have often failed to reveal these expected effects (Webber & Donahue, 2001). Such results have prompted calls for research that uses deep-level composition variables, such as cognitive ability, attitudes, and personality traits, to predict team outcomes (e.g., Boone, Van Olffen, & Van Witteloostuijn, 2005). The research presented in this article answers that call by focusing on a central, but underlying, characteristic of team members: their personal values.

Personal values have long been considered important antecedents of behavior. Values are "guiding principles in the life of a person or other social entity" (Schwartz, 1994, p. 21). As relatively stable standards, values influence conduct by channeling, evaluating, and justifying other beliefs, attitudes, and actions (Rokeach, 1973). Understanding the influence of personal values in the context of work teams is important because values are potentially useful predictors of individual and team performance (Bell, 2007). Despite the widely shared belief that a relationship between personal values and performance in teams does exist, very few empirical investigations of this relationship have been conducted (Harrison, Price, Gavin, & Florey, 2002).

The purpose of this article is to address this gap in the research by exploring two basic questions: First, are personal values directly related to the performance of individual team members? And second, are personal values related to the performance of the team itself? Answers to these questions will depend heavily on at least four issues: (a) which of numerous personal values are considered, (b) how these values are measured, (c) what configuration these values take in the hypotheses to be tested, and (d) what other variables are measured and tested concurrently. The approach taken here is to examine personal values that have clear relevance to work performed in teams. In addition, the critical procedure of measuring these values within the context of a larger set of personal values is followed, and the direct effects of these values on individual and team performance are tested. One additional variable—the individual performance of team members outside their teams—is used to evaluate the relative predictive strength of personal values. Taken in combination, these parameters make the

current investigation unique among the relatively limited prior research in this area and will help extend our understanding of personal values in teams.

In the next section, a brief review of past research on personal values is given. Following this review, the rationale for focusing on certain personal values in teams, for measuring them in the context of other values, and for predicting their direct effects on individual and team performance is explained. Two studies designed to examine these effects and the comparative influence of team members' prior performance are then described, and the results of these studies are presented. Last, these results and corresponding implications for future research and practice are discussed.

Personal Values

The literature on personal values reflects four general approaches. The first approach is a search for a complete and unified set of human values. Rokeach's (1973) work is clearly some of the most influential in this genre, and nearly all subsequent values researchers reference Rokeach in their conceptual treatment of values. One of Rokeach's central contributions is his definition of values: "A *value* [italics added] is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p. 5). In addition, Rokeach defines a *value system* as "an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance" (p. 5). Value systems, composed of relative orderings of specific values, are considered to be relatively stable over time, although they are not permanent. The concept of value systems is paramount to this approach as values independent of their place within a system are considered to be meaningless. Other scholars following this line of inquiry have developed different sets of values (e.g., Schwartz, 1992), but the concept of value systems remains at the forefront of their efforts.

A second approach to the study of personal values is closely tied to research on person–organization fit. In this approach, values are considered individual characteristics that match to some degree the values inherent in a person's work environment. Chatman (1989) defines person–organization fit as "the congruence between the norms and values of organizations and the values of persons" (p. 339). Here the emphasis is no longer on identifying a comprehensive set of values, nor on the relative importance of values within a system, but on the match between values held by a person and those associated with their vocation, job, or organization.

A third approach to studying values is an examination of differences in values across national cultures. The most well-cited research of this type is the work of Geert Hofstede (1980), although the study of cross-cultural values has evolved substantially and still holds much current interest (Sagie, Kantor, Elizur, & Barhoum, 2005). Efforts in this regard often emphasize patterns of values and preferences, such as shared orientations toward time, uncertainty, and goals, within national or ethnic boundaries. This third approach is distinct from the first two as the focus is primarily on values at the societal level of analysis.

A fourth approach to personal values research is to study work values. In past research, the term *work values* has taken on a number of meanings, from business ethics to work preferences (Dose, 1997). In the context of the research presented here, the most pertinent work values are the preferences individuals have for behaviors and outcomes that ought to exist in work settings, not the importance individuals assign different types of work, work environments, or working itself (e.g., Protestant work ethic). The key advantage of this approach is the explicit attention given to the work context. Personal values identified in the other three approaches may be applied to the work setting, but usually this setting is addressed only indirectly. Several attempts have been made to identify values that are of specific relevance to managers and employees in work environments (e.g., Cornelius, Ullman, Meglino, Czajka, & McNeely, 1985; England, 1967; Guth & Tagiuri, 1965; McDonald & Gandz, 1991), but no consensus exists on the values that researchers feel are important in organizations (Meglino & Ravlin, 1998). The identification of a universally accepted set of values related to teams is also unlikely, but certain values can be argued to have particular relevance in team settings. Attention is now turned to the selection, measurement, and predicted effects of these values.

