University of Tennessee, Knoxville

TRACE: Tennessee Research and Creative Exchange

Doctoral Dissertations

Graduate School

5-2001

# Organizational Citizenship Behavior As A Predictor of Work Team Performance

Tjai M. Nielsen
*University of Tennessee, Knoxville*

Follow this and additional works at: https://trace.tennessee.edu/utk_graddiss

Part of the Psychology Commons

## Recommended Citation

Nielsen, Tjai M., "Organizational Citizenship Behavior As A Predictor of Work Team Performance. " PhD diss., University of Tennessee, 2001.
https://trace.tennessee.edu/utk_graddiss/4193

This Dissertation is brought to you for free and open access by the Graduate School at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Doctoral Dissertations by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

To the Graduate Council:

I am submitting herewith a dissertation written by Tjai M. Nielsen entitled "Organizational Citizenship Behavior As A Predictor of Work Team Performance." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Eric Sundstrom, Major Professor

We have read this dissertation and recommend its acceptance:

John Lounsbury, Michael Johnson, Craig Wrisberg

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

I am submitting herewith a dissertation written by Tjai M. Nielsen entitled "Organizational Citizenship Behavior As A Predictor of Work Team Performance." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Eric Sundstrom, Major Professor

We have read this dissertation
and recommend its acceptance:

John Lounsbury

Michael Johnson

Craig Wrisberg

Accepted for the Council:

Interim Vice Provost and
Dean of The Graduate School

# ORGANIZATIONAL CITIZENSHIP BEHAVIOR AS A PREDICTOR OF WORK TEAM PERFORMANCE

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Tjai Michael Nielsen

May 2001

**Copyright © Tjai Michael Nielsen, 2000**

**All rights reserved**

## ABSTRACT

This study assesses the relationships among organizational citizenship behavior (OCB), task interdependence, and performance at the team level. A longitudinal, correlational field study was conducted with 52 work teams from 6 organizations located in the Eastern United States. At the individual level of analysis it was hypothesized that OCB is positively related to individual performance. At the team level of analysis it was hypothesized that OCB is positively related to concurrent team performance, subsequent team performance, and customer-rated performance. It was also predicted that customer-rated OCB is related to concurrent and subsequent team performance. Task interdependence was expected to moderate the relationships between OCB and team performance at times 1 and 2, such that the relationships are stronger as task interdependence increases. Assessing team norms was hypothesized to be a more complete and accurate method for assessing team level variables and it was predicted that team norms of OCB is a better predictor of team performance compared with individual OCB.

Surveys were administered to 52 work teams. Team leaders ($N$ = 52) provided ratings on team OCB, individual performance, and team performance at times 1 and 2. Team members ($N$ = 209) provided ratings on individual OCB, team OCB, and task interdependence. Team customers ($N$ = 83) provided ratings on team OCB and team performance.

Results indicated that individual OCB is not related to individual performance. Team OCB positively correlates with concurrent team performance, subsequent team performance, and customer-rated team performance. Customer-rated team OCB is

related to concurrent and subsequent team performance. Task interdependence moderates the relationship between team OCB and subsequent team performance, but not concurrent team performance. Team norms of OCB is positively related to team performance and predicts team performance better than individual level OCB. Eight of nine hypotheses were supported.

This study extends the current literature on OCB and performance at the team level by demonstrating that team OCB is a robust predictor of team performance. It also indicates that team OCB is related to concurrent *and* subsequent team performance and provides support for the validity of assessing team norms of OCB.

Findings from this study provide valuable information for individuals involved in the development and measurement of work teams. That is, the consistent and strong relationship between OCB and performance at the team level indicates that increasing citizenship behaviors within teams may be related to increased performance. In addition, results demonstrating the value of measuring team level process variables by assessing the degree to which they are team norms, indicates a potentially more accurate method for assessing team level variables.

A summary of findings is presented and an agenda for future research is suggested.

## ACKNOWLEDGEMENTS

There are a number of people who have contributed to the completion of this project and I would like to acknowledge them in no particular order. I would like to thank Dr. Eric Sundstrom, Dr. John Lounsbury, Dr. Craig Wrisberg, and Dr. Michael Johnson for their contributions as committee members. I thank Craig for bringing me to the University of Tennessee and then valiantly encouraging me to follow my heart and pursue another course of study. I thank John for believing in my abilities sight unseen and for his consistent and motivating optimism. Finally, I thank my advisor, Eric Sundstrom, for setting the highest standards through his own example and for patiently helping me strive to do as well. This project would not have been possible without his intelligence and counsel.

I would also like to thank Dr. Doug Cox. Doug is my mentor and colleague. He has taught me what it means to consult with integrity and professionalism. Beyond work, Doug has been a friend, confidant, and steadfast source of support. His proclivity to offer words of advice, praise, and encouragement has been important to my success.

My mother deserves mention and credit for everything that I have achieved in life, not just this project. She is a fervent supporter, honest advisor, and dear friend. Thank you for everything.

Finally, I want to thank my wife Dana. She has suffered through many lonely nights and weekends without complaint. This project would not have been possible without her love, support, and understanding. She is a true example of what it means to have a kind heart.

## CONTENTS

1. Introduction---------- 1

General Framework---------- 4

Organizational Citizenship Behavior---------- 7

Work Team Performance---------- 14

Team Dynamics of OCB as a Predictor of Team Performance---------- 18

OCB and Customer Service---------- 21

Task Interdependence as a Moderator---------- 22

Measurement of OCB at the Team Level---------- 24

Objective of this Study---------- 26

Hypotheses---------- 26

2. Method---------- 28

Design---------- 28

Setting---------- 28

Participants---------- 31

Procedure---------- 31

Measures---------- 36

Individual Level Variables---------- 40

Team Level Variables---------- 42

3. Results---------- 52

Data Analysis---------- 52

Individual Level Results---------- 53

Team Level Results---------- 55

4. Discussion---------- 68

Individual Level---------- 68

Team Level OCB---------- 69

Team Norms of OCB---------- 76

Contributions to Current Knowledge---------- 80

Implications---------- 84

Limitations---------- 90

Future Directions---------- 95

Conclusions---------- 96

References---------- 99

Appendices---------- 116

Appendix 1 - Organizational Citizenship Project Proposal---------- 117

Appendix 2 - Project Proposal---------- 122

Appendix 3 - Field Plan - Survey Project---------- 132

Appendix 4 - Cooperation and Performance Rating Form - Team Members---------- 134

Appendix 5 - Cooperation and Performance Rating Form - Team Leaders---------- 143

Appendix 6 - 2nd Team Performance Rating Form---------- 157

Appendix 7 - Cooperation and Performance Rating Form - Team Customers---------- 166

Vita---------- 167

TABLES


| Table | | Page |
|---|---|---|
| 1. | Summary of Results of Team and Organizational Level Field Studies of OCB and Performance | 5 |
| 2. | Summary of Hypotheses | 27 |
| 3. | Longitudinal Assessment of Team Performance | 29 |
| 4. | Individual Level Means, Standard Deviations, Reliabilities, and Correlations | 54 |
| 5. | Team Level Sample Sizes, Means, Standard Deviations, and Correlations | 56 |
| 6. | Differences Between Teams With Low OCB Norms/Low Task Interdependence and All Other Teams On Team Performance Mean Scores At Time 1 and Time 2 | 80 |
| 7. | Team Level Correlations Across Different Rating Groups | 92 |
| 8. | Team Level Sample Sizes, Means, Standard Deviations, and Correlations Controlling for Organization Type | 94 |

FIGURES


| Figure | | Page |
|---|---|---|
| 1. | General framework for the relationship structure of organizational citizenship behavior and performance---------- | 6 |
| 2. | Relationship between organizational citizenship behavior, task interdependence, and concurrent team performance---------- | 60 |
| 3. | Relationship between organizational citizenship behavior, task interdependence, and subsequent team performance---------- | 61 |
| 4. | Relationship between team norms of organizational citizenship behavior, task interdependence, and concurrent team performance---------- | 65 |
| 5. | Relationship between team norms of organizational citizenship behavior, task interdependence, and subsequent team performance---------- | 67 |
| 6. | Revised general framework for the relationship structure of organizational citizenship behavior and performance---------- | 86 |

# 1. Introduction

Organizational citizenship behavior (OCB) has been identified as vital to the success of work teams and organizations (Bateman & Organ, 1983; Organ, 1988; Podsakoff, Ahearne, & MacKenzie, 1997; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). OCB refers to behaviors performed by employees that are helpful, discretionary, and go far beyond normal job requirements. Some research (e.g., Podsakoff, Ahearne, & MacKenzie, 1997) links OCB with the performance of work teams, "interdependent collections of individuals who share responsibility for specific outcomes for their organizations" (Sundstrom, DeMeuse, & Futrell, 1990). Researchers studying organizational citizenship behavior have argued that work team OCB improves work team performance through improved coordination and efficiency (Podsakoff, Ahearne, & MacKenzie, 1997). However, researchers have been unable to produce definitive and reliable demonstrations that team level OCB improves work team performance.

This study attempts to examine the validity of work team organizational citizenship behavior (OCB) as a predictor of work team performance across time and assess the relative impact of task interdependence. Results offer the possibility of furthering current knowledge on the relationship between work team OCB and team performance which to date is very limited and inconsistent. Findings from this study may also be valuable in applied settings by identifying specific behaviors that facilitate work team performance and offering a more accurate method for assessing team level variables.

Organizations in today's competitive business environment are increasingly restructuring standard operating procedures, organizational structure, and day-to-day practices. A key driver of this corporate restructuring has been increased global competition and the resulting need to conduct business more efficiently. Researchers have argued that organizational citizenship behavior (OCB) aggregated across individuals and time is related to increased organizational performance (Bateman & Organ, 1983; Organ, 1988).

Organizational citizenship behavior (OCB) refers to a general set of behaviors performed by employees that are helpful, discretionary, and go far beyond normal job requirements. Specifically, OCB has been defined as, "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (Organ, 1988). Some examples include:

- An employee staying late to help a teammate finish his or her part of an important project.
- An experienced manager helping a new manager "learn the ropes," even though this activity is not part of the experienced manager's job description and takes much time.
- An office employee exerting the extra effort to come to work during a snowstorm, even when other employees use the storm as an excuse to stay home.
- A team member spending many hours helping to resolve a conflict between other team members.

- A manager who is willing to adapt to new company human resource policies, rather than complaining about them.

In recent years there has been a plethora of research conducted involving OCB. Primarily, this research has attempted to identify the antecedents of OCB (Bateman & Organ, 1983; George, 1991; Konovsky & Organ, 1996; McNeely & Meglino, 1994; Munene, 1995; Niehoff & Moorman, 1993; Organ & Konovsky, 1989; Moorman, 1991; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Podsakoff, Niehoff, MacKenzie, & Williams, 1993; Schnake, 1991; Smith, Organ, & Near, 1983). The majority of this research was presumably conducted with the assumption that OCBs are positively related to organizational and/or work team performance. However, as identified by several studies (Organ & Ryan, 1995; Bolino, 1999; Podsakoff et al., 1997; Borman & Motowidlo, 1997) there has been very little empirical evidence to substantiate this hypothesis.

While the assumption that greater levels of OCB improves performance is intuitively appealing, it lacks empirical support. Only a limited amount of research has been conducted that examines the relationship between organizational citizenship behavior and performance at the team and organizational levels (Podsakoff, Ahearne, & MacKenzie, 1997; Podsakoff & MacKenzie, 1994; Walz & Niehoff, 1996). While these researchers operationalized team performance differently, it can be generally defined as the degree to which a team's output is acceptable to internal and/or external customers who receive team products, services, information, decisions, or performance events (Sundstrom, DeMeuse, & Futrell, 1990). Research examining the potential relationship

between OCB and performance at the team level has produced contradictory findings (Podsakoff et al., 2000), providing only partial support for the existence of this relationship (please see Table 1).

Table 1 illustrates a series of contradictory results. However, this research does suggest a general framework for understanding how OCB might improve work team performance.

General Framework

A framework illustrating the complexity of the relationship between OCB and performance at the team level is based on the idea that individual OCB aggregated across people and time will be related to work team performance (please see Figure 1). Behavioral examples of OCB such as employees going out of their way to help each other with work-related problems, experienced employees staying after hours to train new ones, and employees actively participating in team meetings might increase work team performance by promoting self-management, increasing the team's ability to accomplish goals, and improving the efficiency and coordination of the team (Podsakoff & MacKenzie, 1994). These examples suggest a framework of relationships involving team level OCB and team performance.

First, OCB as a team level variable--partially defined by the extent to which it has been adopted as a team norm--positively predicts work team performance. Second, team level OCB predicts team performance better than individual OCB. Finally, the relationship between team level OCB and work team performance is moderated by the degree to which a work team's tasks are interdependent.

Table 1

Summary of Results of Team and Organizational Level Field Studies of OCB and Performance

| Studies | | | | | Predictor | Criteria | | Results |
|---|---|---|---|---|---|---|---|---|
| Authors | Setting | # of Teams/ Orgs. | Type of Team/ Org. | Size | Source | Subjective-Source | Objective-Source/Type | OCB: Helping (H); Civic Virtue (CV) Sportsmanship (S) |
| Podsakoff et al. (1997) | Field | 40 | Production | ~5 | Team Members | - | Production quality and quantity | H & quality = -.40<br>H & quantity = .36<br>S & quantity = .40 |
| Podsakoff and MacKenzie (1994) | Field | 116 | Service | ~7 | Team Members | - | Sales | H & sales perf. = .68<br>CV & sales perf.= .54<br>S & sales perf. = .48 |
| Walz and Niehoff (1996) | Field | 30 | Limited Menu Restau-rants | - | Supervisor | Supervisor | Profit margins; customer service | H & Fdcst = .58<br>H & Opreff = .38<br>H & Revtofte = .43<br>H & Custcmp = -.42<br>H & Custsat = .62<br>H & Qltyperf = .44<br>CV & Custcmp = -.53<br>S & Fdcst = -.57<br>S & Custcmp = -.40 |

Note. All reported correlations are significant, $p < .05$. OCB = Organizational Citizenship Behavior. H = Helping Behavior. CV = Civic Virtue. S = Sportsmanship. Fdcst = Food cost percentage. Opreff = Operating efficiency ratio. Revtofte = Revenue to full-time equivalent. Custcmp = Average customer complaints. Custat = Customer satisfaction. Qltyperf = Company quality performance score.

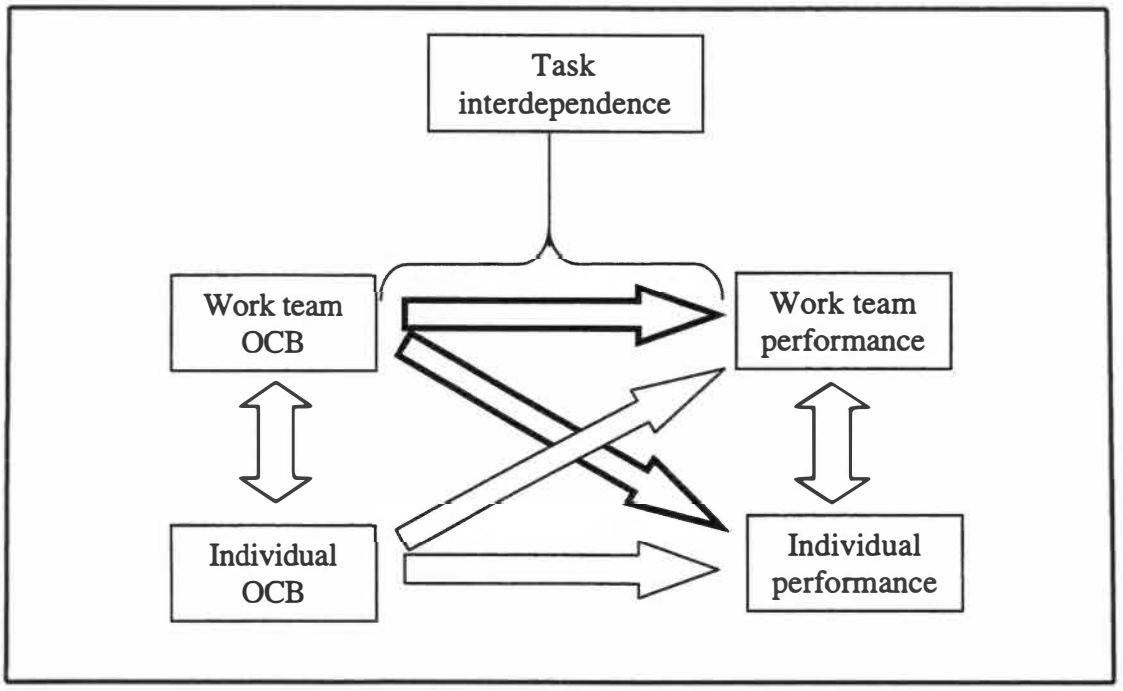



Figure 1. General framework for the relationship structure of organizational citizenship behavior and performance

Properly articulating the justification for research examining OCB and work team performance requires the presentation and review of several key areas. These areas include OCB, work team performance, the dynamics of OCB as a predictor of work team performance, OCB and customer service, and the measurement of OCB at the team level. Each area is presented in the sections that follow.

Organizational Citizenship Behavior

The concept of organizational citizenship behavior first introduced by Bateman and Organ (1983), originated from the work of several people including Barnard (1938), Roethlisberger and Dickson (1964), and Katz and Kahn (1966). The central idea is best expressed by Katz and Kahn (1966) in their discussion of "spontaneous" or extra-role behavior as one of three necessary patterns of behavior elicited by effective organizations. They describe this type of behavior as, "innovative and spontaneous behavior: performance beyond role requirements for accomplishments of organizational functions...Within every work group in a factory, within any division in a government bureau, or within any department of a university are countless acts of cooperation without which the system would break down. We take these everyday acts for granted, and few of them are included in the formal role prescriptions for any job." Theoretically, this relates directly to the definition of OCB offered by Organ (1988) that states, "OCB represents individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization." Research on OCB has prompted personnel selection researchers to suggest non-traditional conceptualizations of performance (Borman & Motowidlo, 1997).

Recently, OCB has been linked to individual level contextual performance which involves activities like volunteering to carry out tasks that are not formally a part of the job and helping others in the organization get tasks accomplished (Borman & Motowidlo, 1997). They are important because they contribute to team level and organizational level performance by shaping the organizational, social, and psychological context within which task activities and processes take place (Borman & Motowidlo, 1997). Moreover, organizational leaders perceive individual level contextual performance as important and valuable (Borman, White, & Dorsey, 1995; Motowidlo & Van Scotter, 1994). The high degree of similarity between individual level OCB and individual level contextual performance is important because they are different from task performance (Borman & Motowidlo, 1997) and seem to be a key factor contributing to supervisor ratings (MacKenzie, Podsakoff, & Fetter, 1991; Motowidlo & Van Scotter, 1994). The relationship between individual level OCB and individual level contextual performance highlights the complexity of the OCB construct. In fact, researchers have found OCB to be comprised of multiple factors.

The OCB construct was originally divided into five factors (Bateman & Organ, 1983). They included altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. They may be defined as follows: 1) altruism - Discretionary behaviors that have the effect of helping a specific other person (e.g., supervisor, teammate, & customer); 2) conscientiousness - Discretionary behaviors on the part of an employee that go well beyond the minimum role requirements of the organization, in the areas of attendance, obeying rules and regulations, taking breaks, and so forth; 3) sportsmanship - Willingness

of an employee to tolerate less than ideal circumstances without complaining; 4) courtesy - Discretionary behavior on the part of an individual aimed at preventing work-related problems with others; 5) civic virtue - Behavior on the part of the individual that indicates that he or she responsibly participates in, is involved in, or is concerned about the life of the organization. Recent research (e.g., MacKenzie et al., 1991, 1993; Podsakoff & MacKenzie, 1994) has indicated that participants have difficulty distinguishing altruistic and courteous behaviors. This has resulted in the combination of those two factors into a single "helping behavior" dimension (Podsakoff, Ahearne, & MacKenzie, 1997). Measures of helping behavior, sportsmanship, and civic virtue have received strong empirical support for reliability with coefficient alphas (Cronbach, 1951) of .95, .96, and .88, respectively (Podsakoff, Ahearne, & MacKenzie, 1997).

Behavioral examples of these specific dimensions include:

*Civic Virtue* – A team member risks the disapproval of peers in order to express his or her beliefs about what is best for the team; Team members actively participate in team meetings.

*Helping* – A team leader helps a new team member "learn the ropes," even though this activity is not part of the team leader's job description; One team member helps another finish his or her part of an important team project.

*Sportsmanship* – Team members adapt to new company human resource policies, rather than complaining about them; Team members constantly complain about team or organizational issues (R).

While not formally expected by the organization, the aggregation of these types of behaviors across people and time should contribute substantially to performance. Thus, numerous researchers have attempted to identify predictors of organizational citizenship behavior.

Antecedents of OCB. The empirical research examining antecedents to OCB has concentrated on four primary categories including individual characteristics (e.g., employee attitudes; personality), task characteristics (e.g., task feedback & routinization), organizational characteristics (e.g., reward structure, perceived organizational support, organizational formalization), and leadership behaviors (e.g., transformational leadership; high performance expectations).

Consistent with the theoretical foundation of OCB, many researchers have explored job satisfaction (i.e., individual characteristic) as a predictor of OCB (Bateman & Organ, 1983; George, 1990; Karambaya, 1991; Kemery, Bedeian, & Zacur, 1993; Miller, Garlick, & Omens, 1994; Moorman, Niehoff, & Organ, 1993; Organ & Lingl, 1995; Schappe, 1994; Stecher, Rosse, & Miller, 1994; Williams & Anderson, 1991). The strength of this relationship appears intuitively plausible and has been empirically supported (Organ & Ryan, 1995; Podsakoff et al., 2000). A variety of other antecedents have also been examined.

*Individual Characteristics.* Fairness - (Bies, Martin, & Brockner, 1993; Farh, Podsakoff, & Organ, 1990; Moorman, 1991; Moorman et al., 1993; Niehoff & Moorman, 1993; Organ & Moorman, 1993; Schappe, 1994; Tansky, 1993).

Organizational commitment - (Kidwell, Mossholder, & Bennett, 1997; Mathieu & Zajac, 1990; O'Reilly & Chatman, 1986).

Personality - (Barrick, Mount, & Strauss, 1992; Konovksy & Organ, 1995; McNeeley & Meglino, 1994; Moorman & Blakely, 1993; Organ & Lingl, 1995).

Affect - (Witt, 1992). A recent review of this literature (Organ & Ryan, 1995) indicated satisfaction, fairness, organizational commitment, leadership, and conscientiousness to be the best predictors of OCB. However, each relationship was moderately well supported.

*Task Characteristics.* The majority of research in this category originates from the substitutes for leadership literature (i.e., Podsakoff & MacKenzie, 1995; Podsakoff; MacKenzie, & Bommer, 1996b; Podsakoff, Niehoff, MacKenzie, & Williams, 1993). A review of this literature (Podsakoff et al., 2000) revealed that task feedback and intrinsically satisfying tasks were positively related to OCB while task routinization was negatively related to OCB.

*Organizational Characteristics.* The relationship between organizational characteristics and OCB is somewhat tenuous. Organizational formalization, organizational inflexibility, advisory/staff support, and spatial distance were not consistently related to OCB (Podsakoff et al., 2000). Only group cohesiveness demonstrated a positive relationship with OCB (Kidwell, Mossholder, & Bennett, 1997).

*Leadership Behaviors.* Transformational leadership behaviors were positively related to OCB (MacKenzie, Podsakoff, & Rich, 1999; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Leader supportiveness was also related to OCB (Podsakoff et al., 1990; Schnake, Dumler, & Cochran, 1993).

In the discussion sections of many articles examining antecedents to OCB are qualifying statements related to the need for research exploring the relationship between OCB and work group or organizational performance. For example, Organ and Ryan (1995) state, "And we should note that a key assumption in the rationale for studying OCB (antecedents) is the notion (Organ, 1988) that ultimately, aggregated across time and individuals, it contributes to organizational effectiveness. With notable exceptions...little effort has been given even to heuristic indicators that this assumption is viable." In addition, Bolino (1999) states, "...in contrast to the numerous studies exploring the antecedents of OCB, there is a paucity of research examining the outcomes of citizenship behaviors in organizations."