Values in Work Teams

In past research, the values chosen for study within teams have been drawn variously from each of the different approaches described above. For example, some researchers have examined values drawn from broad value systems (Fisher, Macrosson, & Yusuff, 1996), whereas others have based their research on national culture values (Drach-Zahavy, 2004; Schaubroeck, Cha, & Lam, 2007). Work team environments are related to a variety of values, but it is likely that certain values will be more salient in team contexts and during the execution of team tasks than others (Dose, 1999). Moreover, there should be a logical correspondence between the values that are

selected and the situation under investigation (Meglino & Ravlin, 1998). For these reasons, a focus on work values rather than on national values or cultural values seems appropriate when studying values in work teams.

One of the more parsimonious work values frameworks comes from Cornelius et al. (1985) who used a critical incident technique to investigate the work values of 966 employees at different levels in a variety of different types of organizations. Refinements of this work (Meglino, Ravlin & Adkins, 1989; Ravlin & Meglino, 1987) led to the conclusion that achievement, fairness, helping and concern for others, and honesty were the four most important work values. These four values have particular relevance in team settings. The value of achievement, which reflects a willingness to work hard and accomplish goals, is beneficial for all employees, but especially so for team members who are dependent on one another for the completion of their work. The value of fairness, which includes impartiality and equal treatment among coworkers, is especially important for well-functioning social units such as teams. Valuing helping and concern for others is also likely to improve team processes because assisting team members in need not only strengthens the social fabric of the team but also potentially improves performance. Last, valuing honesty is crucial to the establishment of trusting relationships among team members.

The manner in which personal values are measured is another fundamental concern in values research. Substantial limitations arise from measuring values one at a time, or independent of each other, as is the case when values are rated on Likert scales. Such an approach leads to at least three disadvantages: (a) a piecemeal accumulation of information about values, (b) the omission of values that may have equal or greater importance than the ones measured, and (c) a violation of the principle that behavior is not influenced by the importance assigned to a single value but by trade-offs among competing values that may also potentially influence the behavior (Rokeach, 1973; Schwartz, 1996). A superior approach is to assess values within a broader value system (i.e., the arrangement of a larger set of values according to their relative importance). The measurement of value systems captures integrated information about values, including the comparative priority assigned other, perhaps conflicting, values. Meglino et al. (1989) recommended measuring the importance of each of the four work values described above relative to the other three, but understanding the priority of these values within a much larger set of values is necessary to capture the advantages of measurement within a value system.

Rokeach's (1973) work resulted in one of the most commonly referenced value systems in the personal values literature (Olver & Mooradian, 2003). This system includes 18 terminal values that reflect different preferred end

states of existence (e.g., freedom, self-respect, happiness) and 18 instrumental values that indicate different desired modes of conduct (e.g., polite, courageous, broad-minded). A person's value system is revealed when these values are organized according the degree to which each acts as a guiding principle in his or her life. The Rokeach value system is not designed specifically to reflect work values, but a close examination suggests a strong correspondence between four values it does include and the four work values discussed above (i.e., achievement, fairness, helping and concern for others, and honesty). Specifically, the Rokeach (1973) value *a sense of accomplishment* is not identical, but is closely related to, the work value achievement; *equality* is a familiar form of fairness; *helpful* matches helping and concern for others; and *honest* is virtually the same as honesty. Combining the research of Meglino et al. (1989) with the work of Rokeach (1973) results in a set of four personal values that are closely related to those found to have particular relevance in work settings, and a way of measuring them within a well-established value system.

Now that specific personal values have been selected and an effective way of measuring them identified, attention must turn to deciding what configuration these values should take as independent variables and what effects they are expected to have. In an extensive review of research on personal values in organizations, Meglino and Ravlin (1998) indicate that value congruence (i.e., the similarity or fit of values among pertinent value holders) is a more common configuration of values as independent variables than are individual values themselves. Treating an individual value as an independent variable is different from measuring that value in outside a value system. Once the relative importance of that value is captured by measuring it within a value system, that value can be used to predict other variables. Similarly, in most of the existing research on values in teams, value congruence is the chosen configuration (e.g., DeRue & Morgeson, 2007; Werbel & Johnson, 2001). Of particular note, in one of the very few studies to assess the four work values described above within teams (Adkins, Ravlin, & Meglino, 1996), value congruence was shown to have a positive effect on team members' satisfaction, attendance, and performance.