OCB and Performance at the Individual Level. A limited amount of research has been conducted attempting to examine the relationship between OCB and performance (Allen & Rush, 1998; Avila, Fern, & Mann, 1988; Karambaya, 1991; Lowry & Krilowicz, 1994; MacKenzie, Podsakoff, & Ahearne, 1996; MacKenzie, Podsakoff, & Fetter, 1991, 1993; MacKenzie, Podsakoff, & Paine, 1999; Podsakoff et al., 1997; Podsakoff & MacKenzie, 1992, 1994; Randall, Cropanzano, Borman, & Birjulin, 1999; Shore, Barksdale, & Shore, 1995; Walz & Niehoff, 1996). Nine field studies at the individual level of analysis used OCB as a predictor (Allen & Rush, 1998; Avila, Fern, & Mann, 1988; Lowry & Krilowicz, 1994; MacKenzie, Podsakoff, & Fetter, 1991, 1993; MacKenzie, Podsakoff, & Paine, 1999; Podsakoff & MacKenzie, 1992, 1994; Shore, Barksdale, & Shore, 1995). Shore, Barksdale, and Shore (1995) conducted a study involving employees from a large multinational organization located in the Southeast.

While assessing organizational citizenship behavior (OCB) and performance at two points in time, the authors found correlations above .50 for all relationships (i.e., the authors defined OCB as altruism & compliance). In a study examining computer salespeople Avila, Fern, and Mann (1988) found OCB to be positively related to sales performance. Similarly, MacKenzie, Podsakoff, and Fetter (1991) explored the relationship between OCB and performance (i.e., subjective & objective) within a large insurance company. Their findings indicated significant positive correlations between components of OCB and subjective performance, but not objective performance. In another study involving over 900 insurance agents, OCB was positively related to supervisor ratings of performance (MacKenzie, Podsakoff, & Paine, 1999; Podsakoff & MacKenzie, 1994). Randall et al. (1999) examined OCB by dividing it into OCB that benefits the organization (i.e., OCBO) and the individual (i.e., OCBI). OCBO and OCBI were both positively correlated with performance. However, because predictor and criterion ratings were both made by the same supervisors, common method variance could partially account for the results. Similar to the previous studies, Allen and Rush (1998) found OCB to be positively related to task performance and overall performance.

*H1a:* Individual OCB correlates positively with individual performance.

*H1b:* Individual ratings of team OCB correlates positively with individual performance.

Karambaya (1991) and Walz and Niehoff (1996) assessed performance at the organizational level (i.e., work units and limited menu restaurants, respectively), while

MacKenzie et al. (1996), Podsakoff and MacKenzie (1994), and Podsakoff et al. (1997) assessed performance at the work team level (i.e., pharmaceutical sales teams, insurance agency teams, and paper mill work crews, respectively). Linking individually measured OCB with organizational level indices of performance can be difficult. Much of this difficulty lies in the complexity of assessing organizational level variables. However, establishing specific linkages between team level OCB and team performance is more plausible. That is, the decreased complexity with which team level variables can be assessed permits a more direct analysis of how team level OCB might impact work team performance.

Work Team Performance

Work teams are defined as, "interdependent collections of individuals who share responsibility for specific outcomes for their organizations" (Sundstrom et al., 1990). Teams have received an increasing amount of attention in the scientific literature (Cohen & Bailey, 1997; Sundstrom et al., 1990; Sundstrom, McIntyre, Halfhill, and Richards, 2000) and in the management press (Katzenbach & Smith, 1993; Sundstrom & Associates, 1999; Wellins, Byham, & Wilson, 1991). This attention to teams has occurred in parallel with an increase in the use of teams in organizations. In 1996 it was estimated that as much as 78% of Fortune 1000 companies used self-managing work teams (Lawler, Mohrman, & Ledford, 1998, p. 44) and that figure has undoubtedly increased significantly.

A variety of group effectiveness models have been offered to explain how work groups function and what factors affect their performance. Initial theories offered by

McGrath (1964) and Steiner (1972) centered on an input-process-output (IPO) model of group performance. These models focused on input defined as things people bring to the group (expertise, status, personality & experience); process defined as the interaction among group members (social exchange of information, influence attempts & leadership); and output defined as products yielded by the group (Guzzo & Shea, 1992). Theories by McGrath (1964) and Steiner (1972) were extended by McGrath (1984) in one of the most comprehensive examinations of groups and human behavior.

Recent attempts (Argote & McGrath, 1993; Campion, Medsker, & Higgs, 1993; Cohen & Bailey, 1997; Sundstrom et al., 1990) have built on previous input-process-output models by expanding on factors related to work team effectiveness. These factors generally include: organizational context (e.g., training, reward, measurement, & information systems); group composition (e.g., # of members & the mixture of individual traits like personality and ability); group work design (e.g., task interdependence, task predictability, task complexity, task significance, level of group autonomy, & degree of self-management); intra-group process (e.g., conflict, communication, collaboration, cohesion, and team norms); and external group processes (e.g., external member interactions w/ peers, managers, suppliers, & customers) (Sundstrom et al., 2000). These models suggest that there are a number of factors contributing to work team effectiveness. However, a consistent and powerful predictor of work team performance has been intra-group process (Campion et al., 1993; George & Bettenhausen, 1990; Jehn, 1995, 1997).

The phenomenon of work team norms, a relationship-based intra-group process, has received a considerable amount of attention by researchers (Asch, 1951; George & Bettenhausen, 1990; Jehn, 1995; Seashore, 1954; Sherif, 1936; Wageman, 1995). Norms are informal rules implicitly adopted by a group that often have powerful effects on group behavior. Norms may contribute to or detract from group performance depending on their structure. If a work team has established norms involving the tolerance of tardiness and absenteeism, then the team's norms will likely be deleterious to performance. However, if a work team has established norms involving cooperation and helping behavior, then the team's norms will likely facilitate performance. Work team norms are more likely to be enforced if they facilitate team survival, simplify the behavior expected of team members, help the team avoid problems, and express the central values of the team (Feldman, 1984). Moreover, norms often serve as powerful moderators of the relationship between specific intra-group process variables such as cohesion and group performance (Seashore, 1954). An important issue when conducting research on intra-group processes like cooperation and its potential relationship with performance involves the consideration of specific levels of analysis.

Variables included in work team research can be assessed at individual, team, and organizational levels of analysis. The same variable assessed at each of these levels can be fundamentally different (Rousseau, 1985). Thus, the aggregation of individual level data for group-level analysis can be misleading (Roberts, Hulin, & Rousseau, 1978). An accepted method for assessing the appropriateness of aggregating individual level data is $r_{wg}$, an index of within-group agreement (James, Damaree, & Wolf, 1984). This index

assesses the extent to which individual perceptions of a specific phenomenon are in agreement. A high level of agreement (i.e., $r_{wg}$) is used to justify aggregation of individual level responses regarding a specific variable to represent the same variable at the team level (Chan, 1998). Once the team level variable is established, it is necessary to assess between-team variability to further establish the existence of a team level variable. The absence of between-team variability might indicate that there are no differences at the team level and may refute the validity of the hypothesized team level variable indicating the existence of an organizational level variable (Chan, 1998). Moritz and Watson (1998) also suggest that after demonstrating within-team agreement and between-team variability, researchers should employ hierarchical linear modeling (HLM) to assess cross-level effects.

Another method for assessing the suitability of individual level data for aggregation involves intraclass correlation coefficients (ICC). James (1982) recommends using intraclass correlation coefficients to assess agreement among team members' perceptions of specific variables. Significant intraclass correlation coefficients (i.e., ICC 1 and ICC 2) indicate agreement among team members and suggest that the data is suitable for aggregation to the team level (Barrick, Stewart, Neubert, and Mount, 1998).

Specific attention to levels of analysis is necessary for accurate data interpretation, especially when examining the relationship between intra-group process variables initially assessed at the individual level and performance variables assessed at the team level.

Organizational citizenship behavior (OCB) should be considered as both an intra-group process variable and an external group process variable because it involves internal and external team member interaction. Researchers have suggested that individual level OCB is positively related to individual level performance and individual level OCB aggregated to the team level is positively related to team level performance (Podsakoff et al., 1997; Podsakoff & MacKenzie, 1994).

Team Dynamics of OCB as a Predictor of Team Performance

There has been a significant amount of theoretical work attempting to explain why team level organizational citizenship behavior is positively related to work team performance (Podsakoff & MacKenzie, 1997). First, team level OCB represented by team members going out of their way to help each other with work related problems is thought to decrease the need for manager involvement and promote self-management. Second, team level OCB represented by experienced team members training new ones may increase individual team members' ability to accomplish specific tasks and enhance the team's ability to accomplish overall team goals. Third, team level OCB represented by team members actively participating in team meetings will probably improve work team coordination. Finally, team level OCB represented by team members engaging in helpful and cooperative behaviors will naturally create a more pleasant place to work. This enhanced work environment may increase the team's ability to attract and keep the most talented employees. However, empirical support for this theoretical framework is lacking.

There is a significant need for research examining the link between OCB and performance at the team level (Bolino, 1999; Organ & Ryan, 1995). To date, only a limited number of studies have attempted to meet this need (MacKenzie et al., 1996; Podsakoff & MacKenzie, 1994; Podsakoff et al., 1997). Specifically, MacKenzie et al. (1996), Podsakoff and MacKenzie (1994), and Podsakoff et al. (1997) assessed team level OCB and work team performance (i.e., pharmaceutical sales teams, insurance agency teams, and paper mill work crews, respectively). These studies produced contradictory findings, providing only partial support for a relationship between team OCB and team performance.

A study involving paper mill work crews yielded contradictory results (Podsakoff et al., 1997): a positive relationship between sportsmanship, helping behavior and the quantity of output, but a negative relationship between helping behavior and the quality of output. In addition, MacKenzie et al. (1996) found a positive relationship between helping behavior and sportsmanship and team performance in an examination of pharmaceutical sales teams. Podsakoff and MacKenzie (1994) studied the relationship between team OCB and insurance agency performance. While these researchers obtained a large sample and objective ratings of performance, results were mixed. They found sportsmanship and civic virtue to be positively related to agency performance, while helping behavior and agency performance demonstrated a negative relationship. These studies are inconsistent with other research that has examined OCB and performance at the organizational level (Karambaya, 1991; Walz & Niehoff, 1996).

Karambaya (1991) and Walz and Niehoff (1996) assessed performance at the organizational level (i.e., work units and limited menu restaurants, respectively). Karambaya (1991) examined the relationship between organizational level OCB and work unit performance and found them to be positively related. However, limitations suggested by small sample size and subjective performance ratings of work units from different organizations reduce the level of confidence that can be placed in the results. Walz and Niehoff (1996) assessed the relationship between organizational level OCB and organizational level performance in limited-menu restaurants. Restaurant performance was determined by six criterion variables including: revenue, food costs, operating efficiency, customer complaints, customer satisfaction, and performance quality. Results indicated that OCB accounted for 29% of the variance in overall restaurant performance. Similar to the team level research on OCB and performance, research examining the relationship between organizational level OCB and organizational performance has produced inconsistent findings.

There are two additional weaknesses in the OCB-performance research done to date. First, no causal connection has been established between OCB and performance. Research in this area has been exclusively correlational and has therefore been unable to determine causality. Second, no causal direction has been established between OCB and performance. Instead of the hypothesized causal direction indicating that OCB precedes and positively impacts performance, it may be that good performance results in more OCB. These problems are inherent with correlational designs, however future research must address these key weaknesses.

While inconsistent, research examining work team OCB and team performance does suggest a relationship between work team OCB and team performance. Research exploring this potential relationship would be a valuable addition to the literature.

*H2:* Aggregate individual OCB correlates positively with: a) concurrent work team performance; b) subsequent work team performance.

*H3:* a) Overall team OCB correlates positively with concurrent work team performance; b) Work team helping behavior correlates positively with work team performance; c) Work team sportsmanship correlates positively with work team performance; d) Work team civic virtue correlates positively with work team performance; e) Overall team OCB correlates positively with subsequent work team performance.

OCB and Customer Service

A key component of organizational citizenship behavior is helping behavior. Researchers have explored the relationship between helping behavior directed at customers and team performance (George, 1990; George & Bettenhausen, 1990). Team customers can be defined as anyone who receives that team's products, services, information, or decisions.

George and Bettenhausen (1990) explored the relationship between the helping behavior and performance of sales people from 33 retail stores that were part of a national chain. Each store comprised a work group. Helping behavior was

operationalized as customer service and was defined as the degree to which sales people engaged in helpful behaviors toward customers. Objective performance was assessed by calculating total sales per store during a two month period following the completion of questionnaires. Results indicated that customer service was related to sales performance. George (1990) also studied helping behavior defined as customer service. Sales people who worked for the same department manager were defined as work groups. Results demonstrated a significant, negative correlation between customer service and negative affective tone (i.e., criterion variable).

*H4:* Team OCB correlates positively with customer-rated team performance.

*H5:* Customer-rated OCB correlates positively with: a) customer-rated team performance; b) concurrent team performance; c) subsequent team performance.

Task Interdependence as a Moderator

Researchers have suggested that many of the inconsistent results in OCB research may be due to a failure to examine some key potential moderating factors in the team level OCB-work team performance relationship (Podsakoff et al., 1997).

One factor that could potentially moderate the relationship between work team OCB and team performance is interdependence. Interdependence has been identified as a key facet related to the formation, motivation, and performance of work teams (Campion et al., 1993; Guzzo & Shea, 1987; Mintzberg, 1979; Wageman, 1995). Specifically, interdependence may increase cooperative behavior (Shea & Guzzo, 1989), promote the

reward value of group accomplishments (Shea & Guzzo, 1987), and enhance group effectiveness (Guzzo & Shea, 1987). Several forms of interdependence have emerged, but a significant amount of research has focused on task interdependence (Wageman, 1995, 1999).

Task interdependence defined as, "the degree to which completing tasks requires the interaction of group members", has been found to affect group effectiveness (Saavedra, Earley & Van Dyne, 1993). It has been linked with the relationship between high reward interdependence (team-based rewards) and work team performance (DeMatteo, Eby & Sundstrom, 1998). Task interdependence has also been identified as possibly impacting the relationship between work team OCB and team performance (Podsakoff et al., 1997). The more team members depend on each other to perform tasks, the greater the importance of joint, cooperative efforts. OCB represents the essence of cooperative behavior and may have a more significant impact on performance for work teams with a high degree of task interdependence. Thus, work team interdependence might be a powerful moderating variable in the relationship between OCB and performance at the team level of analysis.

*H6a:* Work team task interdependence moderates the relationship between team OCB and concurrent team performance, such that the relationship is stronger as task interdependence increases.

*H6b:* Work team task interdependence moderates the relationship between team OCB and subsequent team performance, such that the relationship is stronger as task interdependence increases.

Measurement of OCB at the Team Level

Norms are informal rules implicitly adopted by a group that have powerful effects on group behavior. Norms may contribute to or detract from group performance depending on their structure (Seashore, 1954). If a work team has positive and functional norms such as helping behavior and sportsmanship, then the team's norms will likely facilitate performance. However, if a work team has established negative performance norms such as low performance goals, then the team's norms will likely be deleterious to performance. The key role norms play in the functioning of teams indicates they may be essential ingredients in the measurement of team level variables.

OCB represents a relatively straightforward set of behaviors, but when OCB is assessed at the team level several key measurement issues are created. It may not be enough to simply aggregate individual scores from an OCB measure and then label this mean or aggregate score as representative of team level OCB. For example, a work team that has a high degree of variability on individual OCB is not likely to realize the full benefits of OCB. That is, a team that has only a few members frequently engaging in OCB will realize some performance benefit, but not compared with the synergy realized from a team where a majority of members carry out citizenship behaviors. If most members of a team frequently engage in organizational citizenship behavior, it is an expected form of behavior, and is explicitly related to how the team is perceived--or in other words, if it is a team norm--then performance may increase exponentially.

Accurately measuring team level OCB may require it to be conceptualized as a team norm and team norms cannot be assessed through the simple aggregation of individual scores. Measuring work team OCB norms requires four key steps. First, within-team variability must be assessed to determine the level of agreement between team members. Second, individual team member OCB scores need to be aggregated. Third, the extent to which team OCB is consistent over time should be assessed to determine stability. Finally, the perception of team level OCB as seen by team members (change in referent from the individual to the team), team leaders, and those external to the team must be assessed. Integrating each of these steps will result in an index measure of team level OCB. This index will facilitate measurement of team level OCB and may represent a qualitatively different and potentially more accurate approach to the assessment of other team level variables.

*H7:* Team norms of OCB correlates positively with: a) concurrent team performance; b) subsequent team performance; c) customer-rated team performance.

*H8:* Team norms of OCB compared with individual OCB, is a better predictor of: a) concurrent team performance; b) subsequent team performance.

*H9a:* Work team task interdependence moderates the relationship between team norms of OCB and concurrent team performance, such that the relationship is stronger as task interdependence increases.

*H9b:* Work team task interdependence moderates the relationship between team norms of OCB and subsequent team performance, such that the relationship is stronger as task interdependence increases.

Objective of this Study

This study attempts to examine the validity of work team organizational citizenship behavior (OCB) as a predictor of work team performance across time and assess the relative impact of task interdependence. Results offer the possibility of furthering current knowledge on the relationship between work team OCB and team performance which to date is very limited and inconsistent. Findings from this study may also be valuable in applied settings by identifying specific behaviors that facilitate work team performance and offering a more accurate method for assessing team level variables.

Hypotheses

Please see Table 2 for a summary of hypotheses.

Table 2

Summary of Hypotheses

| | **Study Hypotheses** |
|---|---|
| 1a | Individual OCB correlates with individual performance. |
| 1b | Individual ratings of team OCB correlates positively with individual OCB. |
| 2 | Aggregate individual OCB correlates positively with: a) *concurrent* work team performance.<br>b) *subsequent* work team performance. |
| 3a | Overall team OCB correlates positively with *concurrent* work team performance. |
| 3b | Work team helping behavior correlates positively with work team performance. |
| 3c | Work team sportsmanship correlates positively with work team performance. |
| 3d | Work team civic virtue correlates positively with work team performance. |
| 3e | Overall team OCB correlates positively with *subsequent* work team performance. |
| 4 | Overall team OCB correlates positively with customer-rated performance. |
| 5 | Customer-rated OCB correlates positively with: a) customer-rated performance.<br>b) *concurrent* team performance.<br>c) *subsequent* team performance. |
| 6 | Work team task interdependence moderates the relationships between overall team OCB and: a) *concurrent* team performance, such that the relationship is stronger as task interdependence increases.<br>b) *subsequent* team performance, such that the relationship is stronger as task interdependence increases. |
| 7 | Team norms of OCB correlates positively with: a) *concurrent* team performance.<br>b) *subsequent* team performance.<br>c) customer-rated team performance. |
| 8 | Team norms of OCB compared with individual OCB, is a better predictor of:<br>a) *concurrent* team performance.<br>b) *subsequent* team performance. |
| 9 | Work team task interdependence moderates the relationship between team norms of OCB and: a) *concurrent* team performance, such that the relationship is stronger as task interdependence increases.<br>b) *subsequent* team performance, such that the relationship is stronger as task interdependence increases. |

Note. OCB = Organizational Citizenship Behavior. Concurrent performance = performance at time 1. Subsequent performance = performance at time 2.

## 2. Method

Design

This longitudinal, correlational field study assessed work team OCB as seen by team members, the team leader, and team customers with three versions of an OCB scale (12 & 13 items-Podsakoff et al., 1997), task interdependence as seen by team members with a task interdependence scale (5 items-Wageman, 1995), and work team performance as seen by the team leader and team customers using a performance assessment scale worded for the specific type of rater (14 items-adapted from Ancona & Caldwell, 1992). Fifty-two work teams from six organizations located in the Eastern United States participated in this study. Performance was assessed twice, separated by a time span of no less than one month (please see Table 3). Performance was assessed longitudinally for two distinct reasons. First, performance assessment at two points in time provides evidence for the directionality of the OCB-performance relationship at the team level. Second, a lag effect between group process and performance has been identified by researchers (Hackman & Walton, 1986). That is, specific group processes at time 1 may affect performance at time 2 (Ancona & Caldwell, 1992).

Setting

Six different organizations participated in this study. Organizations ranged in type from healthcare to government.

Table 3

Longitudinal Assessment of Team Performance

| Measures | Time #1 | Time #2 |
|---|---|---|
| Individual level OCB and performance; Team level OCB, task interdependence, and performance. | X | |
| Team performance | X | X |

Note. OCB = Organizational Citizenship Behavior.

One healthcare organization contained service teams that were primarily responsible for the administration and coordination of geriatric services provided by hospitals and physician groups. For example, the key tasks for some teams includes providing elderly patients with training on how to exercise, eat properly, and maintain mental alertness. Most teams from this organization have from three to ten members with one team leader who reports to a site manager.

Another organization in the healthcare industry was a full service hospital. Teams in this organization included primarily action teams (e.g., surgery; respiratory care). The primary task of the surgery team is to perform highly specialized, complex, and volatile operations on patients. Surgery teams typically include two to three nurses, one to two surgeons, and an anesthesiologist. Nurses are led by the lead surgical nurse and the entire team is led by the lead surgeon. Lead surgeons report to the head of surgery, who reports to the hospital's chief of staff.

A third healthcare organization provided state sponsored community mental health services with five service teams. Some of these teams carried out tasks like providing mentally challenged individuals with specific skills training to facilitate greater levels of independence. Another team operated a house where mentally challenged individuals could spend time playing games, working, and learning rudimentary life skills. Each of these service teams is managed by a team leader who reports to the director of the organization.

A manufacturing company was also included in this study. This organization contained production and service teams that were responsible for the manufacture of playing cards. For example, slitter teams are responsible for cutting large sheets of playing cards into individual pieces. One member of the slitter team operates the mechanical knife that cuts sheets of cards, while another member is responsible for all the individual cards being stacked correctly. Each production team has a team leader who reports to a shift supervisor. The shift supervisor reports to the operations manager who reports to the general manager. Press teams operate large ink presses that apply a variety of designs to the playing cards. Individual team members are responsible for individual presses that contain a specific color while the lead pressman (i.e., team leader) oversees the entire press.

The fifth participating company was a government organization. It contained a management team and multiple service teams. This state government organization is responsible for auditing a variety of state programs and organizations. Each audit team includes auditors and a team leader. Each team leader reports to an assistant director who

reports to the director. The management team in this organization is made up of four assistant directors and is led by the organization's director.

The final organization was comprised of human resource service teams. These teams are responsible for providing human resource services like compensation/benefits and payroll. For example, the payroll team is made up of payroll clerks and accountants. Each member of the payroll team reports to the payroll team leader who reports to the director of human resources.

In all, 52 teams participated. There were 32 service teams, 15 production teams, 3 management teams, and 2 action teams.

Participants

There were a total of 209 participants who were members of 52 work teams. Of these, 57% were female. The majority of participants were college graduates (34%) with 20% having received a graduate master's or doctoral degree. Participants ranged in age from 21 to 69 years old with an average age of 38 years. The average participant had been with their organization for slightly more than 4 years and their team for just over 3 years. At the time of data collection team leaders had led their teams for an average of 2 years. Not surprisingly, the average team leader was older ($M$ = 39 yrs.) and had been with the company longer ($M$ = 4.6 yrs.) compared with team members ($M$ = 37 yrs. and $M$ = 3.6 yrs., respectively).

There were also a total of 83 team customers who participated in this study. Over 88% of participating teams ($N$ = 46) were rated by at least 1 customer. The majority of customers (88%) were internal.

Procedure

This research sample was drawn from six organizations of varying types located throughout the Eastern United States. In each case, organizational approval was sought from the organization's leader (e.g., president; director) or a specific unit's leader (e.g., vice president; director). Contact was made with organizational leaders via telephone and electronic mail.

Once each leader expressed general interest they were sent a project proposal detailing the purpose, methods, and possible beneficial outcomes of participating in the study (please see Appendix 1). A more extensive proposal was provided to two leaders upon their request (please see Appendix 2). Specifically, organization leaders were offered detailed reports summarizing the study's findings in exchange for participation. These reports were offered in both paper and web-based formats.

Once leaders agreed to participate they were given detailed implementation timelines (please see Appendix 3) and copies of all surveys to be used for review. Upon approval, leaders were asked to provide approximations of the number of teams, team members, and team customers that would participate. With this information, an appropriate number of surveys were sent to each organization via federal mail with one exception. One organization chose to receive, complete, and return all surveys via electronic mail. Collecting organizational survey data via e-mail raises several key measurement issues that will be reviewed briefly.

E-mail-based organizational survey data. The popularity of the Internet has increased tremendously in the last ten years. People use the Internet for everything from

buying books to trading stocks. Since the mid-nineties an increasingly popular use of the Internet has been to collect survey data (Landis, 1995; Rosen & Petty, 1995; Stanton, 1998).

Scientists and practitioners in industrial and organizational psychology and other fields have identified the Internet as a viable alternative for collecting data (Huet-Cox, Nielsen, & Sundstrom, 1999a; Stanton, 1998). Additionally, many organizations launch new initiatives using the Internet as the primary, sometimes only method of data collection (James, 2000; Toquam-Hatten, 2000).