The disadvantage of relying on congruence as the sole configuration of values in teams is that the content of the values themselves (i.e., what is actually valued) is given secondary consideration in favor of the degree of similarity among team members. Values, however, can have a direct impact on team members by prompting them to act in a fashion consistent with their values (Rokeach, 1973). In the research presented here, the direct effects of team members' values are of interest because the content of the

values (e.g., a sense of accomplishment, equality) rather than the similarity of these values among team members is what is predicted to have the primary influence on behavior. Disagreement exists regarding how personal values directly guide behavior, but numerous empirical studies in nonteam environments have documented clear links between values and action (Bardi & Schwartz, 2003). Even so, predicting single behaviors from individual values is extremely difficult (Schwartz, 1996). This challenge arises because one value may translate into a variety of different behaviors. Conversely, one behavior may be an expression of multiple values.

Two factors are expected to strengthen the direct effects of values on behaviors in teams. First, in situations characterized by uncertainty, such as those often experienced by teams in their early stages of development, "people will find opportunities, within the context of their duties, to apply their dominant values" (Ravlin & Meglino, 1987, p. 672). Second, the effects of personal values are most discernible when they are used to predict sets of behaviors within one content domain (Bardi & Schwartz, 2003). Although a variety of behaviors occurs within teams, the interdependent nature of teamwork, the shared responsibility team members have for outcomes, and the collective rewards team members often receive help create a common thread to link them together.

The behaviors of greatest interest in the present research are individual performance behaviors—actions that help the team complete its tasks. As explained above, specific behaviors cannot be predicted, but the work values selected for study here are expected to influence behaviors characterized by accomplishment, equality, helpfulness, and honesty. Such behaviors belong to a broad category of actions that help the team advance its objectives. However, individual behaviors within teams are often difficult to discern and evaluate, especially when the team's task is not easily divisible and when appraisers are not present during the team's work activities. Nonetheless, individual behaviors within teams are critical to effective team functioning. To increase access to these behaviors many organizations have implemented multirater systems that gather assessments from coworkers and subordinates to supplement traditional evaluations from supervisors (Bracken, Timmreck, & Church, 2001). Team members have a unique vantage point from which to observe each other and may be able to providing useful reports of their teammates' performance behaviors. Although performance evaluations from different sources are not identical, some studies suggest they are comparable, especially the ratings from supervisor and peers (Conway & Huffcut, 1997; Facteau & Bartholomew, 2001).

To summarize thus far, four work values that are of particular relevance to teams and that can be measured within the context of a broader value system have been selected: a sense of accomplishment, equality, helpful, and honest. The direct effects of these values on team members' performance behaviors are of interest. Team members who hold these values are expected to engage in behaviors that will help advance the objectives of the team, and this will result in positive evaluations of their performance by their teammates. Thus, the following hypothesis is offered:

> *Hypothesis 1:* The importance team members assign personal work values will be positively related to their performance in the team.

Behaviors in teams are driven by a variety of other factors in addition to personal values, such as knowledge, skills, ability, and motivation. It is a well-established empirical finding that past performance is a valid predictor of future performance on similar tasks (Schmidt & Hunter, 1998). However, tasks performed by individuals outside of a team are different from those performed within a team. Even if the tasks performed in the two settings are similar, the way they may be approached and completed is likely to differ. There are, however, certain factors that have been shown to influence individual performance across different tasks. Within-person, cross-task studies have identified personal characteristics such as cognitive ability (LePine, Colquitt, & Erez, 2000), general self-efficacy (Chen, Gully, & Eden, 2001), and intrinsic motivation (Enzel, Wright, & Redondo, 1996) that have similar effects on a person's performance in multiple tasks. These characteristics can be expected to have similar effects on the performance of a person completing tasks inside and outside of a team. Hypothesis 1 predicts that team members who hold certain personal values are likely to behave in ways (e.g., helpful, honest) that teammates will evaluate positively. The hypothesis proposed now suggests that inherent in team members' prior performance are factors that will migrate with them and result in a similar level of performance in the team setting. The difference in this hypothesis is the expectation that team members will evaluate behaviors stemming from these general performance characteristics rather than behaviors resulting from personal values.

> *Hypothesis 2:* Team members' prior performance outside the team will be positively related to their performance in the team.

Given that team members' evaluations of each other may be based on behaviors arising from personal values and/or on behaviors arising from

general performance factors, the next question to be addressed is "Which of the two predictors is stronger?" As mentioned earlier, a particular value may influence a variety of different behaviors and a particular behavior may be an expression of multiple values. To complicate matters, the way one team member expresses a specific value may be different from the way another team member expects that value to be expressed. Thus, the correspondence between team members' values and the evaluation of other team members' performance behaviors may be substantially constrained.

General performance factors (e.g., cognitive ability, general self-efficacy) may also translate into a variety of behaviors, but these behaviors may be more familiar to other team members who have worked on similar tasks than value-driven behaviors would be to a team member who holds different values. Given these possibilities, and the much larger body of evidence that prior performance predicts future performance (Schmidt & Hunter, 1998), it is anticipated that team members' prior performance outside the team will be a stronger predictor than personal values of performance in the team.

> *Hypothesis 3:* Team members' prior performance outside the team will have a stronger positive relationship with their performance in the team than will the importance they assign personal values.

These three hypotheses are also of interest at the team level of analysis. In studies based on team composition models, individual attributes such as cognitive ability and motivation are often combined to form team-level characteristics, and these in turn are used to predict team outcomes (e.g., Tziner & Eden, 1985). This approach is based on the expectation that individual characteristics that influence outcomes at the individual level of analysis, taken collectively across team members, will have similar effects at the team level. Following this general approach, much of the same reasoning that led to the individual-level predictions already given applies to the team-level predictions now set for, except that certain adjustments are made to frame the variables at the team level. For example, the four work values examined at the individual level are still expected to have direct effects on performance. At the team level, however, the importance assigned the four work values must be considered across all members of a team simultaneously (e.g., by calculating the average level of importance in the team). Moreover, team performance is measured by assessing how effective the team as a whole is in reaching its objectives. Positive individual performance behaviors are still expected to occur as a result of holding these values and these individual behaviors in turn are expected to influence the

team's internal processes. Explaining and testing the links to these processes (e.g., conflict, communication, leadership) and how they ultimately affect a team's performance is beyond the scope of the present research. Only the team's performance is considered here. In short, the relationship between personal values and performance at the team level is expected to be similar to the relationship presented at the individual level.

> *Hypothesis 4:* The average importance team members assign personal values will be positively related to team performance.

As explained earlier, general performance characteristics (e.g., cognitive ability, general self-efficacy, motivation) are presumed to underlie individual team members' prior performance outside their team as well as their performance within their team. The average level of team members' prior performance represents the team's reserve of these general performance characteristics, and a greater reserve is expected to have a more positive impact on team performance. Moreover, because the characteristics underlying prior performance can be classified as task oriented (but not task specific), the behaviors they prompt are anticipated to correspond more closely to team performance than the value-driven behaviors discussed in relation to Hypothesis 3. For these reasons, and given the limitation of predicting only general behaviors from specific values (as discussed previously) team members' prior performance is anticipated to be a stronger predictor than values of team performance.

> *Hypothesis 5:* Team members' average prior performance outside the team will be positively related to team performance.
> *Hypothesis 6:* Team members' average prior performance outside the team will have a stronger relationship with team performance than will the average importance team members assign personal values.

Method

Samples

Two studies were conducted to examine the hypothesized relationships between personal values, prior performance, and performance in a team. Study 1 included 428 (41.6% female, 58.4% male) junior and senior undergraduate students from multiple sections of an introductory organizational behavior course. As part of the course, students divided themselves into 4-person teams ($N = 107$) and remained in these teams for the duration of the semester.

Participants in Study 2 were 266 (37.6% female, 62.4% male) part-time MBA students from multiple sections of a graduate management course. The MBA students had an average age of 30.9 years (SD = 6.53) and an average full-time work experience of 6.9 years (SD = 5.52). As part of the MBA program, the instructor divided the students into teams of 4 to 6 members with the intent of making the teams heterogeneous along demographic characteristics (e.g., age, work experience, and undergraduate major). This resulted in a total of 54 teams in study 2 (7 four-person teams, 44 five-person teams, and 3 six-person teams). The MBA students would remain in these teams in all their courses for the following 15 months.