The popularity of on-line data collection is likely due to a host of benefits such as convenience, faster data processing, increased security, and less paper to organize and track (Huet-Cox, Nielsen, & Sundstrom, 1999b). However, there are some potentially significant drawbacks to utilizing this method of data collection such as a lack of representative sampling, participant apathy, and response inconsistency (Stanton, 1998).

To date, researchers have demonstrated inconsistent findings regarding the measurement equivalence of cognitive (Mead & Drasgow, 1993) and non-cognitive tests (Booth-Kewley, Edwards, & Rosenfeld, 1992; Holden & Hickman, 1987; King & Miles, 1995; Stanton, 1998).

Mead and Drasgow (1993) conducted a meta-analysis examining the impact of computerizing cognitive tests. Their findings indicate that the method of administration affects the measurement equivalence of speeded tests, but not power tests. Mead and Drasgow (1993) warn that, "Empirically established validity of inferences...should not be

assumed to automatically generalize to a corresponding computerized test." A similar pattern of inconsistent findings also exists in the literature on non-cognitive tests.

Some researchers examining non-cognitive tests have found decreased levels of social desirability and an increase in extreme responses (Booth-Kewley et al., 1992; Kiesler & Sproull, 1986; Martin & Nagao, 1989). Others have found that computerizing tests increases social desirability (Lautenschlager & Flaherty, 1990; Schuldberg, 1988).

King and Miles (1995) conducted a study comparing four different non-cognitive tests utilizing three different response formats. They found computerized and paper-and-pencil versions to be generally equivalent regarding factor loadings, the number of factors, and social desirability demonstrated by each. Similarly, Stanton (1998) found that identical survey data collected via the Internet and paper-and-pencil demonstrated similar factor structures. Stanton (1998) also found that Internet data demonstrated significantly higher item variability, while paper-and-pencil data contained a significantly greater number of missing data points. In contrast, Nielsen and Halfhill (2000) conducted a study examining the general measurement equivalence of a 360-degree feedback survey. Identical surveys were completed via the Internet ($N$=609) and via paper-and-pencil ($N$=719). Results indicated that coefficient alphas and item mean scores were nearly identical, item response variability was greater for Internet data compared with paper-and-pencil data, and that Internet data contained significantly *more* missing data points.

Any definitive conclusions regarding the measurement equivalence of computer-based surveys are not possible at this juncture. However, initial findings indicate that surveys maintain similar properties whether executed via computer or paper-and-pencil.

*Procedure continued.* Prior to the distribution of all surveys, each organizational leader informed team leaders of the impending project, its requirements, and its possible benefits. Team leaders were then given the option of participating or not. Approximately 90% of team leaders who were informed of the study chose to participate.

Team Members. Each team member was given a 46-item survey (please see Appendix 4) designed to assess individual OCB, team OCB, task interdependence, and team performance. All surveys were distributed via internal company mail, external mail, or electronic mail. Surveys included detailed instructions displayed at the top of each page stating in part, that each question should be answered as honestly as possible, that all results will be kept strictly confidential, and that participants are free to withdraw from the study at any point without penalty.

Team Leaders. Each team leader was given a 61-item survey (please see Appendix 5) designed to assess individual OCB, team OCB, the consistency of team OCB over time, team performance, and individual performance. All surveys were distributed via internal company mail, external mail, or electronic mail. Surveys included detailed instructions displayed at the top of each page stating in part, that each question should be answered as honestly as possible, that all results will be kept strictly confidential, and that participants are free to withdraw from the study at any point without penalty. Team leaders were also administered a 14-item survey (please see

Appendix 6) to assess their team's performance at a second point in time which was at least one month after initial data collection.

Team Customers. Internal and external customers of all work teams were chosen by team leaders and were given a 27-item survey (please see Appendix 7) designed to assess team OCB and team performance. Customer surveys were distributed by team leaders. Surveys included detailed instructions displayed at the top of each page stating in part, that each question should be answered as honestly as possible, that all results will be kept strictly confidential, and that participants are free to withdraw from the study at any point without penalty.

A total of 358 surveys were returned. Of these, 292 were complete and matched with an appropriate team for inclusion. The number of team leader ($N = 52$) individual performance ratings ranged from 1 to 12 each with an average of approximately 4. Inclusion criteria included but were not limited to the receipt of at least 2 team member surveys with corresponding team leader ratings. Fifty-two teams met these requirements.

Measures

Organizational Citizenship Behavior. This questionnaire contained 3 sub-scales measuring helping behavior, sportsmanship, and civic virtue. Each scale represents a dimension of organizational citizenship behavior previously established as reliable (Podsakoff et al., 1997). There were 13 items with 7 tapping the dimension of helping behavior, 3 tapping sportsmanship, and 3 tapping civic virtue. Each item includes a statement about the behavior of the individual or work team and is followed by a list of responses indicating the level of agreement. The response format contained a 5-point

scale of agreement including, 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. This scale was used to assess individual level OCB, team level OCB, and the consistency of team level OCB over time. Each measure included a stem in order to place the items in the appropriate context. Four different stems were used and included, "When I work with my team I...", "Members of my team...", "Consistently, over time members of my team...", and "Members of the _____ team...". Items were worded a little differently depending upon the specific stem, but generally included the following, "Help out other team members if someone falls behind in his/her work", "Willingly share my expertise with other members of the team", "Always focus on what is wrong with the situation, rather than the positive side (R)", "Take steps to prevent problems with other team members", "Willingly give my time to help team members who have work-related problems", ""Touchbase" with other team members before initiating actions that might affect them", "Consume a lot of time complaining about trivial matters (R)", "Provide constructive suggestions about how the team can improve its effectiveness", "Am willing to risk disapproval to express my beliefs about what's best for the team", "Always find fault with what other team members are doing (R)", "Try to act like a peacemaker when other team members have disagreements", "Encourage other team members when they are down", and "Attend and actively participate in team meetings." Only 12 items were used when assessing individual OCB due to a significant increase coefficient alpha.

Task Interdependence. This questionnaire measured task interdependence. It was previously established in the literature as reliable (Wageman, 1995, 1999). There are 5

total items including statements about the behavior of the work team followed by a list of responses indicating the level of agreement. The response format contained a 5-point scale of agreement including, 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. This measure assessed experienced task interdependence within each team. Items included, "Our work is not done until everyone in the group has done his or her part", "We often must share materials and ideas if we are to get our work done", "I often have to talk to other people in my work group in order to do my job well", "In our group, we need to count on each other a lot", and "We clearly are a team of people with a shared task to perform--not a collection of individuals who have their own particular jobs to do."

Individual Performance. This variable was assessed using an individual performance rating scale that has demonstrated high coefficient alphas (e.g., > .80) in previous research (J. Lounsbury, personal communication, December, 1999). Ratings are based on 7 categories of performance including productivity, quality, openness to new learning, relationships with other associates, dependability and reliability, ability to function under stress, and attendance and timeliness. Raters are given behavioral examples for each category and then asked to rate team members using an 8-point scale. The 8-point response format included, 1 = Performance does not meet, or rarely meets, minimum job standards, 2 = Performance is less than satisfactory in many respects, 3 = Performance is satisfactory in most respects but not all, 4 = Performance is satisfactory in all respects, 5 = Performance is above average but not superior, 6 = Performance is superior in almost all respects, 7 = Performance is definitely superior in all respects, and

8 = Single best performance I have ever observed or even hope to observe. Statements regarding representative behavior for each category include: 1) "Achieves a high level of productivity on the job" and "Works hard to meet deadlines" for productivity; 2) "Is neat and orderly in his/her approach to tasks" and "Looks after the little details of a task to make sure everything is done right" for quality; 3) "Learns new job-related information quickly" and "Willingly tries out new procedures, practices, or equipment (does not show resistance, negativity, or opposition)" for openness to new learning; 4) "Relates to people at work in a friendly, cordial manner" and "Shows respect for individual differences/diversity" for relationships with other associates; 5) "Follows instructions fully even when he/she does not want to" and "Does not violate company rules or policy" for dependability and reliability; 6) "Keeps cool when jobs are time-pressured" and "Maintains composure even under very demanding work conditions" for ability to function under stress; 7) "Has a good attendance record" and "Gets to work a little early so that he/she can start work promptly" for attendance and timeliness.

Work Team Performance. This variable was assessed using a work team performance scale based on a taxonomy of team performance suggested by Ancona and Caldwell (1992). This scale contains items designed to assess a team's productivity, efficiency, adherence to quality, reliability, problem solving ability, conflict resolution skills, and work excellence. Team members, team leaders, and team customers used this measure to rate team performance. There are 14 total items including statements about the performance of the work team followed by a list of responses indicating the level of agreement. The response format contained a 5-point scale of agreement including, 1 =

strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Each measure included a stem in order to place the items in the appropriate context. Two different stems were used, one for team members and team leaders rating team performance and one for team customers rating team performance. They included, "Typically..."and "The _____ team...". Sample team performance items for team members and leaders include, "My team does an excellent job of figuring out what might prevent good performance in the future", "My team demonstrates a level of performance that could be described as excellent", "My team does the best possible work it is capable of--not settling for good enough", and "My team consistently performs very well." Team performance items for team customers were modified slightly due to the use of a different stem. Some of these included, "Has a good attendance record", "Initiates ideas about alternative solutions, instead of being passive or lazy about thinking up new ideas", and "Achieves a high level of productivity on the job."

Individual Level Variables

Individual Organizational Citizenship Behavior. This variable was scored based on the average of 12 items, with 3 items reverse scored. A maximum score for each item of 5 (representing the highest level of OCB) and a minimum score of 1 (representing the lowest level of OCB) yields a possible maximum score of 60 and minimum score of 12. The actual range was 42 with a minimum score of 18 and a maximum score of 60. The mean score was 48.47 and coefficient alpha was .76.

Individual Ratings of Team Organizational Citizenship Behavior. This variable was scored based on the sum of 13 items, with 3 items reverse scored. A maximum score

for each item of 5 (representing the highest level of team OCB) and a minimum score of 1 (representing the lowest level of team OCB) yields a possible maximum score of 65 and minimum score of 13. The actual range was 47 with a minimum score of 18 and a maximum score of 65. The mean score was 47.41 and coefficient alpha was .80.

*Individual Helping Behavior.* This variable was scored based on the sum of 7 items. A maximum score for each item of 5 (representing the highest level of helping behavior) and a minimum score of 1 (representing the lowest level of helping behavior) yields a possible maximum score of 35 and minimum score of 7. The actual range was 28 with a minimum score of 7 and a maximum score of 35. The mean score was 26.24 and coefficient alpha was .88.

*Individual Sportsmanship.* This variable was scored based on the sum of 3 items. A maximum score for each item of 5 (representing the highest level of sportsmanship) and a minimum score of 1 (representing the lowest level of sportsmanship) yields a possible maximum score of 15 and minimum score of 3. The actual range was 12 with a minimum score of 3 and a maximum score of 15. The mean score was 9.95 and coefficient alpha was .78.

*Individual Civic Virtue.* This variable was scored based on the sum of 3 items. A maximum score for each item of 5 (representing the highest level of civic virtue) and a minimum score of 1 (representing the lowest level of civic virtue) yields a possible maximum score of 15 and minimum score of 3. The actual range was 9 with a minimum score of 6 and a maximum score of 15. The mean score was 11.22 and coefficient alpha was .63.

Individual Customer Ratings of Team Organizational Citizenship Behavior. This variable was scored based on the average of 13 items, with 3 items reverse scored. A maximum score for each item of 5 (representing the highest level of OCB) and a minimum score of 1 (representing the lowest level of OCB) yields a possible maximum score of 65 and minimum score of 13. The actual range was 37 with a minimum score of 28 and a maximum score of 65. The mean score was 46.58 and coefficient alpha was .91.

Individual Ratings of Team Task Interdependence. This variable was scored based on the sum of 5 items. A maximum score for each item of 5 (representing the highest level of task interdependence) and a minimum score of 1 (representing the lowest level of task interdependence) yields a possible maximum score of 25 and minimum score of 5. The actual range was 17 with a minimum score of 8 and a maximum score of 25. The mean score was 19.27 and coefficient alpha was .75.

Individual Performance. This variable was scored based on the sum of 8 items. A maximum score for each item of 8 (representing the highest level of individual performance) and a minimum score of 1 (representing the lowest level of individual performance) yields a possible maximum score of 64 and minimum score of 8. The actual range was 46.50 with a minimum score of 17.5 and a maximum score of 64. The mean score was 41.93 and the coefficient alpha was .95.

Team Level Variables

There were 13 variables at the team level of analysis. They included: 1) aggregate individual organizational citizenship behavior; 2) team organizational citizenship behavior; 3) team helping behavior; 4) team sportsmanship; 5) team civic

virtue; 6) consistency of team organizational citizenship behavior over time 7) customer ratings of team level organizational citizenship behavior; 8) norm of team organizational citizenship behavior; 9) task interdependence; 10) aggregate individual performance; 11) team performance; 12) customer-rated team performance; and 13) team performance at time 2. The norm of team organizational citizenship behavior is an index of team level OCB that includes a combination of aggregate individual organizational citizenship behavior, team level organizational citizenship behavior, consistency of team organizational citizenship behavior over time, and customer ratings of team level organizational citizenship behavior. To calculate this index accurately each variable must account for an equal portion of the index score. Thus, it was necessary to calculate the average item score for each team member and then average these scores to produce an average team score ranging from 1 to 5. This prevents measures with more items from accounting for a greater portion of the index score. Below, average scores across items and members and summed scores averaged across members are both provided for variables included in the norm of team organizational citizenship behavior index variable.

Aggregate Individual Organizational Citizenship Behavior. Individual team members assessed individual OCB with themselves as the referent. This variable was scored based on the sum of 12 items, with 3 items reverse scored and was calculated as the average of team member scores. A maximum score for each item of 5 (representing the highest level of individual OCB) and a minimum score of 1 (representing the lowest level of individual OCB) yields a possible maximum score of 60 and minimum score of

12. The actual range was 24.50 with a minimum score of 32.5 and a maximum score of 57. The mean score was 48.05.

This variable was also calculated based on average scores across items and team members. A maximum score for each item of 5 (representing the highest level of OCB) and a minimum average score of 1 (representing the lowest level of OCB) yields a possible maximum average score of 5 and minimum score of 1. The actual range was 1.42 with a minimum score of 3.33 and a maximum score of 4.75. The mean score was 4.08. Higher numbers closer to 5 represent relatively higher levels of team OCB.

Team Organizational Citizenship Behavior. This variable was scored based on the sum of 13 items, with 3 items reverse scored and was calculated as the average of team member scores. A maximum score for each item of 5 (representing the highest level of team OCB) and a minimum score of 1 (representing the lowest level of team OCB) yields a possible maximum score of 65 and minimum score of 13. The actual range was 25 with a minimum score of 35 and a maximum score of 60. The mean score was 47.34.

This variable was also calculated based on average scores across items and team members. A maximum score for each item of 5 (representing the highest level of OCB) and a minimum average score of 1 (representing the lowest level of OCB) yields a possible maximum average score of 5 and minimum score of 1. The actual range was 2.0 with a minimum score of 2.69 and a maximum score of 4.69. The mean score was 4.08. Higher numbers closer to 5 represent relatively higher levels of team level OCB.

Individual team members assessed team OCB and these scores were aggregated and averaged due to unequal team size. Thus, it was necessary to assess inter-member agreement to determine if individual team member scores were suitable for aggregation to the team level. The James, Demaree, and Wolfe (1984) $r_{wg}$ statistic was used to calculate inter-member agreement. The average $r_{wg}$ score for teams was .84. Five teams had $r_{wg}$ scores less than the traditional cut-off of .70 and were eliminated from analyses involving team OCB.

Intraclass correlation coefficients were also calculated to assess team member agreement. ICC(1) was .23 and ICC(2) was .80. Both ICCs were significant.

*Helping Behavior.* This variable was scored based on the sum of 7 items and averaged across team members. A maximum score for each item of 5 (representing the highest level of team helping behavior) and a minimum score of 1 (representing the lowest level of team helping behavior) yields a possible maximum score of 35 and minimum score of 7. The actual range was 16.25 with a minimum score of 17 and a maximum score of 33.25. The mean score was 26.39.

*Sportsmanship.* This variable was scored based on the sum of 3 items and averaged across team members. A maximum score for each item of 5 (representing the highest level of team sportsmanship) and a minimum score of 1 (representing the lowest level of team sportsmanship) yields a possible maximum score of 15 and minimum score of 3. The actual range was 7.8 with a minimum score of 6 and a maximum score of 13.8. The mean score was 10.04.

*Civic Virtue.* This variable was scored based on the sum of 3 items and averaged across team members. A maximum score for each item of 5 (representing the highest level of team civic virtue) and a minimum score of 1 (representing the lowest level of team civic virtue) yields a possible maximum score of 15 and minimum score of 3. The actual range was 5.75 with a minimum score of 8 and a maximum score of 13.75. The mean score was 11.34.

Consistency of Team Organizational Citizenship Behavior Over Time. This variable was scored based on the sum of 13 items, with 3 items reverse scored. A maximum score for each item of 5 (representing the highest level of team OCB consistency) and a minimum score of 1 (representing the lowest level of team OCB consistency) yields a possible maximum score of 65 and minimum score of 13. The actual range was 34.0 with a minimum score of 31 and a maximum score of 65. The mean score was 48.37.

This variable was also calculated based on average scores across items. A maximum score for each item of 5 (representing the highest level of team OCB consistency) and a minimum average score of 1 (representing the lowest level of team OCB consistency) yields a possible maximum average score of 5 and minimum score of 1. The actual range was 2.62 with a minimum score of 2.38 and a maximum score of 5.0. The mean score was 3.77.

Customer-Rated Team Organizational Citizenship Behavior. This variable was scored based on the sum of 13 items, with 3 items reverse scored and was calculated as the average of team customer scores. A maximum score for each item of 5 (representing

the highest level of OCB) and a minimum score of 1 (representing the lowest level of OCB) yields a possible maximum score of 65 and minimum score of 13. The actual range was 28.5 with a minimum score of 28 and a maximum score of 56.5. The mean score was 45.06.

This variable was also calculated based on average scores across items and team members. A maximum score for each item of 5 (representing the highest level of OCB) and a minimum average score of 1 (representing the lowest level of OCB) yields a possible maximum average score of 5 and minimum score of 1. The actual range was 2.19 with a minimum score of 2.15 and a maximum score of 4.35. The mean score was 3.39. Higher numbers closer to 5 represent relatively higher levels of team level OCB.

Team customers assessed team OCB and these scores were aggregated and averaged due to an unequal number of customers per team. Thus, it was necessary to assess inter-member agreement to determine if individual team member scores were suitable for aggregation to the team level. The James, Demaree, and Wolfe (1984) $r_{wg}$ statistic was used to calculate inter-member agreement for those teams that had more than one customer rating. The average $r_{wg}$ score for teams with more than one customer was .85. Two teams had $r_{wg}$ scores less than the traditional cut-off of .70 and were eliminated from customer-rated OCB analyses.

Intraclass correlation coefficients were also calculated to assess team member agreement. ICC(1) was .44 and ICC(2) was .91. Both ICCs were significant.

Norm of Team Organizational Citizenship Behavior. The norm of team organizational citizenship behavior is an index of team level OCB that includes a

combination of aggregate individual organizational citizenship behavior, team level organizational citizenship behavior, consistency of team organizational citizenship behavior over time, and customer ratings of team level organizational citizenship behavior. To calculate this index accurately each variable must account for an equal portion of the index score. Thus, it was necessary to calculate the average item score for each team member and then average these scores to produce an average team score ranging from 1 to 5 for each index variable. This prevents measures with more items from accounting for a greater proportion of the index score.

A maximum score for each index variable of 5 (representing the highest level of OCB norms) and a minimum score for each index variable of 1 (representing the lowest level of OCB norms) yields a possible maximum aggregate score of 20 and minimum aggregate score of 4. The actual range was 7.57 with a minimum score of 10.10 and a maximum score of 17.67. The mean score was 14.42. Higher numbers closer to 20 represent relatively higher levels of team OCB norms. All team OCB norm scores including scores of component variables that were eliminated due to a lack of inter-member agreement, were excluded from all analyses involving norms of team OCB.

Task Interdependence. This variable was scored based on the sum of 5 items, and was calculated as the average of team member scores. A maximum score for each item of 5 (representing the highest level of task interdependence) and a minimum score of 1 (representing the lowest level of task interdependence) yields a possible maximum score of 25 and minimum score of 5. The actual range was 11.33 with a minimum score of 13.67 and a maximum score of 25. The mean score was 19.61.

This variable was also calculated based on average scores across items and team members. A maximum score for each item of 5 (representing the highest level of task interdependence) and a minimum average score of 1 (representing the lowest level of task interdependence) yields a possible maximum average score of 5 and minimum score of 1. The actual range was 2.27 with a minimum score of 2.73 and a maximum score of 5. The mean score was 3.9. Higher numbers closer to 5 represent relatively higher levels of task interdependence.

Team members assessed task interdependence and these scores were aggregated and averaged due to unequal team size. Thus, it was necessary to assess inter-member agreement to determine if individual team member scores were suitable for aggregation to the team level. The James, Demaree, and Wolfe (1984) $r_{wg}$ statistic was used to calculate inter-member agreement. The average $r_{wg}$ score was .85. Four teams had $r_{wg}$ scores less than the traditional cut-off of .70 and were eliminated from analyses involving task interdependence.

Intraclass correlation coefficients were also calculated to assess team member agreement. ICC(1) was .38 and ICC(2) was .76. Both ICCs were significant.

Aggregate Individual Performance. This variable was scored based on the sum of 8 items, and was calculated as the average of team member scores. A maximum score for each item of 8 (representing the highest level of individual performance) and a minimum score of 1 (representing the lowest level of individual performance) yields a possible maximum score of 64 and minimum score of 8. The actual range was 42 with a minimum score of 22 and a maximum score of 64. The mean score was 41.92.

This variable was also calculated based on average scores across items and team members. A maximum score for each item of 5 (representing the highest level of individual performance) and a minimum average score of 1 (representing the lowest level of individual performance) yields a possible maximum average score of 8 and minimum score of 1. The actual range was 5 with a minimum score of 3 and a maximum score of 8. The mean score was 5.25. Higher numbers closer to 5 represent relatively higher levels of individual performance.

Team Performance. This variable was scored based on the sum of 14 items. A maximum score for each item of 5 (representing the highest level of team performance) and a minimum score of 1 (representing the lowest level of team performance) yields a possible maximum score of 70 and minimum score of 14. The actual range was 40 with a minimum score of 29 and a maximum score of 69. The mean score was 53.54. Coefficient alpha for this measure was .92.

Customer-Rated Team Performance. This variable was scored based on the sum of 14 items and was calculated as the average of team customer scores. A maximum score for each item of 5 (representing the highest level of team performance) and a minimum score of 1 (representing the lowest level of team performance) yields a possible maximum score of 70 and minimum score of 14. The actual range was 36 with a minimum score of 30 and a maximum score of 66. The mean score was 47.26.

This variable was also calculated based on average scores across items and team customers. A maximum score for each item of 5 (representing the highest level of team performance) and a minimum average score of 1 (representing the lowest level of team

performance) yields a possible maximum average score of 5 and minimum score of 1. The actual range was 2.57 with a minimum score of 2.14 and a maximum score of 4.71. The mean score was 3.38. Higher numbers closer to 5 represent relatively higher levels of team performance.

Customers assessed team performance and these scores were aggregated and averaged due to an unequal number of customers per team. Thus, it was necessary to assess inter-member agreement to determine if individual team member scores were suitable for aggregation to the team level. The James, Demaree, and Wolfe (1984) $r_{wg}$ statistic was used to calculate inter-member agreement for those teams that had more than one customer rating. The average $r_{wg}$ score for teams with more than one customer was .82. Four teams had $r_{wg}$ scores less than the traditional cut-off of .70 and were eliminated from analyses involving customer-rated performance.

Intraclass correlation coefficients were also calculated to assess team member agreement. ICC(1) was .57 and ICC(2) was .95. Both ICCs were significant.

Team Performance at Time 2. This variable was scored based on the sum of 14 items. A maximum score for each item of 5 (representing the highest level of team performance) and a minimum score of 1 (representing the lowest level of team performance) yields a possible maximum score of 70 and minimum score of 14. The actual range was 39 with a minimum score of 31 and a maximum score of 70. The mean score was 52.58.

## 3. Results

Data Analysis

Individual Level. Individual team leaders, team members, and team customers participated in this study (N = 209). Individual scale scores were summed to create individual variables.