Measures

The Rokeach Values Survey (RVS, 1973) was used to measure the importance team members' accorded the values *a sense of accomplishment*, *equality*, *helpful*, and *honest* within their larger value systems. Students in both studies completed the RVS individually as part of the course early in the semester before teams were formed. The RVS has a long history and has been demonstrated to be a valid and reliable measurement instrument (Rokeach & Ball-Rokeach, 1989). As evidence of its robustness, the RVS, or some derivation of it, continues to be used in current research (e.g., Connor & Becker, 2003; Giacomino & Eaton, 2003; Hood, 2003; McGuire, Garavan, Saha, & O'Donnell, 2006; Murphy et al., 2006). The other independent variable, students' prior performance outside their team, was their average score on a series of objective multiple-choice quizzes on the course content taken throughout the semester.

Once the teams were created, students in both studies participated in multiple in-class exercises with their teammates over a series of weeks before completing an interdependent task in which team members had shared responsibility for outcomes and all received the same score. The team's score on the task was used to represent the dependent variable at the team level of analysis—team performance. As part of their course, teams in Study 1 (undergraduates) completed a detailed written analysis of an actual business scenario provided by the instructor (i.e., a business case). Teams were required to identify problems in the case, apply course principles to explain the antecedents and consequences of those problems, and offer recommendations to solve them. Teams met outside of class on their own time to complete the task. Teams in Study 2 (MBA students) also completed their task as part of their course. These teams prepared an extensive written critique of and plan for their own team. This task involved completing a detailed examination of the team's composition along multiple dimensions of personality,

identifying individual and team strengths and weaknesses, and formulating strategies for improving interactions within the team. These teams also met outside of class to complete this task. All team tasks in both studies were evaluated by the same instructor. Ad hoc feedback from students indicated that they found these tasks to be challenging and required extensive interaction in their teams.

The dependent variable at the individual level of analysis—individual performance within the team—was measured through peer evaluations of each student's performance on the team's task. At the completion of their team task, but before knowing their score, each team member was rated by every other member on four performance dimensions: (a) level of involvement, (b) helping the team function well, (c) quantity of contribution, and (d) value of contribution. Scores for these four dimensions were assessed on 7-point Likert-type scales (1 = *low*; 7 = *high*) and were combined to form an overall performance evaluation from each team member. These evaluations from team members were then averaged to arrive at the student's final individual performance score.

Results

Perhaps the most common issue addressed in the measurement of personal values has to do with the ranking versus the rating of values (McCarty & Shrum, 2000; Meglino & Ravlin, 1998). Often, these two methods of measuring values overlap. For instance, McGuire et al. (2006) changed the ranking format of the RVS to a 5-point Likert-type agreement scale for each value. In their own defense, they cite Finegan (2000) who argues that changing a rank-order task to a ratings task can be done without hurting the integrity of the scale. However, altering the RVS in this manner defeats the purpose of measuring values within a value system. One issue at the center of such matters is the appropriateness or inappropriateness of applying parametric statistical techniques to value rankings (which produce ordinal data) and to value ratings (which are treated as interval data).

In one review of the literature on this subject, Jaccard and Wan (1996) summarize, "For many statistical tests, rather severe departures (from intervalness) do not seem to affect Type I and Type II errors dramatically" (p. 4). Other researchers have also published evidence that correlation and other parametric coefficients are robust with respect to ordinal distortion (e.g., Binder, 1984; Kim, 1975; Labovitz, 1967, 1970; Zumbo & Zimmerman, 1993). Of most relevance in the current research are a set of Monte Carlo studies conducted by Joreskog and Sorbom (1988), which led to the conclusion that ordinal scales that have 15 or more orderings may be considered

continuous. Because the values in the RVS can be ranked from 1 to 18, they meet these criteria and are treated the same as the other interval data analyzed here.

Individual-Level Analyses

The means, standard deviations, and intercorrelations among the independent and dependent variables prior to their being standardized are reported in Tables 1 and 2. For the personal value variables, a lower mean indicates greater importance attached to the value. Performance in the team is significantly and positively correlated to prior performance in both studies. Three significant positive correlations exist among the personal values in Study 1 (honest with equality and helpful; equality with helpful) and two of these relationships are significant in Study 2 (helpful with equality and honest). Significant negative correlations exist between honest and a sense of accomplishment in Study 1 and helpful and prior performance in Study 2.