Team Level. There were a total of 52 teams included at the team level of analysis. However, some analyses did not include the entire sample of work teams. That is, when assessed on suitability for aggregation some teams demonstrated low levels of agreement (i.e., using the James et al., 1984 $r_{wg}$ statistic) and were excluded.

*Team OCB.* The average $r_{wg}$ score for team OCB was .84. Five teams had $r_{wg}$ scores lower than the recommended cut-off of .70. These teams were eliminated from analyses involving team OCB resulting in a total of 47 teams. ICC (1) was .23 and ICC (2) was .80. Both ICCs were significant.

*Customer-Rated Team OCB.* The average $r_{wg}$ score for customer-rated team OCB was .85. Two teams had scores lower than .70 and were eliminated from applicable analyses. The remaining 50 teams were included in analyses involving customer-rated team OCB. ICC (1) was .44 and ICC (2) was .91. Both ICCs were significant.

*Customer-Rated Team Performance.* The average $r_{wg}$ score for customer-rated team performance was .82. Four teams had scores lower than .70 and were eliminated from applicable analyses. The remaining 48 teams were included in analyses involving customer-rated team performance. ICC (1) was .57 and ICC (2) was .95. Both ICCs were significant.

*Task Interdependence.* The average $r_{wg}$ score for task interdependence was .85 with four teams scoring below the traditional .70 cut-off. This resulted in a total of 48 teams being included in analyses involving task interdependence. ICC (1) was .38 and ICC (2) was .76. Both ICCs were significant.

Hypotheses 1, 2, 3, 4, 5, and 7 were tested using the Pearson r correlation coefficient (Pearson, 1951). Hypotheses 8a and 8b were tested using regression analyses. Hypotheses 6a, 6b, 9a, and 9b were tested using hierarchical moderated regression analyses (Aiken & West, 1991; James & Brett, 1984).

Individual Level Results

To qualify for parametric analysis, all data was assessed for normality. All individual level variables were approximately normally distributed. Individual level means, standard deviations, and correlations are presented in Table 4. Individual organizational citizenship behavior and individual ratings of team OCB were strongly correlated, as were age, organization tenure, and team tenure.

Hypothesis 1a and 1b. Hypothesis 1a proposed that individual OCB correlates positively with individual performance. This prediction was not supported. Individual OCB was not related to individual performance ($r = -.07$, $p > .05$).

Hypothesis 1b proposed that individual ratings of team OCB correlates positively with individual performance. This prediction was not supported ($r = .06$, $p > .05$).

None of the demographic variables correlated with any of the predictor or criterion variables. Age was related to tenure with the organization and tenure with the

Table 4

Individual Level Means, Standard Deviations, Reliabilities, and Correlations.

| | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | 38.42 | 11.16 | | | | | | | | | | | |
| Gender | 1.57 | .50 | .05 | | | | | | | | | | |
| Education | 4.81 | 1.40 | .12 | -.01 | | | | | | | | | |
| Tenure | 46.98 | 61.15 | .33** | .07 | .15* | | | | | | | | |
| Team Tenure | 37.83 | 56.75 | .36** | .11 | .11 | .65** | | | | | | | |
| OCB | 48.47 | 5.90 | .08 | .07 | .002 | .04 | -.03 | (.76) | | | | | |
| Team OCB | 47.41 | 8.20 | .03 | .11 | -.08 | .04 | -.01 | .56** | (.80) | | | | |
| Helping | 26.24 | 4.72 | .02 | .07 | -.03 | .06 | .01 | .54** | .94** | (.88) | | | |
| Sportsmanship | 9.95 | 2.91 | -.01 | .15* | -.13 | -.06 | -.08 | .36** | .76** | .55** | (.78) | | |
| Civic Virtue | 11.22 | 2.10 | .08 | .05 | -.04 | .10 | .06 | .47** | .76** | .67** | .35** | (.63) | |
| Performance | 41.93 | 10.00 | -.01 | .08 | -.11 | -.04 | -.01 | -.07 (H1a) | .06 (H2a) | .07 | .002 | .06 | (.95) |

Note. * = $p < .05$. ** = $p < .01$. ( ) = Diagonal entries are coefficient alpha reliability estimates.

team ($r$ = .33 and $r$ = .38, $p$ < .01 respectively). Interestingly, education was positively correlated with tenure with the organization ($r$ = .15, $p$ < .05).

Team Level Results

Normality was assessed for all data to determine the appropriateness of using parametric statistical analyses. All team level data was approximately normally distributed.

All sample sizes, means, standard deviations, and correlations at the team level are reported in Table 5. The internal consistency of all measures was assessed using Cronbach's coefficient alpha (Cronbach, 1951). Each measure exceeded the traditional cut-off score of .70 (Nunnally, 1967, 1978).

Hypothesis 2a. Hypothesis 2a proposed that aggregate individual OCB correlates positively with concurrent team performance. This prediction was strongly supported. Aggregate individual OCB correlated positively with aggregate individual performance ($r$ = .49, $p$ < .01), team performance ($r$ = .33, $p$ < .05), and customer-rated performance ($r$ = .36, $p$ < .05).

Hypothesis 2b. Hypothesis 2b proposed that aggregate individual OCB correlates positively with subsequent performance. This prediction was supported. Aggregate individual OCB was positively related to team performance at time 2 ($r$ = .43, $p$ < .05).

Table 5

Team Level Sample Sizes, Means, Standard Deviations, and Correlations.

| | Variable | N | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Aggregate Individual OCB | 52 | 48.05 | 4.61 | - | | | | | | | | | | | | |
| 2 | Overall Team OCB | 46 | 47.77 | 5.77 | .60** | (.80) | | | | | | | | | | | |
| 3 | Team Helping Behavior | 46 | 26.39 | 3.23 | .60** | .94** | - | | | | | | | | | | |
| 4 | Team Sportsmanship | 46 | 10.04 | 2.08 | .38** | .79** | .57** | - | | | | | | | | | |
| 5 | Team Civic Virtue | 46 | 11.34 | 1.36 | .53** | .81** | .72** | .47** | - | | | | | | | | |
| 6 | Consistency of Team OCB | 52 | 48.37 | 8.14 | .43** | .72** | .67** | .57** | .59** | - | | | | | | | |
| 7 | Customer Ratings of Team OCB | 44 | 43.82 | 7.04 | .41** | .56** | .48** | .47** | .57** | .35* | (.91) | | | | | | |
| 8 | Team Norms of OCB | 44 | 14.37 | 1.98 | .51** | .69** | .64** | .60** | .53** | .73** | .78** | - | | | | | |
| 9 | Task Interdependence | 49 | 19.80 | 2.74 | .44** | .48** | .52** | .20 | .47** | .16 | .32* | .43** | (.76) | | | | |
| 10 | Aggregate Individual Performance | 50 | 41.92 | 9.88 | .49** (H2a) | .45** (H3a) | .50** | .19 | .44** | .31* | .21 | .31* | .38** | - | | | |
| 11 | Team Performance | 52 | 53.54 | 8.61 | .33* (H2a) | .60** (H3a) | .55** (H3b) | .48** (H3c) | .51** (H3d) | .73** | .43** (H5b) | .56** (H7a) | .19 | .46** | - | | |
| 12 | Customer-Rated Team Performance | 42 | 47.17 | 9.72 | .36* | .47** (H4) | .40* | .45** | .44** | .35* | .80** (H5a) | .67** (H7c) | .07 | .07 | .35* | (.95) | |
| 13 | Team Performance at Time 2 | 25 | 52.80 | 9.29 | .43* (H2b) | .50** (H3e) | .37 | .66** | .18 | .38 | .46* (H5c) | .40 (H7b) | .47* | .28 | .43* | .37 | - |

Note. * = p < .05. ** = p < .01. H = hypothesis. OCB = Organizational Citizenship Behavior. ( ) = Diagonal entries include intraclass correlation coefficient estimates of agreement.

Hypothesis 3a. Hypothesis 3a proposed that overall team OCB correlates positively with concurrent team performance. This prediction was strongly supported. Team OCB demonstrated a significant, positive correlation with aggregate individual performance ($r = .45$, $p < .01$) and team performance at time 1 ($r = .60$, $p < .01$).

Hypothesis 3b. Hypothesis 3b proposed that team helping behavior correlates positively with work team performance. This prediction was supported strongly. Team helping behavior was highly correlated with team performance ($r = .55$, $p < .01$).

Hypothesis 3c. Hypothesis 3c proposed that team sportsmanship correlates positively with work team performance. Results provided strong support for this prediction. Team sportsmanship was highly correlated with team performance ($r = .48$, $p < .01$).

Hypothesis 3d. Hypothesis 3d proposed that team civic virtue correlates positively with work team performance. Findings lended support to this prediction. Team civic virtue and team performance were found to be significantly correlated ($r = .51$, $p < .01$).

Hypothesis 3e. Hypothesis 3e proposed that overall team OCB correlates positively with subsequent work team performance. This prediction was supported strongly. Overall team OCB was highly correlated with team performance at time 2 ($r = .50$, $p < .01$).

Hypothesis 4. Hypothesis 4 proposed that overall team OCB correlates positively with customer-rated team performance. This prediction was supported. Overall team OCB and customer-rated team performance were positively related ($r = .47$, $p < .01$).

Hypothesis 5a. Hypothesis 5a proposed that customer-rated team OCB correlates positively with customer-rated performance. This was strongly supported with the variables demonstrating the highest correlation coefficient among all team level variables ($r = .80$, $p < .01$).

Hypothesis 5b. Hypothesis 5b proposed that customer-rated team OCB correlates positively with concurrent team performance. Partial support was found for this prediction. Customer-rated team OCB demonstrated a significant correlation with team performance at time 1 ($r = .43$, $p < .01$), but not aggregate individual performance ( $r = .21$, $p > .05$).

Hypothesis 5c. Hypothesis 5c proposed that customer-rated team OCB correlates with subsequent team performance. Results demonstrated support for this prediction. Customer-rated team OCB was positively related to team performance at time 2 ($r = .46$, $p < .05$).

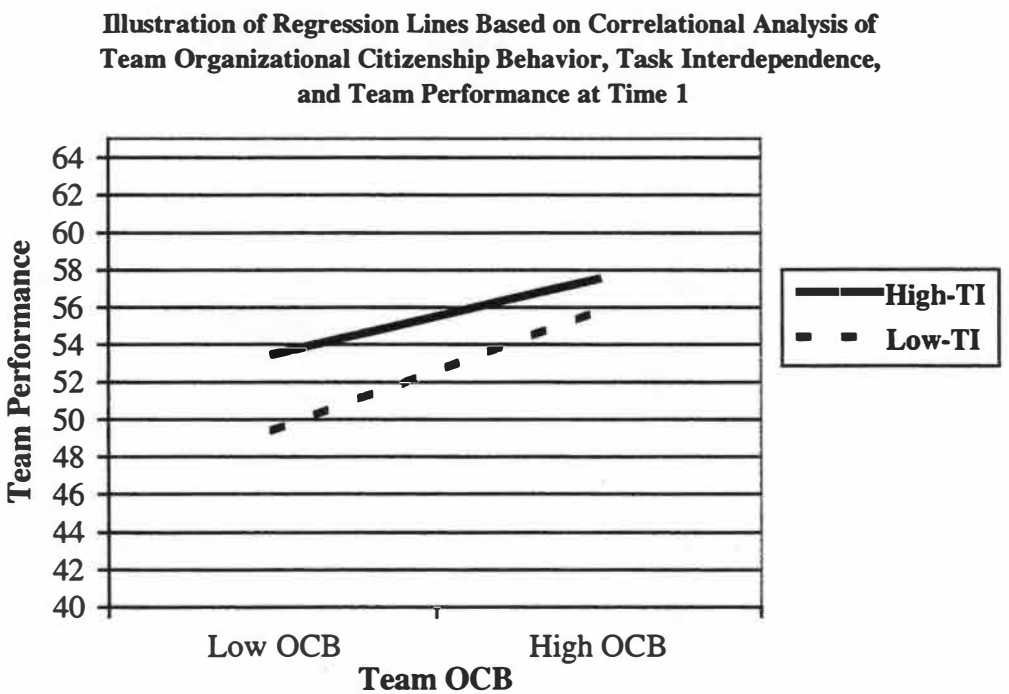
Hypothesis 6a. Hypothesis 6a proposed that team task interdependence moderates the relationship between team OCB and concurrent team performance, such that the relationship is stronger as task interdependence increases. Procedures described by Aiken and West (1991) and James and Brett (1984) were used to test for a moderated relationship. When the addition of the interaction term (team OCB * task interdependence) in the regression equation results in a significant increment in the amount of variance accounted for in the dependent variable beyond that accounted for by the predictors, moderation is demonstrated.

Results failed to provide support for this prediction. Team OCB accounted for 37% of the variance in concurrent team performance, while task interdependence accounted for no additional variance. Team OCB * task interdependence accounted for no additional variance in team performance beyond that accounted for by team OCB and task interdependence. However, a model consisting of team OCB, task interdependence, and their multiplicative (i.e., interaction term) was significantly related to concurrent team performance, $F(3, 37) = 7.60$, $p < .01$.

Figure 2 shows mean performance scores for teams that were: 1) high in task interdependence and both high and low in team OCB ($N = 26$); 2) low in task interdependence and both high and low in team OCB ($N = 17$). High scores are defined as those above the population mean for each variable and low scores are defined as those below the population mean.

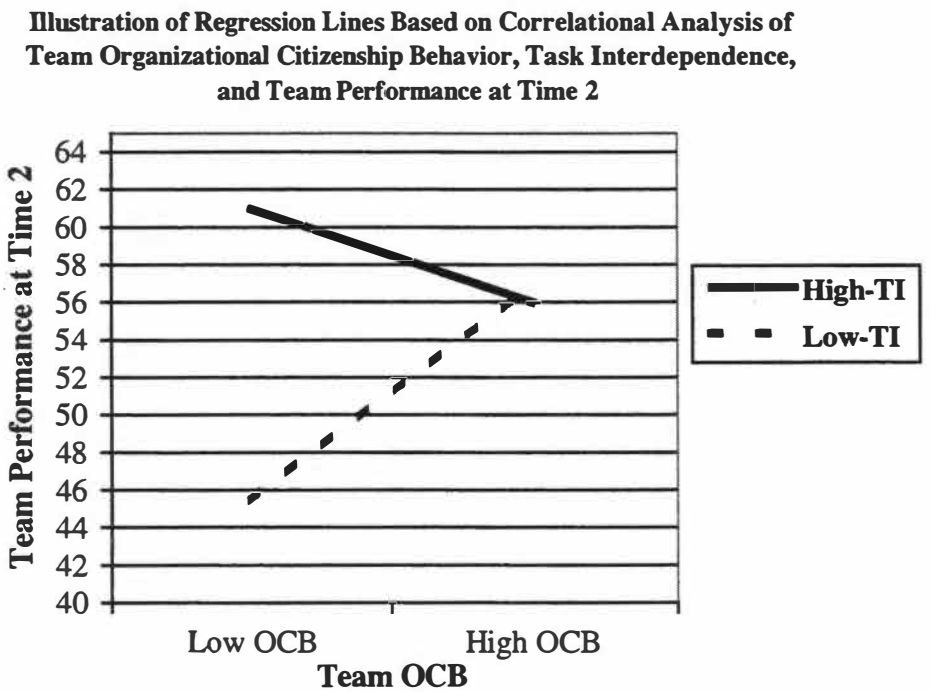
Hypothesis 6b. Hypothesis 6b proposed that team task interdependence moderates the relationship between team OCB and subsequent team performance, such that the relationship is stronger as task interdependence increases. Procedures described by Aiken and West (1991) and James and Brett (1984) were used to test for a moderated relationship.

Results provided strong support for the moderating impact of task interdependence, but the relationships were different than predicted (please see Figure 3). Team OCB and task interdependence accounted for 41% of the variance in team performance at time 2, $F(2, 16) = 5.61$, $p < .05$. The addition of the team OCB * task




Note. OCB = Organizational Citizenship Behavior. TI = Task Interdependence

Figure 2. Relationship between organizational citizenship behavior, task interdependence, and concurrent team performance.




Note. OCB = Organizational Citizenship Behavior. TI = Task Interdependence.

Figure 3. Relationship between organizational citizenship behavior, task interdependence, and subsequent team performance.

interdependence interaction term accounted for an additional 14% of the variance. The model consisting of team OCB, task interdependence, and their multiplicative (i.e., the interaction term) was a significant predictor of team performance at time 2, $F(3, 15) = 6.00$, $p < .01$.

Figure 3 shows mean performance scores for teams that were: 1) high in task interdependence and both high and low in team OCB ($N = 12$); 2) low in task interdependence and both high and low in team OCB ($N = 8$). High scores are defined as those above the population mean for each variable and low scores are defined as those below the population mean. As illustrated in Figure 3 it seems that teams high in both task interdependence and OCB performed more poorly compared with teams low in task interdependence and high in OCB.

Hypothesis 7a. Hypothesis 7a proposed that norms of OCB correlates positively with concurrent team performance. Norms of OCB is an index variable comprised of aggregate individual OCB, overall team OCB, consistency of team OCB over time, and customer ratings of team OCB. Results demonstrated strong support for this prediction. Team norms of OCB was positively correlated with aggregate individual performance and team performance at time 1 ($r = .31$, $p < .05$ and $r = .56$, $p < .01$, respectively).

Hypothesis 7b. Hypothesis 7b proposed that norms of OCB correlates with subsequent team performance. Results provided only marginal support for this prediction. A non-significant correlation was found between team norms of OCB and team performance at time 2 ($r = .40$, $p > .05$).

Hypothesis 7c. Hypothesis 7c proposed that team norms of OCB correlates with customer-rated performance. This prediction was strongly supported. Team norms of OCB and customer-rated performance were found to be significantly correlated ($r = .67$, $p < .01$).

Hypothesis 8a. Hypothesis 8a proposed that team norms of OCB compared with individual OCB, is a better predictor of concurrent team performance. Team norms of OCB and individual OCB were each regressed onto team performance at time 1. Findings provide strong support for this prediction with team norms of OCB accounting for substantially more variance (31%) in team performance compared with individual OCB (< 1%). Team norms of OCB was found to be a significant predictor of team performance at time 1, $F(1, 42) = 18.67$, $p < .001$, while individual OCB as a predictor of team performance at time 1 was not significant, $F(1, 42) = .20$, $p > .05$.

Hypothesis 8b. Hypothesis 8b proposed that team norms of OCB compared with individual OCB, is a better predictor of subsequent team performance. Team norms of OCB and individual OCB were each regressed onto team performance at time 2. Findings failed to support this prediction with norms of OCB accounting for virtually the same amount of variance in team performance at time 2 compared with individual OCB (16% and 15%, respectively). Team norms of OCB was not significantly related to team performance, $F(1, 18) = 3.37$, $p > .05$. Individual OCB as a predictor of team performance also failed to reach significance, $F(1, 23) = 3.13$, $p > .05$.

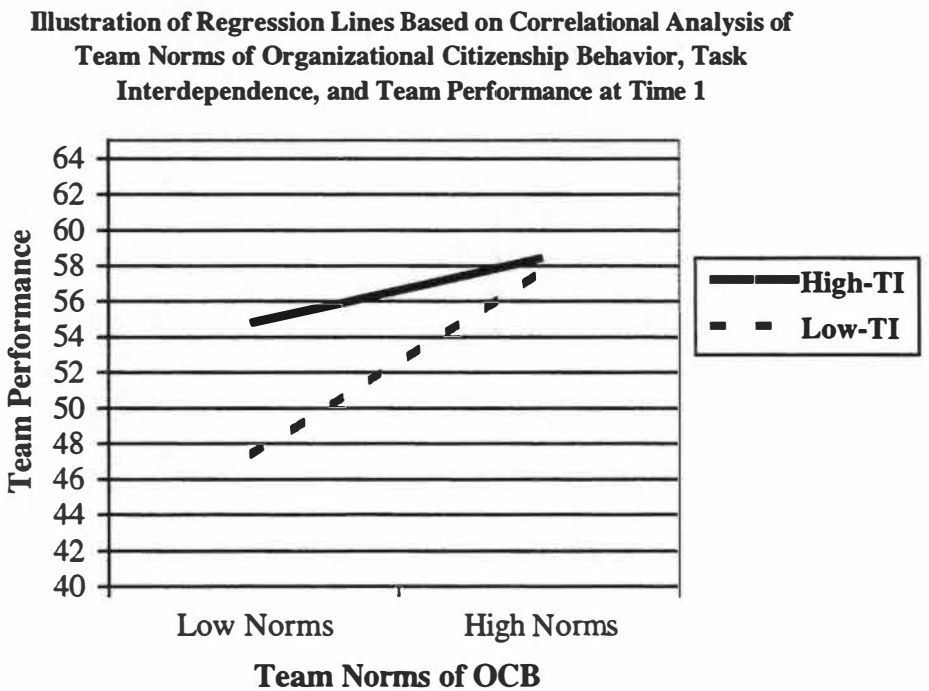
Hypothesis 9a. Hypothesis 9a proposed that work team task interdependence moderates the relationship between team norms of OCB and concurrent team

performance, such that the relationship is stronger as task interdependence increases. Procedures described by Aiken and West (1991) and James and Brett (1984) were used to test for a moderated relationship. When the addition of the interaction term (norms of OCB * task interdependence) in the regression equation results in a significant increment in the amount of variance accounted for in the dependent variable beyond that accounted for by the predictors, moderation is demonstrated.

Results failed to provide support for this prediction. Team norms of OCB accounted for 33% of the variance in team performance at time 1, while task interdependence accounted for no additional variance. Team norms of OCB * task interdependence accounted for no additional variance in team performance beyond that accounted for by norms of OCB and task interdependence. However, a model consisting of team norms of OCB, task interdependence, and their multiplicative (i.e., interaction term) was significantly related to team performance at time 1, $F(3, 37) = 6.19$, $p < .01$.

Figure 4 shows mean performance scores for teams that were: 1) high in task interdependence and both high and low in team norms of OCB ($N = 23$); 2) low in task interdependence and both high and low in team norms of OCB ($N = 17$). High scores are defined as those above the population mean for each variable and low scores are defined as those below the population mean.

Hypothesis 9b. Hypothesis 9b proposed that work team task interdependence moderates the relationship between team norms of OCB and subsequent team performance, such that the relationship is stronger as task interdependence increases.



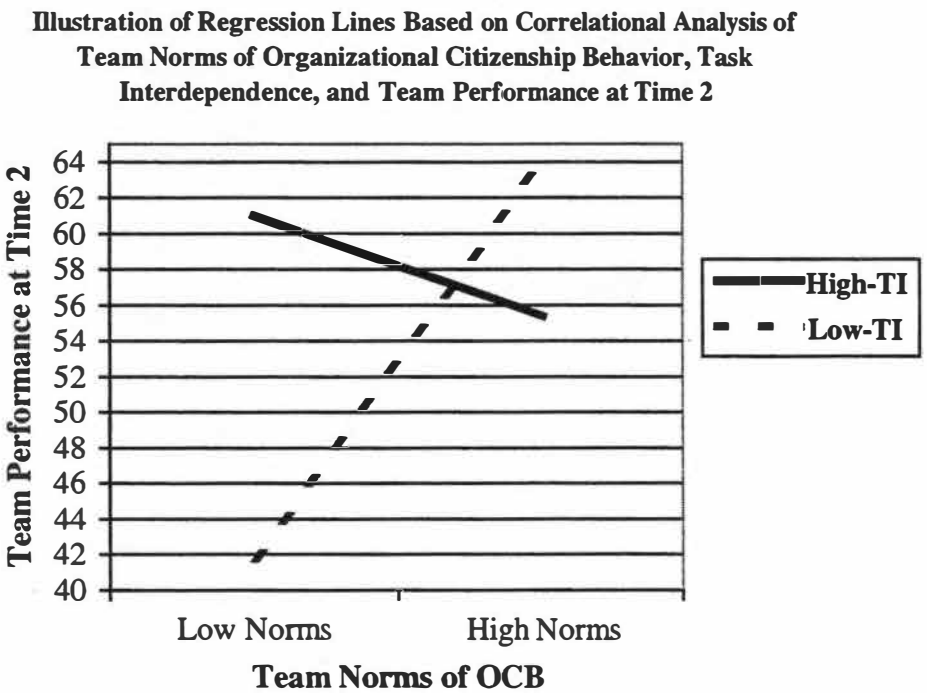

Note. OCB = Organizational Citizenship Behavior. TI = Task Interdependence

Figure 4. Relationship between team norms of organizational citizenship behavior, task interdependence, and concurrent team performance.

Procedures described by Aiken and West (1991) and James and Brett (1984) were used to test for a moderated relationship.