The data were analyzed using linear regression to test the hypothesized relationships. Prior to conducting these analyses, the independent variables were standardized to reduce potential multicollinearity. The results of the regression analyses are shown in Tables 3 and 4. The overall regression model in both studies is significant. However, in Study 1 (undergraduate students), prior performance is the only independent variable that displays a significant standardized beta coefficient. In Study 2 (MBA students), prior performance and one personal value—a sense of accomplishment—both display significant beta coefficients. The positive coefficient for a sense of accomplishment is unexpected and indicates that participants who more strongly valued a sense of accomplishment were less positively evaluated by their peers. Thus, Hypothesis 1, that personal values would have a positive influence on individual performance in teams, was not supported. Hypothesis 2, that prior performance would have a positive influence on performance in the team, was supported.

Because the independent variables are standardized, a comparison between significant standardized beta coefficients suggests the relative predictive strength of each variable. This comparison is only warranted if multicollinearity is not present. Collinearity statistics were calculated with the regression analyses. Variance inflation factor scores were all below 1.5 and tolerance scores were all above 0.90, indicating no evidence of multicollinearity. In Study 1, prior performance is the sole significant independent variable so a comparison cannot be made. In Study 2, the standardized beta coefficient for prior performance is greater in magnitude than the coefficient

Table 1. Descriptive Statistics: Undergraduate Students

Variable	M	SD	2	3	4	5	6
1. Performance in the team	24.36	3.78	.00	.04	−.06	.02	.25**
2. A sense of accomplishment	9.22	4.31	—	−.05	−.09	−.12*	.04
3. Equality	12.68	4.16		—	.21**	.14**	.04
4. Helpful	9.85	4.43			—	.15**	−.06
5. Honest	4.28	3.68				—	−.02
6. Prior performance	0.75	0.12					—

Note: Because of missing data for some variables, N varied from 380 to 428.
*p < .05. **p < .01.

Table 2. Descriptive Statistics: MBA Students

Variable	M	SD	2	3	4	5	6
1. Performance in the team	25.78	2.26	.12	−.01	−.01	−.12	.17**
2. A sense of accomplishment	8.03	4.05	—	.02	−.01	−.07	−.06
3. Equality	12.28	4.28		—	.20**	.05	−.11
4. Helpful	10.21	4.38			—	.15*	−.13*
5. Honest	4.32	3.79				—	−.01
6. Prior performance	0.84	0.09					—

Note: N = 266.
*p < .05. **p < .01.

for a sense of accomplishment, but the sign on the coefficient for a sense of accomplishment is in the unexpected direction. Thus, when a comparison could be made, Hypothesis 3, which predicted that prior performance would have a stronger positive impact on individual performance in the team than would personal values, received modest support.

Team-Level Analyses

One issue that has received much attention in relation to multilevel analysis is aggregation of individual data to the group level. A variety of statistical techniques exist to verify agreement within the group prior to aggregation (Dixon & Cunningham, 2006), and these are appropriate when agreement is a salient factor. However, agreement is not always relevant to the conceptual basis of study hypotheses. For instance, Eby and Dobbins (1997) did not use common measures of group similarity because they were testing directional hypotheses. Instead, they determined the percentage of members within teams that expressed a certain characteristic.

Table 3. Regression Analysis of Undergraduate Student Peer-Evaluated Performance in the Team on Values and Prior Performance

Variable	β	SE β	B	t
A sense of accomplishment	.02	.18	.01	0.13
Equality	.00	.19	.00	−0.02
Helpful	−.10	.18	−.03	−0.52
Honest	.30	.18	.09	1.64
Prior performance	1.00	.18	.28	5.51**

Note: β = unstandardized regression coefficient; SE β = standard error of β; B = standardized regression coefficient. Model summary: R^2 = .08; adjusted R^2 = .07; F = 6.49**; N = 370.
**$p < .01$.

Table 4. Regression Analysis of MBA Student Peer-Evaluated Performance in the Team on Values and Prior Performance

Variable	β	SE β	B	t
A sense of accomplishment	.28	.14	.12	2.06*
Equality	−.02	.14	−.01	−0.14
Helpful	.04	.14	.02	0.29
Honest	−.22	.14	−.10	−1.57
Prior performance	.44	.14	.19	3.12**

Note: β = unstandardized regression coefficient; SE β = standard error of β; B = standardized regression coefficient. Model summary: R^2 = .06; adjusted R^2 = .05; F = 3.49**; N = 266.
*$p < .05$. **$p < .01$.