Results provided strong support for the moderating impact of task interdependence, but in a different way than predicted (please see Figure 5). Team norms of OCB and task interdependence accounted for 38% of the variance in team performance at time 2, $F(2, 16) = 4.89$, $p < .05$. The addition of the team norms of OCB * task interdependence interaction term accounted for an additional 9% of the variance. In addition, the model consisting of team norms of OCB, task interdependence, and their multiplicative (i.e., the interaction term) was a significant predictor of team performance at time 2, $F(3, 15) = 4.45$, $p < .05$.

Figure 4 shows mean performance scores for teams that were: 1) high in task interdependence and both high and low in team norms of OCB ($N = 12$); 2) low in task interdependence and both high and low in team norms of OCB ($N = 7$). High scores are defined as those above the population mean for each variable and low scores are defined as those below the population mean. As illustrated in Figure 5, it seems that teams high in team norms of OCB and low in task interdependence performed better than teams high in both team norms of OCB and task interdependence.




Note. OCB = Organizational Citizenship Behavior. TI = Task Interdependence

Figure 5. Relationship between team norms of organizational citizenship behavior, task interdependence, and subsequent team performance.

## 4. Discussion

Hypotheses 2, 3, 4, 5, and 7 were supported, hypotheses 6, 8, and 9 were partially supported, and hypothesis 1 was not supported.

Individual Level

Hypotheses 1a and 1b. Individual performance correlates positively with individual OCB and individually rated team OCB.

Individual team member performance did not correlate positively with individual OCB or individually rated team OCB. These results contradict previous findings linking OCB and performance at the individual level (Allen & Rush, 1998; MacKenzie, Podsakoff, & Fetter, 1991; Podsakoff & MacKenzie, 1994; Randall et al., 1999; Shore, Barksdale, & Shore, 1995).

Researchers have suggested that OCB may not be strongly related to performance at the individual level because individual acts of helping behavior or civic virtue aren't likely to make a powerful difference (Bateman & Organ, 1983; Organ, 1988; Podsakoff, Ahearne, & MacKenzie, 1997). In fact, Organ (1988) referred to individual acts of OCB as "modest" and "trivial" regarding their impact on organizational performance. Another possible explanation for these findings may lie in Schneider's Attraction-Selection-Attrition framework (Schneider, 1987).

The ASA framework suggests that similar types of people will be attracted to an organization, selected for employment by that organization, and retained by that organization. This may result in organizations having a restricted range of employees who share similar personality characteristics and who engage in similar behaviors like

OCB. It is possible that the organizations included in this study each had employees who were similar enough to not vary on OCB, thus reducing the possibility of significant correlations between OCB and performance at the individual level. However, because participants in this study came from six different organizations it is unlikely that the ASA process would result in enough range restriction across organizations to significantly limit correlations.

The individual level results from this study also contradict the selection literature arguing that OCB should be considered an important criterion variable because it has been found to consistently account for large portions of the variance in supervisor-rated performance (Borman & Motowidlo, 1997; Borman, White, & Dorsey, 1995; Motowidlo & Van Scotter, 1994). Individual level OCB didn't account for any variance in supervisor-rated performance in this study. However, results differed dramatically at the team level of analysis.

Team Level OCB

Hypotheses 2 and 3. Aggregate individual OCB and overall team OCB correlate positively with concurrent and subsequent team performance.

Aggregate individual OCB correlates with both team performance at time 1 and team performance at time 2.

Overall team OCB also correlates strongly with both team performance at time 1 and time 2. This supports previous findings suggesting a strong relationship between team level OCB and team performance (MacKenzie et al., 1996; Podsakoff, Ahearne, & MacKenzie, 1997). Interestingly, overall team OCB demonstrated a stronger relationship

with concurrent team performance compared with aggregate individual OCB ($r$ = .60 vs. $r$ = .33). This may be due to the fact that individual acts of OCB, even when aggregated still represent individual perceptions of one's own level of citizenship behavior. A team member may believe strongly that he or she engages in OCBs directed towards the team, when they actually do not. Individual perceptions of a *team's* level of OCB may be more accurate because citizenship behaviors are more obvious at the team level. The stronger correlation between team OCB and team performance may also be attributed to common method variance since both variables were rated by team leaders. This issue will be addressed more substantively later in this discussion.

Supporting hypotheses 3b, 3c, and 3d, team helping behavior, team sportsmanship, and team civic virtue each correlated strongly with team performance. These findings partially support the literature in this area (George & Bettenhausen, 1990; MacKenzie et al., 1996; Podsakoff, Ahearne, & MacKenzie, 1997). One contradiction is highlighted in a study by Podsakoff, Ahearne, and MacKenzie (1997). These researchers found a positive relationship between helping behavior, sportsmanship and performance quantity, but a negative relationship between helping and performance quality. Furthermore, Podsakoff, Ahearne, and MacKenzie (1997) found that civic virtue was not related to either type of performance. The contradictory results between the present study and those of Podsakoff, Ahearne, and MacKenzie (1997) could be due to the different types of teams and performance criteria used.

Podsakoff, Ahearne, and MacKenzie (1997) studied production teams who were charged with producing bond and catalog paper. The lack of a relationship between

sportsmanship, civic virtue, and quality may have occurred because production teams simply aren't benefited by increased levels of sportsmanship and civic virtue. Production teams consist of frontline employees who repeatedly produce specific outputs (Sundstrom & Associates, 1999). Behaviors including not complaining to team members (i.e., sportsmanship) may enhance motivation by making team member attitudes more positive, but this may not translate into the production of higher quality paper. The present study consisted primarily of service teams. Service teams typically conduct repeated actions with customers (Sundstrom & Associates, 1999). An increase in team members' positive attitude due to a lack of complaining (i.e., sportsmanship) may have an impact on the way these team members deal with customers, thus contributing to improved performance. There is also a time element to consider.

It is possible that OCB interferes with performance in production teams because it takes time that would otherwise be spent working. That is, team members taking time to help other team members may slow down the production process. The nature of tasks performed by production teams may be such that high levels of OCB take too much time and end up interfering with performance. Another possibility for the contradictory results involves the use of different types of criteria.

Podsakoff, Ahearne, and MacKenzie (1997) used objective criteria in assessing performance, while this study used subjective ratings of performance. Supervisor ratings of performance may be more sensitive to the relative impact of OCB compared to quantity and quality indicators (Borman & Motowidlo, 1997; Borman, White, & Dorsey, 1995; Motowidlo & Van Scotter, 1994).

The relationship found between helping behavior and team performance supports previous findings at the team level (George, 1990; George & Bettenhausen, 1990). Specifically, studies by George (1990) and George and Bettenhausen (1990) examined helping behavior directed at customers.

Hypothesis 4. Team OCB correlates positively with customer-rated performance.

This study found that team OCB correlated positively with customer-rated performance. There is a relative paucity of team level research using customer-rated performance as a criterion measure. Several team level studies that have collected criterion data from customers include Carter and West (1998), Janz, Colquitt, and Noe, (1997), Jehn (1997), Neuman et al. (1999), Pritchard et al. (1988), and Wageman (1995). However, none of these studies had customers directly rate team performance. Rather, criterion data in these studies ranged from customer satisfaction to an index of customer complaints. Collecting performance data from customers may offer a more accurate view of team performance because customers do not generally have any motivation for providing inflated or deflated ratings. In addition, customers are typically in the best position to provide performance ratings because they are directly affected by teams' performance.

This finding is particularly important considering that common method variance has been identified as affecting a majority of the research examining the team OCB and performance relationship (Podsakoff et al., 2000). Data supporting hypothesis 4 indicated that the level of team OCB as rated by team members and leaders was highly related to team performance as rated by customers. Following this logic, it may also be

valuable for customers who are in frequent contact with teams to evaluate their level of OCB.

Hypothesis 5a. Customer-rated OCB correlates positively with customer-rated performance.

Customer-rated OCB correlated strongly with customer-rated performance. This finding seems logical based on previous results finding that OCB correlates with team performance. When a team's external customer receives help with a specific problem (i.e., helping behavior) or an internal customer consistently sees team members suggesting ways to improve team performance (i.e., civic virtue), it is likely that this team will perform at a higher level compared with teams who's customers don't experience the same behaviors. However, it also seems likely that common method variance may account for the extremely high correlation (i.e., $r = .80$, $p < .01$) between customer-rated OCB and performance. This highlights the importance of assessing the relationship between team OCB and performance as perceived by different rater groups.

Hypotheses 5b & 5c. Customer-rated team OCB correlates positively with concurrent and subsequent team performance.

Customer-rated OCB correlated with team performance at time1 and team performance at time 2.

This supports past findings demonstrating positive relationships between citizenship-type behaviors and team performance (George, 1990; George & Bettenhausen, 1990). George (1990) found that helping behaviors directed towards customers were related to a decrease in teams' negative affective tone. This may indeed

highlight one way in which higher levels of customer-rated team OCB is related to better team performance. Teams that consistently work together to help customers, don't complain to each other about trivial issues, and suggest ways to improve customer service by definition work within a hospitable team environment. This type of environment may improve the mood of team members resulting in better performance and improved viability. Furthermore, this dynamic may be enhanced if team members are dependent upon one another to achieve team goals. This points to the possible importance of interdependence as a moderator between team OCB and team performance.

Hypotheses 6a & 6b. Team task interdependence moderates the relationship between team OCB and team performance at time 1 and time 2, such that the relationships are stronger as task interdependence increases.

Support was found for the moderating relationship of task interdependence between team OCB and team performance at time 2, but not time 1. However, post hoc analyses of mean scores revealed that the relationship was different than originally proposed. Teams high in task interdependence and OCB did not perform as well as teams that demonstrated high task interdependence and low OCB. Furthermore, teams rated low on task interdependence and high on OCB performed about as well as teams rated high on both.

In general, this adds evidence to current findings on the importance of task interdependence to team performance (Saavedra, Earley, & Van Dyne, 1993; DeMatteo, Eby, & Sundstrom, 1998; Wageman, 1995, 1999). This finding also supports a prediction by Podsakoff, Ahearne, and MacKenzie (1997) that task interdependence may

be a key moderator of the team OCB-team performance relationship. Podsakoff et al. (1997) stated, "...differences in the relationship obtained between helping behavior and work unit performance in the two studies may in part reflect differences in the nature of the dependency relationships required in the two different types of jobs..."

Task interdependence is the degree to which completing tasks requires the interaction of group members. The more team members depend on each other to perform tasks, the greater the importance of joint, cooperative efforts. OCB represents the essence of cooperative behavior and logically should have a more significant impact on performance for work teams with a high degree of task interdependence. However, the unexpected finding that team OCB, task interdependence, and team performance at time 2 are related in a different way than initially hypothesized raises some important questions.

Teams rated as high in OCB performed equally well whether they were high or low on task interdependence, while the best performing teams were rated low on OCB and high on task interdependence. It's possible that high levels of task interdependence and team OCB cancel each other out. That is, team members that are highly interdependent spend a significant amount of time working together to accomplish team tasks and may not have time to engage in a lot of citizenship behaviors. When they do, it may detract from performance. It should be noted that at times 1 and 2, teams low in team OCB and task interdependence were consistently the worst performers.

Team Norms of OCB

OCB represents a relatively straightforward set of behaviors, but when OCB is assessed at the team level several key measurement issues are created. It may not be enough to simply aggregate individual scores on an OCB measure and then label this mean score as representative of team level OCB. For example, a work team that has a high degree of variability on individual OCB is not likely to realize the full benefits of OCB on team performance. That is, a team that has only a few members frequently engaging in OCB will realize some performance benefit, but not compared with the synergy realized from a team where a majority of members carry out citizenship behaviors. If most members of a team frequently engage in organizational citizenship behavior (i.e., aggregate individual OCB and team OCB), it is an expected form of behavior, it is performed consistently (i.e., consistency of team OCB over time), and is explicitly related to how the team is perceived (i.e., customer-rated team OCB)--or in other words, if it is a team norm--then performance may increase exponentially. Norms may contribute to or detract from group performance depending on their structure (Seashore, 1954), but the key role they play in the functioning of teams indicates they may be essential ingredients in the measurement of team level variables (Asch, 1951; George & Bettenhausen, 1990; Jehn, 1995; Seashore, 1954; Sherif, 1936; Wageman, 1995). Accurately measuring team level OCB may require it to be conceptualized as a team norm.

Hypotheses 7a, 7b, & 7c. Team norms of OCB correlates positively with concurrent team performance, subsequent team performance, and customer-rated team performance.

Team norms of OCB correlated positively with concurrent team performance, subsequent team performance, and customer-rated team performance.

This supports existing research which has found that positive, functional group norms tend to improve performance (Hackman, 1976; Seashore, 1954). These results seem logical. First, team norms of OCB represented by team members going out of their way to help each with work related problems is thought to decrease the need for manager involvement and promote self-management. Second, team norms of OCB represented by experienced team members training new ones may increase individual team members' ability to accomplish specific tasks and enhance the team's ability to accomplish overall team goals. Third, team norms of OCB represented by team members actively participating in team meetings will probably improve work team coordination. Finally, team norms of OCB represented by team members engaging in helpful and cooperative behaviors will naturally create a more pleasant place to work. This enhanced work environment may increase the team's ability to attract and keep the most talented employees.

Hypotheses 8a & 8b. Team norms of OCB compared with individual OCB, is a better predictor of concurrent and subsequent team performance.

Team norms of OCB compared with individual OCB accounted for a larger portion of the variance in team performance at time 1 (i.e., 31% and .01%, respectively),

but not time 2 (i.e., 16% and 15%, respectively). It is difficult to know why team norms of OCB wasn't a better predictor than individual OCB at time 2, but it could involve the reduced sample at time 2. That is, hypothesis 8a was tested with 44 teams and 8b was tested with 20 teams. Neither variable was a significant predictor of team performance at time 2.

Hypotheses 9a & 9b. Work team task interdependence moderates the relationship between team norms of OCB and team performance at time 1 and time 2, such that the relationships are stronger as task interdependence increases.

Work team task interdependence did not moderate the relationship between team norms of OCB and team performance at time 1, but did at time 2. However, as with overall team OCB, post hoc analyses of mean scores revealed that the relationship was different than originally hypothesized. That is, teams high in task interdependence and OCB norms did not perform as well as teams that demonstrated high task interdependence and low OCB norms or teams that demonstrated high OCB norms and low levels of interdependence. Furthermore, teams rated low on task interdependence and high on OCB performed better than all other teams.

These findings along with those involving task interdependence and overall OCB were unexpected. It is possible that a variety of extraneous variables could be contributing to these findings. For example, teams high in task interdependence and low in OCB may have performed better than other teams because they were comprised exclusively of high performers. These teams could have also been significantly more motivated compared to teams high in task interdependence and OCB. That is, teams high

in task interdependence and OCB might have been frustrated because of time constraints placed on them by engaging in OCB so often. However, the findings do offer general support for the relative importance of task interdependence.

In general, this adds evidence to current research involving the importance of task interdependence to team performance (Saavedra, Earley, & Van Dyne, 1993; Wageman, 1995, 1999). However, these findings contradicted predictions. Due to the small sample size at time 2, results should be considered carefully. For example, only two teams represent the low in task interdependence and high in OCB norms category, which was the best performing category. The performance of these two teams may not be representative of the population of teams with low task interdependence and high team norms of OCB. The generalizability of task interdependence as a moderator of the OCB norms-team performance relationship may be doubtful due to the small total sample size ($N$ = 19). Interestingly, post hoc analyses indicated that teams low in both norms of OCB and task interdependence were consistently the worst performers (please see Table 6).

Teams were divided into four categories for post hoc analyses. Categories included teams that were: 1) High in both OCB norms and task interdependence; 2) High in OCB norms and low in task interdependence; 3) Low in OCB norms and high in task interdependence; and 4) Low in both OCB norms and task interdependence. Teams low in OCB norms and task interdependence performed more poorly than all other teams. At time 1, mean performance scores were significantly different between teams in each category, $F(3, 36) = 5.15$, $p = .005$. Similarly, at time 2 mean performance scores were significantly different between teams in each category, $F(3, 15) = 10.16$, $p < .01$. Results

from post hoc analyses (i.e., individual T-tests) indicated that teams low in both OCB norms and task interdependence perform significantly worse than teams in all other categories except one (please see Table 6).

Contributions to Current Knowledge

Organizational Citizenship Behavior. OCB at the individual level did not correlate with individual performance. However, strong relationships were found between OCB and performance at the team level. This suggests that OCB works through team dynamics as it relates to team performance. Team processes necessarily involve interdependence and reciprocity. OCB facilitates functional interdependence and promotes beneficial acts of reciprocity, fundamentally supporting the team dynamic.

Table 6

Differences Between Teams With Low OCB Norms/Low Task Interdependence and All Other Teams On Team Performance Mean Scores At Time 1 and Time 2

| | Team Performance at Time 1 | | | | Team Performance at Time 2 | | | |
|---|---|---|---|---|---|---|---|---|
| Source | N | df | M (SD) | t | N | df | M (SD) | t |
| High OCB High TI | 17 | 25 | 58.41 (6.11) | -3.60** | 8 | 11 | 55.38 (6.41) | -3.7** |
| High OCB Low TI | 7 | 15 | 57.71 (6.37) | -2.42* | 2 | 5 | 64.00 (0.00) | -4.59** |
| Low OCB High TI | 6 | 14 | 54.83 (6.43) | -1.64 | 4 | 7 | 61.00 (6.16) | -4.52** |
| Low OCB Low TI | 10 | - | 47.40 (9.88) | - | 5 | - | 41.80 (6.46) | - |

Note. * = $p < .05$. ** = $p < .01$. OCB = Organizational Citizenship Behavior. TI = Task Interdependence.

OCB may be more reasonably assessed as a team level variable. A recent review of prosocial behavior (which is quite similar to OCB) and performance found that prosocial behavior may be more accurately conceptualized as a team level variable (Nielsen, 2000).

Several researchers have identified the intuitive appeal of the team OCB-team performance relationship and the relative lack of studies attempting to empirically demonstrate it (Bolino, 1999; Organ & Ryan, 1995). For example, Organ and Ryan (1995) state, "And we should note that a key assumption in the rationale for studying OCB (antecedents) is the notion (Organ, 1988) that ultimately, aggregated across time and individuals, it contributes to organizational effectiveness. With notable exceptions...little effort has been given even to heuristic indicators that this assumption is viable." In addition, Bolino (1999) states, "...in contrast to the numerous studies exploring the antecedents of OCB, there is a paucity of research examining the outcomes of citizenship behaviors in organizations."

At the team level of analysis, this study addresses the need for empirical studies examining team OCB and team performance and provides support for the relationship between these variables. Specifically, results of this study support current research on OCB and performance at the team level (MacKenzie et al., 1996; Podsakoff, Ahearne, & MacKenzie, 1997).

Results demonstrated positive correlations between customer-rated team OCB and team performance and between team OCB and customer-rated performance. These results support the relationship between team OCB and team performance while

controlling for common method variance, also referred to as "halo." This adds evidence to a growing body of literature identifying OCB as a robust predictor of performance at the team level. In addition, this supports past findings regarding OCB type behaviors directed at customers being related to team performance (George, 1990; George & Bettenhausen, 1990).

More generally, results from this study provide support for similar findings involving prosocial behavior and performance at the team level (Barrick et al., 1998; Barry & Stewart, 1997; Hyatt & Ruddy, 1997; Janz, Colquitt, & Noe, 1997; Neuman & Wright, 1999; Nielsen, 2000).

Extension of current research. Results from this study also extend the current literature on OCB in four ways. First, team OCB was assessed by different groups of raters and was operationalized in five different ways, thus addressing issues of common method variance or "halo." Second, customer perceptions of both team OCB and team performance were gathered. Third, the importance and validity of assessing team norms of OCB was supported. Finally, while the design of this study prevents the determination of causality, the longitudinal assessment of team performance supports the proposed directionality of the team OCB-team performance relationship.

In this study, team OCB was assessed by three different groups of raters (i.e., team members, leaders, & customers) and was operationalized in five different ways. Team OCB was operationalized as aggregate individual OCB, team OCB, consistency of team OCB over time, customer-rated team OCB, and team norms of OCB. Each operationalization demonstrated a significant correlation with team performance. These

results offer evidence against common method bias and lend a significant amount of validity to the existence of a relationship between team performance and team OCB.

Findings from this study provide support for previous research examining customer perceptions of team helping behavior and team performance (George, 1990; George & Bettenhausen, 1990). To date, no study specifically examining OCB has assessed customer-rated OCB and customer-rated performance. Results demonstrating strong relationships between both customer-rated OCB and team performance and between team OCB and customer-rated performance, add evidence as to the robustness of OCB as a predictor of performance at the team level.

If replicated, this study extends the current literature by establishing the importance of team norms of OCB as a predictor of team performance. Team norms of OCB was a significant predictor of team performance at time 1 and customer-rated team performance. In addition, team norms of OCB accounted for significantly more variance in team performance compared with individual level OCB. Team norms of OCB is represented by an index variable consisting of aggregate individual OCB, team OCB, the consistency of team OCB, and customer-rated team OCB. This index represents the degree to which OCB is a team norm and may be a more accurate measure of team OCB. In addition, the use of this type of index to represent team norms may offer a more suitable and accurate method for assessing team level variables in general.

Finally, results from this study add to the literature on OCB and performance by assessing performance longitudinally. Correlational research often assumes incorrectly that a relationship goes only in one specific direction (Staw, 1975). Staw (1975)

demonstrated the hazards of this type of assumption when examining group cohesiveness and performance. Group members who were told their performance was high, rated themselves as more cohesive even though the performance feedback was false and had nothing to do with their actual performance. Past research on team OCB and team performance has failed to provide evidence for the direction of specific relationships. In their study on OCB and performance at the team level, Podsakoff, Ahearne, and MacKenzie (1997) state, "...because the data are cross-sectional, it is difficult to determine whether OCBs cause unit performance to increase or whether unit performance causes crew members to report higher levels of OCBs." While incorrectly using causal language to describe outcomes of correlational research, these researchers make a good point. In this study, aggregate individual OCB, team OCB, and customer ratings of OCB all correlated significantly with team performance at time 2. This suggests that high levels of team OCB are associated with increased team performance over time.

Implications

Theory. A variety of group effectiveness models have been offered to explain how work groups function and what factors affect their performance. Initial theories offered by McGrath (1964) and Steiner (1972), centered on an input-process-output model of group performance. These models focused on input defined as things people bring to the group (e.g., expertise, status, personality & experience); process defined as the interaction among group members (e.g., social exchange of information, influence attempts & leadership); and output defined as products yielded by the group (Guzzo & Shea, 1992). The current, prevailing theoretical model of group functioning is the input-

process-output model. One of the key assumptions made by this model is that inputs affect outcomes through processes (Hackman & Morris, 1978). Findings from this study support in part the IPO model of group functioning. That is, team OCB as a group process variable was a significant predictor of team performance. This study did not assess possible antecedents to OCB in an attempt to determine what 'inputs' lead to the occurrence of OCBs. However, past research has proposed job satisfaction as a predictor of OCB (Bateman & Organ, 1983; George, 1990; Karambaya, 1991; Kemery, Bedeian, & Zacur, 1993; Miller, Garlick, & Omens, 1994; Moorman, Niehoff, & Organ, 1993; Organ & Lingl,1995; Schappe, 1994; Stecher, Rosse, & Miller, 1994; Williams & Anderson, 1991). Personality (Barrick, Mount, & Strauss, 1992; Konovksy & Organ, 1995; McNeeley & Meglino, 1994; Moorman & Blakely, 1993; Organ & Lingl, 1995) and organizational commitment (Kidwell, Mossholder, & Bennett, 1997; Mathieu & Zajac, 1990; O'Reilly & Chatman, 1986) have also been explored as possible OCB antecedents. A recent review of this literature (Organ & Ryan, 1995) indicated satisfaction, fairness, organizational commitment, leadership, and conscientiousness to be the best predictors of OCB. However, each relationship was only moderately supported.

This study provides support to the theory that team OCB is a key process variable contributing to team performance. Results suggest a revised framework of relationships involving OCB and performance (please see Figure 6). Extending this theory, one could

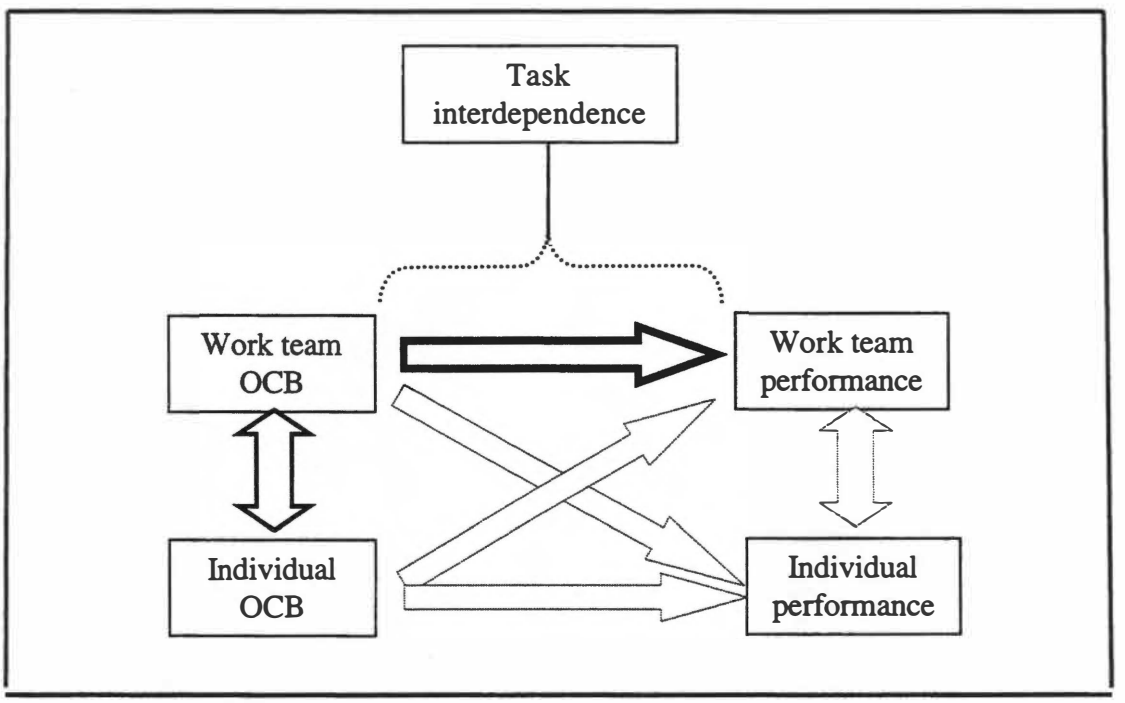



Figure 6. Revised General Framework for the Relationship Structure of Organizational Citizenship Behavior and Performance

logically theorize that conscientiousness and agreeableness might be good predictors of OCB.

Research. The most significant research implications of this study include providing evidence for: 1) team OCB as a predictor of team performance; 2) the directionality of the team OCB-team performance relationship; 3) the utility and validity of assessing team norms of OCB using an index of team OCB; and 4) the generalizability of the team OCB-team performance relationship.

Using multiple sources to assess team OCB and team performance, this study found a consistent relationship between team OCB and team performance.

Team OCB predicted team performance at the original time of data collection and predicted team performance at least one month later.

An index score representing team norms of OCB was a significant predictor of team performance. Furthermore, team norms of OCB served as a significantly stronger predictor of team performance compared with individual OCB.

Fifty-two teams from six different organizations participated in this study. Organizations ranged in type from healthcare to government. Results generalized across organizations. Organization type didn't introduce any systematic variance into the analyses. These results may provide evidence for the generalizability of the team OCB-team performance relationship for different types of organizations.

Application. Findings from this study provide valuable information for individuals involved in the measurement and development of teams, but also raise questions about the construct of OCB.

Individuals in human resource departments need to measure a variety of team level variables. These variables may range from team satisfaction to team sensitivity to diversity or team citizenship behavior. Typically, this type of assessment is done through the aggregation of individual data on the variable in question. Several researchers have identified that aggregation can be misleading (Roberts, Hulin, & Rousseau, 1978; James, Demaree, & Wolf, 1984; Rousseau, 1985). Results from this study demonstrate that a more accurate method for assessing team level variables involves using an index variable. This index variable consists of aggregate individual scores (i.e., assuming high levels of agreement), aggregate team scores (i.e., assuming high levels of agreement), consistency scores, and external perception scores. Using an index measure of this type permits a more accurate assessment of any team level variable. However, for purposes of application this methodology requires more time and more money. These drawbacks must be weighed against the advantages.

A focus on people development has been identified as vitally important to organizations for keeping talented employees and maintaining competitive advantage (McCall, 1998; Peters & Waterman, 1982; Senge, 1990). Equally as important, but often overlooked is a focus on team development.

Individual team members may have a variety of competency areas that must be developed to excel in their organization. However, these individual needs are not identical to those of the team. For example, there are five members of a department store sales team, two of which need work on being more responsive to customers, two others need to work on communicating more openly with their teammates, and the last member

needs to develop more product knowledge. While these are individual areas needing improvement, they will likely become barriers to team performance. If this situation is viewed at the team level, the key development need of the team may be in the area of helping behavior. Each team member might improve his or her specific areas of weakness, but this will not necessarily translate into an increase in team performance. However, if the team were to collectively work on their helping behavior several of the individual developmental needs could be met, but more importantly team functioning and performance might improve.

The strong relationship between OCB and performance at the team level indicates that helping behavior, sportsmanship, and civic virtue may be important behaviors for teams to develop in an effort to improve performance. However, results from this study also raise some important questions regarding the construct of OCB.

OCB is primarily thought of as a predictor variable that contributes to performance. However, researchers have also identified OCB as a type of performance (Borman & Motowidlo, 1997). This raises interesting questions regarding the conceptualization of the construct of OCB. For example, does OCB represent behaviors that are really "discretionary" as Organ (1988) states? Job requirements in today's work environment may implicitly include citizenship behaviors and be part of the normative expectations of employee performance. This is probably most accurate for team-based organizations. That is, it is unlikely that a team-based organization wouldn't expect and require team members to help each other, touch-base regarding important issues, and actively attend team meetings. Thus, these behaviors would be no more discretionary

than showing up for work. Another issue regarding the construct of OCB involves motivation.

To what extent do OCBs increase team member motivation? Would an increase in motivation be more directly linked with team performance compared with the actual OCBs? More accurately understanding the ways in which OCB is related to performance is important and may require the investigation of other variables such as motivation and affect. In addition, defining the construct of OCB in today's team-based work environment may require expansion and/or re-conceptualization.

Limitations

This study is limited by at least 6 factors.

Sample Size. This study had a sample including only 52 teams which necessarily limits statistical power. A larger sample size may have permitted the detection of specific relationships. This was specifically an issue regarding performance data at time 2. Attrition dramatically reduced the sample size for performance data collected at time 2 compared with data collection at time 1 ($N$ = 25 and $N$ = 52, respectively). The issue of sample size is consistent and inherent within team level research.

Common Method Variance. Some results of this study could have been affected by common method variance. That is, predictor and criterion variables rated by the same rater group could demonstrate artificially high correlations. This issue has been identified in previous research examining OCB and performance (Podsakoff et al., 2000).

Hypothesis 3a predicted that team OCB would be positively correlated with concurrent team performance. The team OCB variable was established by aggregating

team member and team leader ratings of team OCB, while team performance was established through team leader ratings. The high correlation between these variables ($r = .60$, $p < .01$) could be due to team leaders providing data for both variables. Another possible example of common method variance involved hypothesis 5a, which predicted that customer-rated OCB would be related to customer-rated performance. There is little doubt that this correlation ($r = .80$, $p < .01$) is artificially high due to having the same group rate both the predictor and criterion variables. However, this study also provides evidence against common method variance (please see Table 7).

Six team OCB variables rated by team members and leaders were all positively related to team performance as rated by team customers. In addition, team OCB rated by customers was positively related to concurrent and subsequent team performance as rated by team leaders.

These results suggest that team OCB is a robust predictor of team performance.

Type of Team. There was considerable variation in the type and nature of teams examined. Service, production, management, and action teams were all included in this study. Thus, teams with different attributes may have been 'bundled' together for statistical analyses masking systematic differences.

Type of Organization. Teams included in this study came from 6 different organizations. Levels of internal validity may have been compromised if key factors within each organization differed. However, ANOVAs revealed significant differences between organizations on only 3 variables.

Table 7

Team Level Correlations Across Different Rating Groups

| Variable *(Source)* | Team Performance Time 1 *(Leaders)* | Team Performance Time 2 *(Leaders)* | Team Performance *(Customers)* |
|---|---|---|---|
| Aggregate Ind. OCB *(Leaders & Members)* | .33* | .43* | .36* |
| Team OCB *(Leaders & Members)* | .60** | .50** | .47** |
| Team Helping Behavior *(Leaders & Members)* | .55** | .37 | .40* |
| Team Sportsmanship *(Leaders & Members)* | .48** | .66** | .45** |
| Team Civic Virtue *(Leaders & Members)* | .51** | .18 | .44** |
| Consistency of Team OCB *(Leaders)* | .73** | .38 | .35* |
| Team OCB *(Customers)* | .43** | .46* | .80** |

Note. * = $p < .05$. ** = $p < .01$. OCB = Organizational Citizenship Behavior.

Previous research on teams from multiple organizations has failed to address this issue substantively (Barry & Stewart, 1998). To address the potential impact of organization type on the previous results, ANOVAs were conducted for each team level variable.

Results indicated no significant differences between organizations for most team level variables. The exceptions were aggregate individual OCB, $F(5, 46) = 4.04$, $p < .01$, team norms of OCB, $F(5, 38) = 3.01$, $p < .05$, and customer-rated performance, $F(5, 36) = 2.79$, $p < .05$. Partial correlations between these and all other variables relevant to the hypotheses were re-calculated controlling for organization type (please see Table 8).

Correlations involving these variables remained almost identical. The only exception involved the relationship between aggregate individual performance and team performance at time 2. This relationship failed to reach significance when controlling for organization type ($r = .39$, $p = .06$). However, this result is very similar even when not controlling for organization type ($r = .43$, $p = .03$).

External Validity. Fourth, external validity is reduced due to the population and setting involved. Service, production, management, and action teams participated in this study. These teams came from healthcare, government, and manufacturing organizations. Therefore, results may not generalize to all types of teams in all types of organizations. However, it should be noted that results were consistent and significant across team and organization type providing more evidence for generalizability than some team level studies.

Table 8

Team Level Sample Sizes, Means, Standard Deviations, and Correlations Controlling for Organization Type.

| | Variable | N | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Aggregate Individual OCB | 52 | 48.05 | 4.61 | - | | | | | | | | |
| 2 | Team OCB | 46 | 47.77 | 5.77 | | | | | | | | | |
| 3 | Consistency of Team OCB | 52 | 48.37 | 8.14 | | | | | | | | | |
| 4 | Customer Ratings of Team OCB | 44 | 43.82 | 7.04 | | | | | | | | | |
| 5 | Norm of Team OCB | 44 | 14.37 | 1.98 | | | | | | | | | |
| 6 | Aggregate Individual Performance | 50 | 41.92 | 9.88 | .47** (H2a) | | | | | | | | |
| 7 | Team Performance | 52 | 53.54 | 8.61 | .35* (H2a) | | | | .54** (H6a) | | | | |
| 8 | Customer-Rated Team Performance | 42 | 47.17 | 9.72 | | .43** (H4a) | | .80** (H4b) | .66** (H6b) | | | | |
| 9 | Team Performance at Time 2 | 25 | 52.80 | 9.29 | .39 (H2b) | | | | .31 (H6c) | | | | |

Note. * = $p < .05$. ** = $p < .01$. H = hypothesis. OCB = Organizational Citizenship Behavior.

Design. Finally, the correlational design used in this study prevents the establishment of causation. However, the value of conducting studies in the field cannot be underestimated. In this case, increased generalizability was traded for decreased control and internal validity.

Future Directions

The key findings of this study deserve consideration for extension and require replication. Using an index representing team norms of OCB seems to be a plausible method for more accurately assessing team level OCB. This finding needs to be replicated with other populations. The value of using an index representation of team norms also needs to be examined with other variables. For example, would the measurement of team conscientiousness be more accurate by operationalizing conscientiousness as a team norm and utilizing an index score to represent the level of team conscientiousness? Would conscientiousness be a better or worse predictor of team performance if it were assessed using this methodology?

Future research should also focus on the relational direction between OCB and performance. That is, do high performing teams exhibit more OCB or do teams who frequently engage in OCB perform better?

Future research needs to examine the relationship between OCB and performance at multiple levels of analysis and with both subjective and objective performance criteria. This will aid in determining whether this relationship systematically varies across levels of analysis and criterion type.

Another direction for future research should involve the examination of organizational citizenship behavior focused at specific recipients. That is, customer-focused OCB has been found to be a significant predictor of team performance. This may hold true and in fact be stronger for OCB focused at other groups such as teammates.

Future research should examine specific team and organizational variables that promote employee OCB. Creating an environment where OCB is fostered and expected due to work team norms or organizational culture will likely lead to improved performance and satisfaction.

Finally, future research should address the role of OCB in virtual teams. Is OCB more or less important for virtual teams? It is possible that because virtual teams have little else holding them together, OCB is an important factor contributing to performance. However, another possibility is that virtual teams wouldn't benefit from OCB because members rarely meet face to face. That is, behaviors like not complaining about a new company policy or staying late to help a teammate simply don't apply in the virtual realm. As organizations increase their use of virtual teams, factors contributing to their performance will need to be identified and OCB may be one such factor.

Conclusions

A correlational field study of 52 teams from 6 organizations found work team OCB to be a robust predictor of team performance.

At the individual level of analysis no relationship was found between OCB and individual performance.

At the team level of analysis aggregate individual OCB, team OCB, helping behavior, sportsmanship, and civic virtue all correlated positively with concurrent and subsequent team performance.

A positive relationship was found between customer-rated OCB and both customer-rated performance and team performance. A strong relationship was found between team OCB and customer-rated performance. Finally, customer-rated OCB was positively correlated with team performance over time.

Task interdependence didn't moderate the relationship between team OCB and concurrent team performance, but did moderate the relationship between team OCB and subsequent team performance.

Team norms of OCB, represented by the aggregation of aggregate individual OCB, team OCB, the consistency of OCB over time, and customer-rated OCB, was strongly related to aggregate individual performance, team performance, and customer-rated performance. In addition, team norms of OCB was a better predictor of team performance compared with individual level OCB.

This study extends the current literature on OCB and performance at the team level by demonstrating that team OCB is a robust predictor of team performance. It also indicates that team OCB is related to concurrent *and* subsequent team performance and provides support for the validity of assessing team norms of OCB.

Competition is rapidly increasing, more organizations are moving to team-based structures, and employees are increasingly being required to become more adaptable. All of these factors highlight the importance of helping behavior, sportsmanship, and civic

virtue for achieving high levels of success. It is not enough to be technically efficient and task focused. This study indicates that the category of organizational citizenship might embody many of the behaviors and skills that will be required of employees, teams, and organizations in the future.

# References

Ancona, D.G. & Caldwell, D.F. (1992). Bridging the boundary: External activity and performance in organizational teams. Administrative Science Quarterly, 37, 634-665.

Argote, L. & McGrath, J.E. (1993). Group process in organizations: Continuity and change. In C.L. Cooper and I.T. Robertson (Eds.), International Review of Industrial and Organizational Psychology, Vol. 8. Wiley & Sons Ltd.

Asch, S. (1951). Effects of group pressure upon the modification and distortion of judgement. In M.H. Guetzhow (Ed.), Groups, leadership, and men. Pittsburgh: Carnegie.

Avila, R.A., Fern, E.F., & Mann, O.K. (1988). Unraveling criteria for assessing sales people: A causal analysis. Journal of Personal Selling and Sales Management, 8, 45-54.

Barnard, C.I. (1938). The functions of the executive. Cambridge, MA: Harvard University Press.

Barrick, M.R., Mount, M.K., & Strauss, J.P. (1992). Big Five and ability predictors of citizenship, delinquency, and sales performance. Paper presented at the Seventh Annual Conference of the Society of Industrial and Organizational Psychology, Montreal.

Barrick, M.R., Stewart, G.L., Neubert, M.J., & Mount, M.K. (1998). Relating team member ability and personality to work-team processes and team effectiveness. Journal of Applied Psychology, 83(3), 377-391.

Bass, B.M. (1997). Transformational leadership: Industrial, military, and educational impact. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Bateman, T.S. & Organ, D.W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee "citizenship." Academy of Management Journal, 26, 587-595.

Bies, R.J., Martin, C.L., & Brockner, J.L. (1993). Just laid off, but still a "Good Citizen?" Only if the process is fair. Employee Responsibility and Rights Journal, 6(3), 227-238.

Bolino, M.C. (1999). Citizenship or impression management: Good soldiers or good actors? Academy of Management Review, 24(1), 82-98.

Booth-Kewley, S., Edwards, J.E., & Rosenfeld, P. (1992). Impression management, social desirability, and computer administration of attitude questionnaires: Does the computer make a difference? Journal of Applied Psychology, 77, 562-566.

Borman, W.C. & Motowidlo, S.J. (1997). Task performance and contextual performance: The meaning for personnel selection research. Human Performance, 10(2), 99-109.

Borman, W.C. & Motowidlo, S.J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W.C. Borman (Eds.), Personnel selection in organizations (pp. 71-98). San Francisco: Jossey-Bass.

Borman, W.C., White, L.A., & Dorsey, D.W. (1995). Effects of ratee task performance and interpersonal factors on supervisor and peer performance ratings. Journal of Applied Psychology, 80, 168-177.

Brief, A.P & Motowidlo, S.J. (1986). Prosocial organizational behaviors. Academy of Management Review, 10, 710-725.

Campion, M.A., Medsker, G.J., & Higgs, A.C. (1993). Relations between work group characteristics and effectiveness: Implications for designing effective work groups. Personnel Psychology, 46, 823-850.

Campion, M.A., Papper, E.M., & Medsker, G.J. (1995). Relations between work team characteristics and effectiveness: Replication and extension. Personnel Psychology, 49, 429-452.

Chan, D. (1998). Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. Journal of Applied Psychology, 83(2), 234-246.

Cohen, S.G. & Bailey, D.E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. Journal of Management, 23(3), 239-290.

Conn, S.R. & Rieke, M.L. (1994). Response style indices. In S.R. Conn & M.L. Rieke (Eds.), 16 PF Fifth Edition: Technical Manual, (2nd ed., pp.55-73). Champaign, IL: Institute for Personality and Ability Testing, Inc.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.

Deluga, R.J. (1995). The relation between trust in the supervisor and subordinate organizational citizenship behavior. Military Psychology, 7, 1-16.

DeMatteo, J.S., Eby, L.T., & Sundstrom, E. (1998). Team-based rewards: Current empirical evidence and directions for future research. Research in Organizational Behavior, 20, 141-183.

Farh, J., Podsakoff, P.M., & Organ, D.W. (1990). Accounting for organizational citizenship behavior: Leader fairness and task scope versus satisfaction. Journal of Management, 16, 705-722.

Feldman, D.C. (1984). The development and enforcement of group norms. Academy of Management Review, 9(1), 47-53.

Ford, J.K., MacCallum, R.C., & Tait, M. (1986). The application of exploratory factor analysis in applied psychology: A critical review and analysis. Personnel Psychology, 39, 291-314.

George, J.M. (1990). Personality, affect, and behavior in groups. Journal of Applied Psychology, 75, 107-116.

George, J.M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. Journal of Applied Psychology, 76, 299-307.

George, J.M. & Bettenhausen, K. (1990). Understanding prosocial behavior, sales performance, and turnover: A group level analysis in a service context. Journal of Applied Psychology, 75, 698-709.

Guzzo, R.A. & Shea, G.P. (1992). Group performance and intergroup relations in organizations. In M.D. Dunnette & L.M. Hough (Eds.), Handbook of industrial and organizational psychology (2nd ed., Vol. 3). Palo Alto, CA: Consulting Psychologists Press.

Guzzo, R.A. & Shea, G.P. (1987). Group effectiveness: What really matters. Sloan Management Review, Spring, 25-31.

Hackman, J.R., & Morris, C.G. (1975). Group tasks, group interaction process, and group performance effectiveness: A review and proposed integration. In L. Berkowitz (Ed.), Advances in experimental psychology. (Vol. 8, pp.45-49). New York: Academic Press.

Hackman, J.R. & Walton, R.E. (1986). Leading groups in organizations. In P. Goodman (Ed.), Designing effective work groups. San Francisco: Jossey-Bass.

Holden, R.R. & Hickman, D. (1987). Computerized versus standard administration of the Jenkins Activity Survey (Form T). Journal of Human Stress, 13, 175-179.

House, R.J., Woycke, J., & Fodor, E.M. (1988). Charismatic and non-charismatic leaders: Differences in behavior and effectiveness. In J.A. Conger & R.N. Kanungo (Eds.), Charismatic leadership: The elusive factor in organizational effectiveness. San Francisco: Jossey-Bass.

Huet-Cox, G.D., Nielsen, T.M., & Sundstrom, E. (1999a, May). Get the most from 360-degree feedback: Put it on the Internet. HR Magazine, 44(5), 92-103.

Huet-Cox, G.D., Nielsen, T.M., & Sundstrom, E. (1999b). Getting results from Internet-based 360-degree feedback through coaching. Human Resource Professional, 12 (6), 23-28.

James, C.A. (2000). The impact of a new survey technology platform on employees and survey processes. In W.H. Macy (Chair), Making the move to Internet-based surveys: Lessons from experience. Symposium conducted at the 2000 Society for Industrial-Organizational Psychology Conference, New Orleans, LA.

James, L.R. (1982). Aggregation bias in estimates of perceptual agreement. Journal of Applied Psychology, 67, 219-229.

James, L.R., Dameree, R.G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. Journal of Applied Psychology, 69, 85-98.

Jehn, K.A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. Administrative Science Quarterly, 40, 256-282.

Jehn, K.A. (1997). A qualitative analysis of conflict types and dimensions in organizational groups. Administrative Science Quarterly, 42, 530-557.

Karambaya, R. (1991). Contexts for organizational citizenship: Do high performing and satisfying units have better citizens? Unpublished manuscript, York University, Ontario, Canada.

Katz, D. & Kahn, R.L. (1966). The social psychology of organizations. New York: Wiley.

Katzenbach, J.R. & Smith, D.K. (1993). The wisdom of teams. Boston: Harvard Business School Press.

Kidwell Jr., R.E., Mossholder, K., & Bennett, N. (1997). Cohesiveness and organizational citizenship behavior. A multilevel analysis using work groups and individuals. Journal of Management, 23(6), 775-793.

Kiesler, S. & Sproull, L. (1986). Response effects in the electronic survey. Public Opinion Quarterly, 50, 402-413.

King, W.C. & Miles, E.W. (1995). A quasi-experimental assessment of the effect of computerizing noncognitive paper-and-pencil measurements: A test of measurement equivalence. Journal of Applied Psychology, 80(6), 643-651.

Konovsky, M.A. & Organ, D.W. (1996). Dispositional and contextual determinants of organizational citizenship behavior. Journal of Organizational Behavior, 17(3), 253-266.

Landis, C. (1995). An exploratory study of science educators' use of the Internet. Journal of Science Education and Technology, 4(3), 181-190.

Lautenschlager, G.J. & Flaherty, V.L. (1990). Computer administration of questions: More desirable or more social desirability? Journal of Applied Psychology, 75, 310-314.

Lawler, E.E., III, Mohrman, S.A., & Ledford, G.E. (1998). Strategies for high performance organizations: Employee involvement, TQM, and reengineering programs in Fortune 1000 corporations. San Francisco: Jossey-Bass.

Liden, R.C., Wayne, S.J., & Bradway, L.K. (1997). Task interdependence as a moderator of the relation between group control and performance. Human Relations, 50(2), 169-181.

Lowery, C.M. & Krilowicz, T.J. (1994). Relationships among nontask behaviors, rated performance, and objective performance measures. Psychological Reports, 74, 571-578.

MacKenzie, S.B., Podsakoff, P.M., & Ahearne, M. (1998). Some possible antecedents and consequences of in-role and extra-role salesperson performance. Journal of Marketing, 62, 87-98.

MacKenzie, S.B., Podsakoff, P.M., & Fetter, R. (1991). Organizational citizenship behavior and objective productivity as determinants of managerial evaluations of salespersons' performance. Organizational Behavior and Human Decision Processes, 50, 123-150.

MacKenzie, S.B., Podsakoff, P.M., & Fetter, R. (1993). The impact of organizational citizenship on evaluations of salesperson performance. Journal of Marketing, 57, 70-80.

MacKenzie, S.B., Podsakoff, P.M., & Paine, J.E. (1998). Effects of organizational citizenship behaviors and productivity on evaluations of performance at different hierarchical levels in sales organizations. Journal of the Academy of Marketing Science, 27, 396-410.

MacKenzie, S.B., Podsakoff, P.M., & Rich, G.A. (1999). Transformational and transactional leadership and salesperson performance. Manuscript in preparation for publication.

Martin, C.L. & Nagao, D.H. (1989). Some effects of computerized interviewing on job applicant responses. Journal of Applied Psychology, 74, 72-80.

Mathieu, B.L. & Zajac, D.M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. Psychological Bulletin, 108, 171-194.