In the present research, the independent variables—individual personal values and individual prior performance—must be aggregated to the group level to examine their combined impact on team performance (the dependent variable, which is measured at the group level). This is not a test of whether the similarity of team members' ascribed importance to these values will affect team outcomes (as described earlier, this test has been repeatedly conducted in the person–environment fit literature). Rather, the test here is specifically whether higher importance placed on these values among the members of a team has an effect on that team's performance. In the current studies, teams performed a compensatory task in which the performance of high-performing members could compensate for the poor performance of low-performing members. Some researchers have suggested the appropriate operationalization of individual-level variables at the team level for such tasks is the team mean (Bell, 2007). Other researchers, in particular some who have studied values in teams (e.g., Schaubroeck et al., 2007), have averaged team members' value scores to create a team-level variable. Consistent

with the objectives of the current studies and similar to this approach, individual-level scores for the independent variables (value importance and prior performance) are averaged to create team-level measures in the following analyses.

Tables 5 and 6 display the means, standard deviations, and intercorrelations among the unstandardized variables for the group-level analyses. As before, a lower mean for a team value indicates greater importance attached to that value among the members of the team. Performance is the team's score on its major semester project, standardized using Z scores within semesters to control for the unanticipated but potential effects of time and different classes of students. Team performance is significantly and positively correlated to prior performance in Study 1 and in Study 2. In the undergraduate teams, equality is positively correlated to helpful and honest; in the MBA teams equality is only positively correlated with helpful.

As before, the data were analyzed using linear regression. Again, before conducting these analyses the independent variables were standardized to reduce potential multicollinearity. The results of the regression analyses are shown in Tables 7 and 8. The overall regression model in Study 1 (undergraduate teams) is significant. Average prior performance and one value (equality) have significant standardized beta coefficients in the expected directions. The overall regression model in Study 2 is not significant. Thus, Hypothesis 4, that values in the team would have a positive influence on team-level performance, and Hypothesis 5, that average prior performance in the team would have a positive influence on team performance, were supported in Study 1 but not in Study 2.

Collinearity statistics were again calculated with these regression analyses and all variance inflation factor and tolerance scores were well within acceptable limits, so a comparison of significant standardized beta coefficients may be performed to approximate the relative predictive strength of each variable. In Study 1, the coefficient for prior performance is smaller than that for equality, suggesting equality is a stronger predictor of team performance. This comparison was not made in Study 2 because the overall regression model was not significant. Thus, Hypothesis 6, which predicted that prior performance among team members would be a stronger predictor of team performance than would values among team members, was not supported.

Discussion

Dose and Klimoski (1999) noted a decade ago, "there has been a conspicuous lack of work values research in the context of teams" (p. 89). The two studies presented here are unique in that they are among the first to examine the

Table 5. Descriptive Statistics: Undergraduate Teams

Variable	M	SD	2	3	4	5	6
1. Performance in the team	0.78	0.14	.00	−.08	−.14	−.02	.25*
2. A sense of accomplishment	9.21	2.06	—	−.10	−.19	−.13	.14
3. Equality	12.68	2.11		—	.19*	.28**	.04
4. Helpful	9.89	2.21			—	−.01	−.12
5. Honest	4.27	1.84				—	−.06
6. Prior performance	0.75	0.08					—

Note: Because of missing data for some variables, N varied from 95 to 107.
*p < .05. **p < .01.

Table 6. Descriptive Statistics: MBA Teams

Variable	M	SD	2	3	4	5	6
1. Performance in the team	0.91	0.05	−.17	.05	.02	−.03	.27*
2. A sense of accomplishment	8.07	1.75	—	.02	−.02	.07	.04
3. Equality	12.27	2.13		—	.42**	−.24	−.26
4. Helpful	10.20	1.93			—	−.09	−.21
5. Honest	4.35	1.71				—	.23
6. Prior performance	0.85	0.05					—

Note: N = 54.
*p < .05. **p < .01.

relationship between personal values and performance in teams at the individual and team levels of analysis. A more important contribution of this research is the approach used to study these relationships. Unlike in past studies on values in teams, in the current studies values that had specific relevance to teams and to work were selected and measured within the context of participants' value systems. Also unlike most prior research in this area, the direct effects of these values were tested and their ability to predict performance in teams was assessed relative to participants' prior performance.