McCall, M.W. (1998). High flyers: Developing the next generation of leaders. Boston, MA: Harvard Business School Press.

McGrath, J.E. (1964). Social psychology: A brief introduction. Holt, Rinehart, and Winston.

McGrath, J.E. (1984). Groups: Interaction and performance. Englewood Cliffs, NJ: Prentice-Hall.

McNeely, B.L. & Meglino, B.M. (1994). The role of dispositional and situational antecedents in prosocial organizational behavior: An examination of the intended beneficiaries of prosocial behaviors. Journal of Applied Psychology, 79(6), 836-844.

Mead, A.D. & Drasgow, F. (1993). Equivalence of computerized and paper-and-pencil cognitive ability tests: A meta-analysis. Psychological Bulletin, 114(3), 449-458.

Mintzberg, H. (1979). The structuring of organizations: A synthesis of the research. Englewood Cliffs, NJ: Prentice Hall.

Moorman, R.H. (1991). Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? Journal of Applied Psychology, 76, 845-855.

Moorman, R.H. & Blakely, G.L. (1995). Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. Journal of Organizational Behavior, 16(2), 127-142.

Moorman, R.H., Niehoff, B.P., & Organ, D.W. (1993). Treating employees fairly and organizational citizenship behavior: Sorting the effects of job satisfaction, organizational commitment, and procedural justice. Employee Responsibilities and Rights Journal, 6(3), 209-255.

Moritz, S.E. & Watson, C.B. (1998). Levels of analysis issues in group psychology: Using efficacy as an example of a multilevel model. Group Dynamics: Theory, Research, and Practice, 2(4), 285-298.

Motowidlo, S.J. & Van Scotter, J.R. (1994). Evidence that task performance should be distinguished from contextual performance. Journal of Applied Psychology, 79, 475-480.

Munene, J.C. (1995). 'Not-on-seat': An investigation of some correlates of organizational citizenship behavior in Nigeria. Applied Psychology: An International Review, 44(2), 111-122.

Niehoff, B.P. & Moorman, R.H. (1993). Justice as a mediator of the relationship between methods of monitoring and organizational citizenship behavior. Academy of Management Journal, 36, 527-556.

Nielsen, T.M. (2000). Prosocial behavior and performance at three levels of analysis: A review of empirical research. Manuscript in preparation for publication.

Nielsen, T.M. & Halfhill, T. (2000). Organizational survey data collected via the Internet: Is it really the same? Paper presented at the 12th annual American Psychological Society convention.

Nunnally, J.C. (1967). Psychometric theory. New York: McGraw-Hill.

Nunnally, J.C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill.

Organ, D.W. (1988). Organizational citizenship behavior: The good soldier syndrome. Lexington, MA: Lexington Books.

Organ, D.W. (1990). The subtle significance of job satisfaction. Clinical Laboratory Management Review, 4, 94-98.

Organ, D.W. & Konovsky, M. (1989). Cognitive versus affective determinants of organizational citizenship behavior. Journal of Applied Psychology, 74, 157-164.

Organ, D.W. & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. Journal of Social Psychology, 135, 339-350.

Organ, D.W. & Moorman, R.H. (1993). Fairness and organizational citizenship behavior: What are the connections? Social Justice Research, 6, 5-18.

Organ, D.W. & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. Personnel Psychology, 48, 775-800.

Pearson, E.S. & Hartley, H.O. (1951). Charts of the power function for analysis of variance tests, derived from the non-central *F* distribution. Biometrika, 38, 112-130.

Peters, T.J. & Waterman, R.H. (1982). In search of excellence: Lessons from America's best-run companies. New York, NY: Harper & Row Publishers.

Podsakoff, P.M., Ahearne, M., & MacKenzie, S.B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. Journal of Applied Psychology, 82(2), 262-270.

Podsakoff, P.M. & MacKenzie, S.B. (1994). Organizational citizenship behavior and sales unit effectiveness. Journal of Marketing Research, 31, 351-363.

Podsakoff, P.M. & MacKenzie, S.B. (1995). An examination of substitutes for leadership within a levels of analysis framework. Leadership Quarterly, 6, 289-328.

Podsakoff, P.M. & MacKenzie, S.B. (1997). The impact of organizational citizenship behavior on organizational performance: A review and suggestions for future research. Human Performance, 10, 133-151.

Podsakoff, P.M., MacKenzie, S.B., & Bommer, W.H. (1996). Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. Journal of Management, 22, 259-298.

Podsakoff, P.M. & MacKenzie, S.B., Moorman, R.H., & Fetter, R. (1990). Transformational leadership behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behavior. Leadership Quarterly, 1, 107-142.

Podsakoff, P.M. & MacKenzie, S.B., Paine, J.B., & Bachrach, D.G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. Journal of Management, 26(3), 513-563.

Podsakoff, P.M., Niehoff, B.P., MacKenzie, S.B., & Williams, M.L. (1993). Do substitutes for leadership really substitute for leadership? An empirical examination of Kerr and Jermier's situational leadership model. Organizational Behavior and Human Decision Processes, 54, 1-44.

Randall, M.L., Cropanzano, R., Bormann, C.A., & Birjulin, A. (1999). Organizational politics and organizational support as predictors of work attitudes, job performance, and organizational citizenship behavior. Journal of Organizational Behavior, 20, 159-174.

Roethlisberger, F.J. & Dickson, W.J. (1964). Management and the worker. New York: Wiley Science Editions.

Roberts, K.H., Hulin, C.L., & Rousseau, D.M. (1978). Developing an interdisciplinary science of organizations. San Francisco: Jossey-Bass.

Rousseau, D.M. (1985). Issues of level in organizational research: Multi-level and cross-level perspectives. In B.M. Staw & L.L. Cummings (Eds.), Research in organizational behavior (pp. 1-37). Greewich, CT: JAI Press.

Rosen, E.F. & Petty, L.C. (1995). The Internet and sexuality education: Tapping into the wild side. Behavior Research Methods, Instruments, and Computers, 27, 281-284.

Saavedra, R., Early, P.C., & Van Dyne, L. (1993). Complex interdependence in task-performance groups. Journal of Applied Psychology, 78, 61-72.

Schnake, M. (1991). Organizational citizenship: A review, proposed model, and research agenda. Human Relations, 44, 735-759.

Schnake, M., Cochran, D., & Dumler, M. (1995). Encouraging organizational citizenship: The effects of job satisfaction, perceived equity and leadership. Journal of Managerial Issues, 7(2), 209-221.

Schnake, M., Dumler, M., & Cochran, D. (1993). The relationship between "traditional" leadership, "super" leadership, and organizational citizenship behavior. Group and Organization Management, 18(3), 352-365.

Schuldberg, D. (1988). The MMPI is less sensitive to the automated testing format that it is to repeated testing: Item and scale effects. Computers in Human Behavior, 4, 285-298.

Seashore, S.E. (1954). Group cohesiveness in the industrial work group. Ann Arbor, MI: University of Michigan Press.

Senge, P.M. (1990). The fifth discipline: The art & practice of the learning organization. New York, NY: Currency Doubleday.

Shea, G.P. & Guzzo, R.A. (1987). Groups as human resources. In K.M. Rowland & G.R. Ferris (Eds.), Research in human resources and personnel management (Vol. 5). Greenwich, CT: JAI Press.

Shea, G.P. & Guzzo, R.A. (1989). Groups as human resources. In G.R. Ferris & K.M. Rowlands (Eds.), Research in human resources and personnel management (Vol. 5). Greenwich, CT: JAI Press.

Sherif, M. (1936). The psychology of social norms. New York, NY: Harper & Row.

Smith, C.A., Organ, D.W., & Near, J.P. (1983). Organizational citizenship behavior: Its nature and antecedents. Journal of Applied Psychology, 68, 655-663.

Stanton, J.M. (1998). An empirical assessment of data collection using the Internet. Personnel Psychology, 51, 709-725.

Staw, B.M. (1975). Attribution of the "causes" of performance: A general alternative interpretation of cross-sectional research on organizations. Organizational Behavior and Human Decision Processes, 13, 414-432.

Stecher, M.D., Rosse, J.G., & Miller, J.L. (1994). The effects of mood, fairness, and job satisfaction on organizational citizenship. Paper presented at the Ninth Annual Conference of the Society for Industrial and Organizational Psychology, Nashville, TN.

Steiner, I.D. (1972). Group process and productivity. New York: Academic Press.

Sundstrom, E. & Associates (1999). Supporting work team effectiveness: Best management practices for fostering high performance. San Francisco, CA: Jossey-Bass.

Sundstrom, E., De Meuse, K.P., & Futrell, D. (1990). Work teams: Applications and effectiveness. American Psychologist, 45, 120-133.

Sundstrom, E., McIntyre, M., Halfhill, T., & Richards, H. (2000). Work groups: From the Hawthorne studies to work teams of the 1990's and beyond. Group Dynamics, 4(1), 44-67.

Tansky, J.W. (1993). Justice and organizational citizenship behavior: What is the relationship? Employee Responsibilities and Rights Journal, 6(3), 195-207.

Toquam-Hatten, J.L. (2000). Impact of surveying using two processes. In W.H. Macy (Chair), Making the move to Internet-based surveys: Lessons from experience. Symposium conducted at the 2000 Society for Industrial-Organizational Psychology Conference, New Orleans, LA.

Wageman, R. (1995). Interdependence and group effectiveness. Administrative Science Quarterly, 40, 145-180.

Wageman, R. (1999). Task design, outcome interdependence, and individual differences: Their joint effects on effort in task performing teams (Commentary on Huguet et al. (1999). Group Dynamics, 3(2), 132-137.

Walz, S.M. & Niehoff, B.P. (1996). Organizational citizenship behaviors and their effect on organizational effectiveness in limited menu-restaurants. In J.B. Keys & L.N. Dosier (Eds.), Academy of Management best papers proceedings (pp. 307-311).

Wellins, R.S., Byham, W.C., & Dixon, G. (1994). Inside teams: How twenty world-class organizations are winning through teamwork. San Francisco, CA: Jossey-Bass.

Williams, L.J. & Anderson, S.E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behavior. Journal of Management, 17, 601-617.

Witt, L.A. (1992). Perceptions of the situation and positive affect as predictors of altruism organizational citizenship behaviors. Paper presented at the meeting of the Academy of Management, Las Vega, NV.

# Appendices

## Appendix 1

**Organizational Citizenship Project Proposal**

**Project Background:**

Organizations in today's competitive business environment are increasingly transforming standard operating procedures, organizational structure, and day-to-day practices. A key driver of this corporate restructuring has been increased global competition and the resulting need to conduct business more efficiently. Researchers and managers have found that organizational citizenship behavior (OCB) is directly related to increased organizational performance. Similarly, OCB has been identified in both the scientific literature and popular press as vital to the success of every organization.

This project would involve collecting data on **organizational citizenship behaviors (OCBs)** from work groups/teams at your company. **OCBs** are defined as, *a general set of behaviors performed by employees that are helpful, cooperative, discretionary, and go far beyond normal job requirements.*

Examples of OCB include:

- An employee staying late to help a teammate finish their part of an important project.
- An "experienced" manager helping a new manager "learn the ropes," even though this activity is not part of the experienced manager's job description and takes much time.

- An office employee exerting the extra effort to come to work during a snowstorm, even when other employees use the storm as an excuse to stay home.
- A team member spending many hours helping to resolve a conflict between other team members.
- A manager who is willing to adapt to new company human resource policies, rather than complaining about them.

These types of behaviors aggregated across individuals and time facilitate work team and organizational performance. Moreover, some of the latest research suggests that any organization whose employees don't behave this way will be at a significant competitive disadvantage. This is a cutting-edge topic in the research literature, which has received sound empirical support.

Assessing OCB and performance at your company could be an important step in identifying key behaviors necessary for optimum performance. In addition, the cost of conducting such an assessment would be negligible.

**Benefits of project participation for your company:**

**Accurate and detailed assessments of:**

- The extent to which *organizational citizenship behaviors* (OCBs) occur in work teams.
- The extent to which OCBs impact the performance of your company's work teams.

- The level of impact that OCBs have on individual employee performance.
- The level of task interdependence within work teams and the extent to which task interdependence impacts performance.
- The degree to which work team customers (internal or external) believe that work teams engage in OCBs.
- The level of work team performance as seen by team customers.

**This information would facilitate:**

- Greater knowledge of a key component influencing the performance of work teams and the company as a whole.
- Identification of a key strength or developmental opportunity area for work teams from your organization.
- More detailed awareness of the work team culture and to what extent current employees are "team players."
- Greater awareness of customer perceptions of work team behavior.
- Identification of specific methods for maintaining or increasing levels of customer satisfaction.
- The formation of training programs focused on OCBs (specific employee behavior and customer service).

**Deliverables - Tjai Michael Nielsen, MA**

1. An **Internet-based** multimedia presentation of project results available on-line to all participants.

2. A comprehensive and detailed written report on the level of ***organizational citizenship behavior*** occurring in work teams.
3. Statistical analysis of all survey data indicating the impact of OCBs on work team performance.
4. A verbal debrief of results given to the executive team and/or other appropriate parties.

**Requirements for data collection:**

1. Data should come from existing groups/teams within the organization. Work groups/teams would include any or all, **interdependent groups of individuals who share responsibility for specific outcomes at your company.**
2. Team size may vary accordingly, including as few as 3 members.
3. Data should be collected from as many work teams as possible.
4. All data would be collected using written surveys. **Surveys can be completed via paper and pencil or via the Internet which ever is more suitable for your organization.**
5. Surveys would require approximately 45 minutes to complete for each participant.
6. Individual and work team performance data is also necessary. This would preferably come from existing company records, but could also be collected via survey.
7. Data should be collected no later than April, 2000.

**Cost:**

There will be no consulting fees associated with this project, as it is part of dissertation research. Costs will only include actual expenses. Potentially including the following:

1. All photocopying costs related to surveys (< $250.00).
2. All costs associated with data entry and analysis to be no greater than $250.00.

**Total:** $250.00 to a maximum guaranteed not to exceed $500.00. All expense terms are negotiable.

**Further Information:** If you would like more detailed information about this project, please don't hesitate to contact me, Tjai M. Nielsen, at (423) 523-9063 or tnielsen@utk.edu. Thank you for taking the time to review this proposal, I look forward to hearing from you.

## Appendix 2

# Project Proposal - *XYZ Corporation*

**Project Overview -**

This study will assess the relationships among team organizational citizenship behavior (OCB), task interdependence, and team performance in a work environment. A multi-method correlational field study will be conducted with work teams from ***XYZ***. Participants will complete measures of OCB, task interdependence, and performance. Team level OCB will be assessed using an index of work team OCB comprised of individual score aggregation, within-team variability, consistency across time, and external perceptions of the team's OCB. Performance will be assessed at two points in time using a survey instrument measuring each team's efficiency, quality of innovation, schedule adherence, budget adherence, and ability to resolve conflicts. In addition, performance will be assessed using objective indices of performance gathered from ***XYZ's*** archival records.

Results are expected to indicate that work team OCB correlates with work team performance at time one and time two and that task interdependence interacts with team OCB providing incremental validity in the prediction of work team performance.

Results offer the possibility of furthering current knowledge on the existence of OCB within ***XYZ*** and its impact on work team performance. Findings from this study

could provide dramatic and powerful information about what does and what doesn't drive performance at ***XYZ***.

**Relationships Between Project Variables**

Organizational citizenship behavior (OCB) has been identified as vital to the success of any organization (Bateman & Organ, 1983; Organ, 1988). OCB refers to a general set of behaviors performed by employees that are helpful, discretionary, and go far beyond normal job requirements. Specifically, OCB has been linked with work team performance (Podsakoff, Ahearne, & MacKenzie, 1997).

Organizations in today's competitive business environment are increasingly restructuring standard operating procedures, organizational structure, and day-to-day practices. A key driver of this corporate restructuring has been increased global competition and the resulting need to conduct business more efficiently. Researchers have argued that organizational citizenship behavior (OCB) aggregated across individuals and time is directly related to increased organizational performance (Bateman & Organ, 1983; Organ, 1988).

Organizational citizenship behavior refers to a general set of behaviors performed by employees that are helpful, discretionary, and go far beyond normal job requirements. Specifically, OCB has been defined as, "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (Organ, 1988). Some examples include:

- An employee staying late to help a teammate finish their part of an important project.

- An "experienced" manager helping a new manager "learn the ropes," even though this activity is not part of the experienced manager's job description and takes much time.
- An office employee exerting the extra effort to come to work during a snowstorm, even when other employees use the storm as an excuse to stay home.
- A team member spending many hours helping to resolve a conflict between other team members.
- A manager who is willing to adapt to new company human resource policies, rather than complaining about them.

In recent years there has been a plethora of research conducted involving OCB. Primarily, this research has attempted to identify the antecedents of OCB (Bateman & Organ, 1983; George, 1991; Konovsky & Organ, 1996; McNeely & Meglino, 1994; Munene, 1995; Niehoff & Moorman, 1993; Organ & Konovsky, 1989; Moorman, 1991; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Podsakoff, Niehoff, MacKenzie, & Williams, 1993; Schnake, 1991; Smith, Organ, & Near, 1983). The majority of this research was presumably conducted with the assumption that OCBs are positively related to organizational and/or work team performance.

While the assumption that relatively greater levels of OCB improve performance is intuitively appealing, it lacks empirical support. Only a limited amount of research has been conducted that examines the relationship between organizational citizenship behavior and performance at the team and organizational levels (Karambaya, 1991; MacKenzie, Podsakoff, & Ahearne, 1996; Podsakoff et al., 1997; Podsakoff & MacKenzie, 1994; Walz & Niehoff, 1996). While these researchers operationalized team

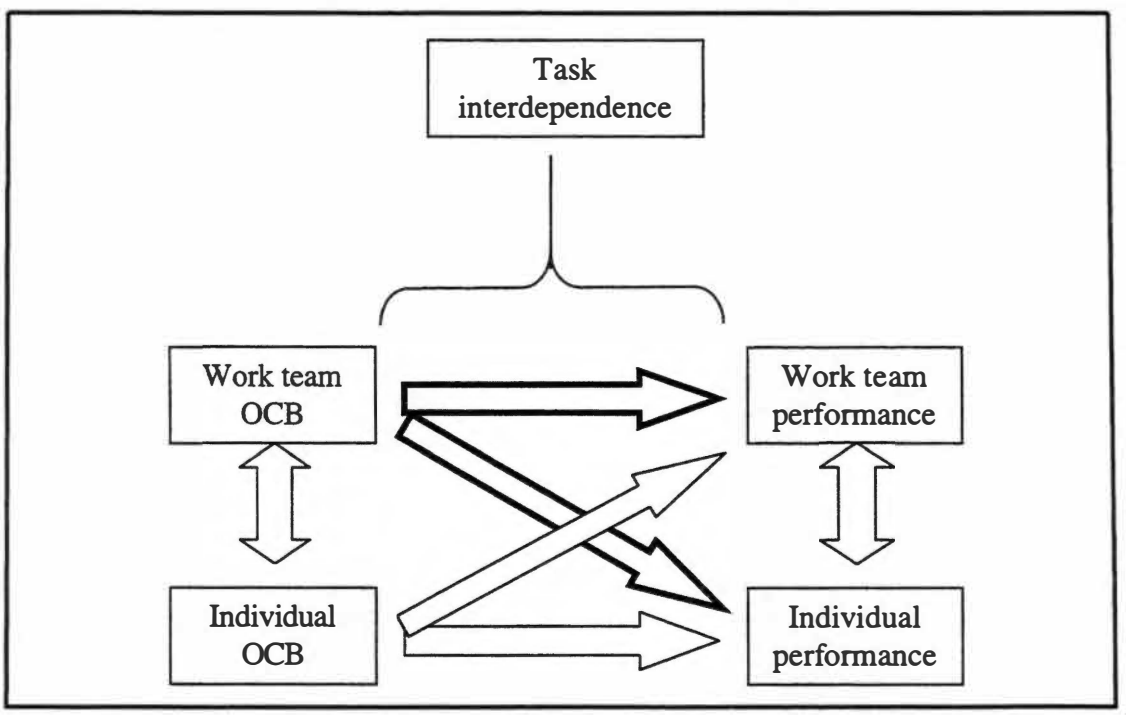
performance differently, it can be generally defined as the degree to which a team's output is acceptable to internal and/or external customers who receive team products, services, information, decisions, or performance events (Sundstrom et al., 1990). Research examining the relationship between OCB and performance suggests a general framework for understanding how OCB might improve work team performance.

This framework is based on the idea that individual OCB aggregated across people and time will be related to work team performance (please see Figure 1). Behavioral examples of OCB such as employees going out of their way to help each other with work-related problems, experienced employees staying after hours to train new ones, and employees actively participating in team meetings might increase work team performance by promoting self-management, increasing the team's ability to accomplish goals, and improving the efficiency and coordination of the team (Podsakoff & MacKenzie, 1994). These examples suggest a framework of relationships involving team level OCB and team performance.

First, OCB as a team level variable--partially defined by the extent to which it has been adopted as a team norm--will accurately predict work team performance. Second, team level OCB will predict team performance more strongly than individual OCB. Finally, the relationship between team level OCB and work team performance is moderated by the degree to which a work team's tasks are interdependent.

Figure 1

General Framework for the Relationship Structure of Organizational Citizenship Behavior and Performance




**Project Justification -**

This study will attempt to examine the validity of work team organizational citizenship behavior (OCB) in predicting work team performance across time and assess the relative impact of task interdependence. Results offer the possibility of furthering current knowledge on the existence of OCB within XYZ and its impact on work team

performance. Findings from this study could also provide dramatic and powerful information about what does and what doesn't drive performance at XYZ.

**Hypotheses -**

To summarize, *hypothesis #1* stated that work team OCB correlates positively with work team performance; *hypothesis #1A* stated that work team OCB compared with individual OCB, demonstrates a stronger positive correlation with team performance; *hypothesis #2* stated that work team OCB correlates positively with work team performance over time; *hypothesis #2A* stated that work team OCB compared with individual OCB, demonstrates a stronger positive correlation with team performance over time; and *hypothesis #3* stated that work team task interdependence moderates the relationship between team OCB and team performance, such that the relationship is stronger as task interdependence increases.

**Implementation Steps -**

This multi-method correlational field study will assess work team OCB as seen by team members, the team leader, and customers with three versions of an OCB scale (13 items-Podsakoff et al., 1997), task interdependence as seen by team members with a task interdependence scale (5 items-Wageman,1995), and work team performance as seen by the team leader, team members, and customers using a performance assessment scale worded for the specific rater (10 items-Ancona & Caldwell, 1992) and objective indices of performance as indicated by existing company records. Performance will be assessed two times, separated by a time span of no less than one month. Performance assessment over time will be done for two distinct reasons. First, performance assessment at two

points in time will provide evidence against arguments of reverse causality which often plague correlational research. Second, a lag effect between group process and performance has been identified by researchers (Hackman & Walton, 1986). That is, specific group processes at time 1 may affect performance at time 2 (Ancona & Caldwell, 1992).

| Measures | Time #1 | Time #2 |
|---|---|---|
| Team OCB and task interdependence. | X | |
| Team performance | X | X |

**Project Procedures -**

Upon organizational approval, participants will be notified by memo from the human resources department of the impending data collection. The human resources department will then provide researchers with a list of all possible participants, grouped by team with identification of the team leader and all possible team customers (internal and/or external). Following notification, all participants will be informed of the *general* purpose of the project and that the results will be kept strictly confidential with their identities remaining completely private.

Participants will then be informed of the benefits of participation: **1**) Results may be used for team facilitation training during future training sessions; **2**) Results may

facilitate the identification of specific factors affecting work team performance; **3)** Each participant will be offered the option of receiving individual written reports based on project results; **4)** All participants will be offered access to an Internet-based report summarizing all project results.

***Team Members, Team Leaders, and Team Customers*** - Each **team member** will be given a survey designed to assess team OCB and task interdependence. Each **team leader** will be given a survey designed to assess his or her work teams' level of organizational citizenship behavior and performance. Internal and/or external **customers** of all work teams will be given a survey designed to assess the work teams' level of organizational citizenship behavior and performance. **Customers can be internal or external and are defined as anyone who receives team products, services, information, decisions, or performance events.**

All surveys will be distributed via internal company mail or traditional external mail based on the participant list provided by the HR department. Each survey will be accompanied by a stamped return envelope addressed to the principal investigator. Surveys will include detailed instructions displayed at the top of each page stating that each question should be answered as honestly as possible, that all results will be kept strictly confidential, and that they are free to take as much time as necessary to complete the entire questionnaire.