Despite general expectations from the literature, personal values were not significant predictors of peer-evaluated performance in the first study involving undergraduate students. These results were mostly replicated in the second study with MBA students. The value *helpful* was significantly correlated to peer-evaluations among MBA students but this relationship did not reach statistical significance when other personal values and prior performance were accounted for in the regression analysis. In this regression

Table 7. Regression Analysis of Undergraduate Team Performance on Average Values and Average Prior Performance

Variable	β	SE β	B	t
A sense of accomplishment	−.35	.24	−.15	−1.42
Equality	−.72	.25	−.32	−2.87**
Helpful	−.08	.23	−.04	−0.32
Honest	−.07	.24	.03	0.28
Prior performance	.49	.20	.26	2.49*

Note: β = unstandardized regression coefficient; SE β = standard error of β; B = standardized regression coefficient. Model summary: R^2 = .16; adjusted R^2 = .11; F = 2.99*; N = 84.
*p < .05. **p < .01.

Table 8. Regression Analysis of MBA Team Performance on Average Values and Average Prior Performance

Variable	β	SE β	B	t
A sense of accomplishment	−.29	.32	−.13	−0.93
Equality	.28	.31	.14	0.90
Helpful	.08	.34	.04	0.23
Honest	.01	.31	.01	0.04
Prior performance	.48	.29	.23	1.64

Note: β = unstandardized regression coefficient; SE β = standard error of β; B = standardized regression coefficient. Model summary: R^2 = .09; adjusted R^2 = .00; F = .99; N = 54.

analysis, the value *a sense of accomplishment* was a significant predictor of performance, but the relationship was opposite that expected: Higher importance attributed to of a sense of accomplishment was related to lower peer evaluations. These findings may reflect the competitive nature of some MBA students. A strongly held sense of accomplishment among these students may reveal itself in the pursuit of personal rather than team goals. Team members who are viewed as pursuing individual accomplishments rather than, or even at the expense of, shared objectives are likely to be evaluated less positively.

As expected, personal prior performance was a significant predictor of peer-evaluated performance in both studies. Moreover, the results suggest prior performance is a stronger predictor of performance than are values. This pattern is consistent with findings reported in the person–environment fit literature. In that body of research, the fit between the needs of individuals and the fulfillment of those needs is distinguished from the fit between the abilities of individuals and the demands of the work environment. Need-based fit, often operationalized using personal values, is a significant

predictor of cognitive and affective outcomes such as satisfaction, commit-ment, and cohesiveness, whereas prior ability-based fit is a much stronger predictor of performance (Edwards, 1991; Kristof-Brown, Zimmerman & Johnson, 2005).

At the team level of analysis among undergraduate teams, the average importance assigned equality by team members was a significant predictor of team performance, as was the average prior performance of team members. At this level of analysis, however, the personal value equality was a stronger predictor of team performance than was prior performance. Again, these findings may reflect the nature of the teams under study. One of the greatest challenges for undergraduate teams seems to be establishing and implement-ing an equitable division of the workload; MBA teams still struggle with this issue, but often to a lesser extent. Equality may predict performance for undergraduate teams because equality concerns are their greatest impedi-ment to performance, and once resolved, allow the team to move forward and complete its work. Neither average values nor average prior performance predicted team performance among MBA teams. This lack of findings may be due to the small degree of variance in MBA team performance.

The results of these two studies should not be interpreted as evidence that personal values are unimportant in research or in practice, but they do sug-gest the values a sense of accomplishment, equality, helpful, and honest are not critical predictors of individual performance, at least not individual per-formance as evaluated by peer team members. Similarly, with the exception of equality, values at the group level of analysis do not appear to be strong predictors of team performance. Nonsignificant findings are not inconse-quential; it is vital to understand what predicts performance just as it is to know what does not predict performance.

This research was not without its limitations. Although using students for subjects allowed for data to be collected from a large number of teams, all the teams had been together for less than one semester. Some research suggests that deep-level characteristics become more apparent to teammates later in a team's life (Harrison et al., 2002). Gathering data from established teams might provide a better chance at documenting the impact of personal values. A second limitation may have come from the task students completed. Although the task was real and had consequences for the students, it may not have been sufficiently meaningful to activate the values under study. A third limitation comes from the potential gap between the value systems students reported on paper and the value systems that actually guide their behavior. Although the RVS is a well-established measure of values, the possibility exists that it captured their *espoused* values rather than their *in use* values

(Argyris & Schon, 1978). Students completed the RVS individually before joining their teams. Although values are relatively stable personal characteristics, measuring students' values in the same team environment as their behaviors may have revealed different priorities.

This research represents an important step toward our understanding of values in teams. For researchers, it reinforces the point that we have much to learn. For practitioners, it reminds us that stated values do not always translate into expected behaviors. Personal values are an important characteristic of individuals, both in work and nonwork settings, and are worthy of much future investigation.

Declaration of Conflicting Interests

Funding

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Bio

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