## Benefits to the *XYZ Corporation*:

**Accurate and detailed assessments of:**

- The extent to which *organizational citizenship behaviors* (OCBs) occur in work teams at XYZ.
- The extent to which OCBs impact the performance of XYZ's work teams.
- The level of impact that OCBs have on individual employee performance at XYZ.
- The level of task interdependence within work teams and the extent to which task interdependence impacts performance.
- The degree to which work team customers believe that XYZ work teams engage in OCBs.
- The level of work team performance as seen by team customers.

**This information would facilitate:**

- Greater knowledge of a key component influencing the performance of work teams and the company as a whole.
- Identification of a key strength or developmental opportunity area for work teams in at XYZ.
- More detailed awareness of the work team culture and to what extent current employees are "team players."
- Greater awareness of customer perceptions of work team behavior.
- Identification of specific methods for maintaining or increasing levels of customer satisfaction.

- The formation of training programs focused on OCBs (specific employee behavior and customer service).

**Deliverables - Tjai Michael Nielsen, MA**

1) An **Internet-based** multimedia presentation of project results available on-line to all participants.
2) A comprehensive and detailed written report on the level of ***organizational citizenship behavior*** occurring in work teams.
3) Statistical analysis of all survey data indicating the impact of OCBs on work team performance.
4) A verbal debrief of results given to the executive team and/or other appropriate parties.

## Appendix 3

# Field Plan - Survey Project at XYZ, Inc.

| Requirements | Provided by Tjai Nielsen | Resources from GM/President | Expectation of others |
|---|---|---|---|
| 1) Identification of all team members (name, position, team), team leaders (name, position, team), and internal team customer (s) to each other team **(see below).** | N/A | List of each employee belonging to each work team, the corresponding team leader, and corresponding team customer(s) **(see below).** | **P. Smith; L. Smith; S. Smith; K. Smith** - Provide a list of each pressman and converting employee on 1st & 2nd shifts belonging to specific teams (e.g. 4 person slitter team, 5 person rollem team, etc.). |
| 2) Inform employees of impending data collection. | Memo with brief description of project. | Demonstration of support for project to employees (by signing memo). | **Administrative Person** - Distribute memos or otherwise inform employees. |
| 3) Construction of customized surveys for specific teams, team leaders, and customers (internal). | A complete set of surveys clearly labeled & organized for specific team's etc. | N/A | N/A |
| 4) Distribution of surveys to each team at XYZ, Inc. | All surveys w/ specific instructions for completion. Will distribute all surveys at XYZ on designated day. | Provide employees with time to complete surveys (< 45 mins. per person). | **All team members** - Complete surveys (< 45 mins.). |
| 5) Collection of all completed surveys. | I can collect all surveys if they will all be completed in 1 day and if you want me to be on-site. | N/A | N/A |

| | | | |
|---|---|---|---|
| 6) Collection of performance data on all team members. | N/A | Provide performance data (access to records) on all team members (e.g. supervisor ratings or anything used to judge performance). | N/A |
| 7) Collection of performance data including survey data, at least 1 month after initial data collection. | All surveys w/ performance measures labeled and organized for specific team leader's. | Provide performance data (access to records) if new records exist since last data collection. **AND** Provide team leaders with time to complete performance ratings. | **Team leaders** - Complete all surveys (< 45 mins.). |

Note. All names used in this appendix are fictitious in order to protect the privacy of participants.

**Appendix 4**

# Cooperation and Performance Rating Form - Team Members

Thank you for participating in this project, your participation is crucial for its success. This study is about cooperation in work teams and how cooperation might be related to work team performance. Benefits of participation include: 1) Facilitating the possible identification of key elements necessary for great work team performance; and 2) If you choose, access to a written or Internet-based report summarizing all project results.

Your participation in this study is voluntary and you may decline to participate without penalty at any time. **The information that you provide will be used for research purposes only and will not be revealed to other employees, supervisors, or management.** These ratings will not appear in anyone's personnel file. At the completion of this project, we will destroy the names of all participants. Returning this survey constitutes your authorization for team leaders to rate your performance. In addition, returning this survey constitutes your agreement and informed consent to participate in this study.

Demographic Information:

1) Name:_____

2) Age: _____

3) Gender: M F

4) What is the highest level of education you have completed?

**Please circle one:**

a) Grade school
b) Attended high school
c) Graduated from high school
d) Attended college
e) Graduated from college
f) Attended graduate school
g) Received graduate Master's Degree (e.g. M.A., M.S., M.B.A., etc.)
h) Received graduate Doctoral Degree (e.g. Ph.D., M.D., Ed.D. etc.)

5) What position do you currently hold at your company?_____

6) How long have you worked at your present job? Years_____; Months_____

7) What team are you a member of at your company?_____

8) How long have you been a member of this team? Years_____; Months_____

**Please go to the next page and begin the questionnaire. Thank you.**

**Directions –** The following questionnaire is designed to assess the level of cooperation that occurs in work teams. The following statements refer to **your behavior** while working with your team. When responding to each statement, think about how much **you** actually perform the identified behavior.

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your** behavior.

## When I work with my team I:

1) Help out other team members if someone falls behind in his/her work.
**1 2 3 4 5**

---

2) Willingly share my expertise with other members of the team.
**1 2 3 4 5**

---

3) Always focus on what is wrong with the situation, rather than the positive side.
**1 2 3 4 5**

---

4) Take steps to prevent problems with other team members.
**1 2 3 4 5**

---

5) Willingly give my time to help team members who have work-related problems.
**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your** behavior.

## When I work with my team I:

6) "Touch base" with other team members before initiating actions that might affect them.

**1 2 3 4 5**

---

7) Consume a lot of time complaining about trivial matters.

**1 2 3 4 5**

---

8) Provide constructive suggestions about how the team can improve its effectiveness.

**1 2 3 4 5**

---

9) Am willing to risk disapproval to express my beliefs about what's best for the team.

**1 2 3 4 5**

---

10) Always find fault with what other team members are doing.

**1 2 3 4 5**

---

11) Try to act like a peacemaker when other team members have disagreements.

**1 2 3 4 5**

---

12) Encourage other team members when they are down.

**1 2 3 4 5**

---

13) Attend and actively participate in team meetings.

**1 2 3 4 5**

**Directions -** The following statements are similar to the one's you just completed, **except** they **refer to the behavior of your entire team** instead of your individual behavior. When responding to each statement, think about how much **members of your team** perform the identified behavior. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating your **team member's behavior**.

## Members of my team:

1) Help each other out if someone falls behind in his/her work.

**1 2 3 4 5**

---

2) Willingly share their expertise with other members of the team.

**1 2 3 4 5**

---

3) Always focus on what is wrong with our situation, rather than the positive side.

**1 2 3 4 5**

---

4) Take steps to prevent problems with other team members.

**1 2 3 4 5**

---

5) Willingly give of their time to help team members who have work-related problems.

**1 2 3 4 5**

---

6) "Touch base" with other team members before initiating actions that might affect them.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating your **team member's behavior**.

## Members of my team:

7) Consume a lot of time complaining about trivial matters.
**1 2 3 4 5**

---

8) Provide constructive suggestions about how the team can improve its effectiveness.
**1 2 3 4 5**

---

9) Are willing to risk disapproval to express their beliefs about what's best for the team.
**1 2 3 4 5**

---

10) Always find fault with what other team members are doing.
**1 2 3 4 5**

---

11) Try to act like peacemakers when other team members have disagreements.
**1 2 3 4 5**

---

12) Encourage each other when someone is down.
**1 2 3 4 5**

---

13) Attend and actively participate in team meetings.
**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**Directions –** The following questionnaire is designed to assess the level of task interdependence that occurs in work teams. The following statements refer to how your team works and how much team members depend on each other to complete tasks.

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating how your team works.

1. Our work is not done until everyone in the group has done his or her part.
   **1 2 3 4 5**

---

2. We often must share materials and ideas if we are to get our work done.
   **1 2 3 4 5**

---

3. I often have to talk to other people in my work group in order to do my job well.
   **1 2 3 4 5**

---

4. In our group, we need to count on each other a lot.
   **1 2 3 4 5**

---

5. We clearly are a team of people with a shared task to perform--not a collection of individuals who have their own particular jobs to do.
   **1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**Directions –** The following questionnaire is designed to assess the level of work team performance. The following statements refer to how well your team performs in specific areas. When responding to each statement, think about the performance of your team as a whole. **Your ratings should reflect a typical range of performance for your team.**

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your team's** level of performance.

## Typically:

1) My team achieves a high level of productivity on the job.
**1 2 3 4 5**

---

2) My team makes effective use of its time, even during "down time."
**1 2 3 4 5**

---

3) My team meets all of its deadlines.
**1 2 3 4 5**

---

4) My team does the best possible work it is capable of--not settling for good enough.
**1 2 3 4 5**

---

5) My team looks after the little details of a task to make sure everything is done right.
**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your team's** level of performance.

## Typically:

6) Members of my team do not take too long during lunch or break periods.
**1 2 3 4 5**

---

7) Members of my team have a good attendance record.
**1 2 3 4 5**

---

8) My team does not "goof off" when it's close to quitting time.
**1 2 3 4 5**

---

9) My team does an excellent job of figuring out what might prevent good performance in the future.
**1 2 3 4 5**

---

10) My team initiates ideas about alternative solutions, instead of being passive or lazy about thinking up new ideas.
**1 2 3 4 5**

---

11) My team works hard to resolve conflicts between team members.
**1 2 3 4 5**

---

12) My team successfully resolves conflicts that are hurting team performance.
**1 2 3 4 5**

---

13) My team demonstrates a level of performance that could be described as excellent.
**1 2 3 4 5**

---

14) My team consistently performs very well.
**1 2 3 4 5**

---

**You have completed this questionnaire. Thank you for your participation.**

**Appendix 5**

# Cooperation and Performance Rating Form - Team Leaders

Thank you for participating in this project, your participation is crucial for its success. This study is about cooperation in work teams and how cooperation might be related to work team performance. Benefits of participation include: 1) Facilitating the possible identification of key elements necessary for great work team performance; and 2) If you choose, access to a written or Internet-based report summarizing all project results.

Your participation in this study is voluntary and you may decline to participate without penalty at any time. **The information that you provide will be used for research purposes only and will not be revealed to other employees, supervisors, or management.** These ratings will not appear in anyone's personnel file. At the completion of this project, we will destroy the names of all participants. Returning this survey constitutes your agreement and informed consent to participate in this study.

Demographic Information:

9) Name:_____

10) Age: _____

11) Gender: M F

12) What is the highest level of education you have completed?

**Please circle one:**
a) Grade school
b) Attended high school
c) Graduated from high school
d) Attended college
e) Graduated from college
f) Attended graduate school
g) Received graduate Master's Degree (e.g. M.A., M.S., M.B.A., etc.)
h) Received graduate Doctoral Degree (e.g. Ph.D., M.D., Ed.D. etc.)

13) What position do you currently hold at your company?_____

14) How long have you worked at your present job? Years_____;

Months_____

15) You are the team leader for what team?_____

16) How long have you been the team's leader? Years_____; Months_____

17) How long have you been a member of this team? Years_____;

Months_____

**Please go to the next page and begin the questionnaire. Thank you.**

**Directions –** The following questionnaire is designed to assess the level of cooperation that occurs in work teams. The following statements refer to **your behavior** while working with your team. When responding to each statement, think about how much **you** actually perform the identified behavior.

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your** behavior.

## When I work with my team I:

1) Help out other team members if someone falls behind in his/her work.
**1 2 3 4 5**

---

2) Willingly share my expertise with other members of the team.
**1 2 3 4 5**

---

3) Always focus on what is wrong with the situation, rather than the positive side.
**1 2 3 4 5**

---

4) Take steps to prevent problems with other team members.
**1 2 3 4 5**

---

5) Willingly give my time to help team members who have work-related problems.
**1 2 3 4 5**

---

## Please go to the next page. Thank you.

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your** behavior.

## When I work with my team I:

6) "Touch base" with other team members before initiating actions that might affect them.

**1 2 3 4 5**

---

7) Consume a lot of time complaining about trivial matters.

**1 2 3 4 5**

---

8) Provide constructive suggestions about how the team can improve its effectiveness.

**1 2 3 4 5**

---

9) Am willing to risk disapproval to express my beliefs about what's best for the team.

**1 2 3 4 5**

---

10) Always find fault with what other team members are doing.

**1 2 3 4 5**

---

11) Try to act like a peacemaker when other team members have disagreements.

**1 2 3 4 5**

---

12) Encourage other team members when they are down.

**1 2 3 4 5**

---

13) Attend and actively participate in team meetings.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**Directions –** The following statements are similar to the one's you just completed, **except** they **refer to the behavior of your entire team** instead of your individual behavior. When responding to each statement, think about how much **members of your team** perform the identified behavior.

Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your team member's** behavior.

## Members of my team:

1) Help each other out if someone falls behind in his/her work.

**1 2 3 4 5**

---

2) Willingly share their expertise with other members of the team.

**1 2 3 4 5**

---

3) Always focus on what is wrong with our situation, rather than the positive side.

**1 2 3 4 5**

---

4) Take steps to prevent problems with other team members.

**1 2 3 4 5**

---

5) Willingly give of their time to help team members who have work-related problems.

**1 2 3 4 5**

---

6) "Touch base" with other team members before initiating actions that might affect them.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating your **team member's behavior**.

## Members of my team:

7) Consume a lot of time complaining about trivial matters.
**1 2 3 4 5**

---

8) Provide constructive suggestions about how the team can improve its effectiveness.
**1 2 3 4 5**

---

9) Are willing to risk disapproval to express their beliefs about what's best for the team.
**1 2 3 4 5**

---

10) Always find fault with what other team members are doing.
**1 2 3 4 5**

---

11) Try to act like peacemakers when other team members have disagreements.
**1 2 3 4 5**

---

12) Encourage each other when someone is down.
**1 2 3 4 5**

---

13) Attend and actively participate in team meetings.
**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**Directions** - The following statements are similar to the one's you just completed, **except** they **refer to the consistency** of your team's behavior **over time**. When responding to each statement, think about how much members of your team **have consistently performed the identified behaviors over time**. Use the following scale to indicate how much you agree with each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating the **consistency** of your **team member's behavior over time**.

## Consistently, over time members of my team:

1) Help each other out if someone falls behind in his/her work.

**1 2 3 4 5**

---

2) Willingly share their expertise with other members of the team.

**1 2 3 4 5**

---

3) Always focus on what is wrong with our situation, rather than the positive side.

**1 2 3 4 5**

---

4) Take steps to prevent problems with other team members.

**1 2 3 4 5**

---

5) Willingly give of their time to help team members who have work-related problems.

**1 2 3 4 5**

---

6) "Touch base" with other team members before initiating actions that might affect them.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating the **consistency** of your **team member's behavior over time**.

## Consistently, over time members of my team:

7) Consume a lot of time complaining about trivial matters.
**1 2 3 4 5**

---

8) Provide constructive suggestions about how the team can improve its effectiveness.
**1 2 3 4 5**

---

9) Are willing to risk disapproval to express their beliefs about what's best for the team.
**1 2 3 4 5**

---

10) Always find fault with what other team members are doing.
**1 2 3 4 5**

---

11) Try to act like peacemakers when other team members have disagreements.
**1 2 3 4 5**

---

12) Encourage each other when someone is down.
**1 2 3 4 5**

---

13) Attend and actively participate in team meetings.
**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**Directions –** The following questionnaire is designed to assess the level of work team performance. The following statements refer to how well your team performs in specific areas. When responding to each statement, think about the performance of your team as a whole. **Your ratings should reflect a typical range of performance for your team.**

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating your team's level of performance.

## Typically:

1) My team achieves a high level of productivity on the job.
**1 2 3 4 5**

---

2) My team makes effective use of its time, even during "down time."
**1 2 3 4 5**

---

3) My team meets all of its deadlines.
**1 2 3 4 5**

---

4) My team does the best possible work it is capable of--not settling for good enough.
**1 2 3 4 5**

---

5) My team looks after the little details of a task to make sure everything is done right.
**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating your team's level of performance.

## Typically:

6) Members of my team do not take too long during lunch or break periods.

**1 2 3 4 5**

---

7) Members of my team have a good attendance record.

**1 2 3 4 5**

---

8) My team does not "goof off" when it's close to quitting time.

**1 2 3 4 5**

---

9) My team does an excellent job of figuring out what might prevent good performance in the future.

**1 2 3 4 5**

---

10) My team initiates ideas about alternative solutions, instead of being passive or lazy about thinking up new ideas.

**1 2 3 4 5**

---

11) My team works hard to resolve conflicts between team members.

**1 2 3 4 5**

---

12) My team successfully resolves conflicts that are hurting team performance.

**1 2 3 4 5**

---

13) My team demonstrates a level of performance that could be described as excellent.

**1 2 3 4 5**

---

14) My team consistently performs very well.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**Directions -** The following survey is designed to assess the performance of **individual members of your team.** When responding to each statement, think about the typical performance of **each member of your team.**

**When rating each team member please remember the following:**

- Your rating should reflect a typical range of performance for the employee.
- When you are making ratings, try to think of specific examples of behavior that you have observed from actual job performance.
- Bear in mind that the lowest rating (1) on your form will be used for people who are performing so poorly that they are possibly going to lose their jobs or you wish they had never been hired.
- And, the highest rating (8) will be attained by only one person, if that many.

Here are the categories you will use to rate each team member:

**PRODUCTIVITY**

- Achieves a high level of productivity on the job.
- Puts forth a lot of effort.
- Accomplishes as much or more than what you expect.
- Makes effective use of his/her time even during "downtime."
- Willing to work overtime when asked to do so.
- Works hard to meet deadlines.

**QUALITY**

- Is neat and orderly in his approach to tasks.
- Takes the time to understand what you mean by a high quality product.
- Looks after the little details of a task to make sure everything is done right.
- Is rarely sloppy or haphazard in approaching tasks.
- Tries to do the best possible work he/she is capable of -- doesn't settle for good enough.

**OPENNESS TO NEW LEARNING**

- Learns new job-related information quickly.
- Learns new job-related skills and practices quickly.
- Willingly tries out new procedures, practices, or equipment (does not show resistance, negativity, or opposition.)
- Views change positively -- recognizes that change leads to a better future in the long run.

**RELATIONSHIPS WITH OTHER ASSOCIATES**

- Relates to people at work in a friendly, cordial manner.
- Develops friendships with workers in his team.
- Shows respect for individual differences/diversity.
- Does not talk about people in a negative manner behind their backs.

**DEPENDABILITY AND RELIABILITY**

- Keeps his/her word even when it is inconvenient / unpleasant to do so.
- Follows instructions fully even when he/she does not want to.
- Does not violate company rules or policies.
- Follows through on what he/she commits to do.
- Is honest -- does not lie or tell "half truths" to create the wrong impression.

**ABILITY TO FUNCTION UNDER STRESS:**

- Keeps cool when jobs are time-pressured.

- Stays reasonably calm when during crises.
- Maintains composure even under very demanding work conditions.

**ATTENDANCE AND TIMELINESS**

- Has a good attendance record.
- Has a valid excuse whenever he/she is absent.
- Gets to work a little early so that he/she can start work promptly.
- Does not take too long on breaks / lunch periods.

## Please go to the next page. Thank you.

**Directions** - Please **rate each member** of your team on the previously described categories.

**Person Being Rated:**

Name: _____Job Title:_____ Team:_____

Here are the ratings you will use for each category of performance:

1 = Performance does not meet, or rarely meets, minimum job standards.
2 = Performance is less than satisfactory in many respects.
3 = Performance is satisfactory in most respects but not all.
4 = Performance is satisfactory in all respects.
5 = Performance is above average but not superior.
6 = Performance is superior in almost all respects.
7 = Performance is definitely superior in all respects.
8 = **Single** best performance I have ever observed or even hope to observe.

After reading the descriptions in each category, please provide ratings for this individual:

_____Productivity
_____Quality
_____Openness to New Learning
_____Relationships With Other Associates
_____ Dependability and Reliability
_____ Ability To Function Under Stress
_____ Attendance and Timeliness
_____ **Overall Job Performance**

---

**Person Being Rated:**

Name: _____Job Title: _____ Team:_____

After reading the descriptions in each category, please provide ratings for this individual:

_____Productivity
_____Quality
_____Openness to New Learning
_____Relationships With Other Associates
_____ Dependability and Reliability
_____ Ability To Function Under Stress
_____ Attendance and Timeliness
_____ **Overall Job Performance**

---

**Please continue until you have rated each member of your team. Thank you.**

**Appendix 6**

# 2nd Team Performance Rating Form - Team Leaders

Thank you for participating in this project, your participation is crucial for its success. This is a follow-up questionnaire designed to assess your work team's performance. Performance data is gathered twice in an attempt to establish trends and consistency over time.

Demographic Information:

18) Name:_____

19) Age: _____

20) Gender: M F

21) What position do you currently hold at your

company?_____

22) You are the team leader for what team?_____

**Please go to the next page and begin the questionnaire. Thank you.**

**Directions –** The following questionnaire is designed to assess work team performance. The following statements refer to how well your team performs in specific areas. When responding to each statement, think about the performance of your team as a whole. **Your ratings should reflect a typical range of performance for your team.**

Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **your team's** level of performance.

## Typically:

1) My team achieves a high level of productivity on the job.
**1 2 3 4 5**

---

2) My team makes effective use of its time, even during "down time."
**1 2 3 4 5**

---

3) My team meets all of its deadlines.
**1 2 3 4 5**

---

4) My team does the best possible work it is capable of--not settling for good enough.
**1 2 3 4 5**

---

5) My team looks after the little details of a task to make sure everything is done right.
**1 2 3 4 5**

---

6) Members of my team do not take too long during lunch or break periods.
**1 2 3 4 5**

---

7) Members of my team have a good attendance record.
**1 2 3 4 5**

---

8) My team does not "goof off" when it's close to quitting time.
**1 2 3 4 5**

---

9) My team does an excellent job of figuring out what might prevent good performance in the future.
**1 2 3 4 5**

---

10) My team initiates ideas about alternative solutions, instead of being passive or lazy about thinking up new ideas.
**1 2 3 4 5**

---

11) My team works hard to resolve conflicts between team members.

**1 2 3 4 5**

---

12) My team successfully resolves conflicts that are hurting team performance.

**1 2 3 4 5**

---

13) My team demonstrates a level of performance that could be described as excellent.

**1 2 3 4 5**

---

14) My team consistently performs very well.

**1 2 3 4 5**

---

**You have completed this survey. Thank you for your participation.**

**Appendix 7**

# Cooperation and Performance Rating Form - Team Customers

Thank you for participating in this project, your participation is crucial for its success. This study is about cooperation in work teams and how cooperation might be related to work team performance. Benefits of participation include: 1) Facilitating the possible identification of key elements necessary for great work team performance; and 2) If you choose, access to a written or Internet-based report summarizing all project results.

Your participation in this study is voluntary and you may decline to participate without penalty at any time. **The information that you provide will be used for research purposes only and will not be revealed to other employees, supervisors, or management.** These ratings will not appear in anyone's personnel file. At the completion of this project, we will destroy the names of all participants. Returning this survey constitutes your agreement and informed consent to participate in this study.

Demographic Information:

1) Name:_____

2) Age: _____

3) Gender: M F

4) What is the highest level of education you have completed?

**Please circle one:**
a) Grade school
b) Attended high school
c) Graduated from high school
d) Attended college
e) Graduated from college
f) Attended graduate school
g) Received graduate Master's Degree (e.g. M.A., M.S., M.B.A., etc.)
h) Received graduate Doctoral Degree (e.g. Ph.D., M.D., Ed.D. etc.)

5) What position do you currently hold at your company?_____

6) How long have you worked at your present job? Years_____;

Months_____

7) What team are you a member of at your

company?_____

8) How long have you been a member of this team? Years_____;

Months_____

9) You are a ***customer*** of what team?_____ (A team's ***customer*** is anyone who receives that team's products, services, information, or decisions.)

**Please go to the next page and begin the questionnaire. Thank you.**

**Directions –** The following questionnaire is designed to assess the level of cooperation that occurs in work teams. The following statements **refer to the behavior of the team you identified previously**. When responding to each statement, think about how much **members of that team** perform the identified behavior.

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **the team's** behavior.

## Members of the _____team:

**Please fill in team name**

1) Help each other out if someone falls behind in his/her work.

**1 2 3 4 5**

---

2) Willingly share their expertise with other members of the team.

**1 2 3 4 5**

---

3) Always focus on what is wrong with our situation, rather than the positive side.

**1 2 3 4 5**

---

4) Take steps to prevent problems with other team members.

**1 2 3 4 5**

---

5) Willingly give of their time to help team members who have work-related problems.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating **the team's** behavior.

## Members of the _____team:

**Please fill in team name**

6) "Touch base" with other team members before initiating actions that might affect them.

**1 2 3 4 5**

---

7) Consume a lot of time complaining about trivial matters.

**1 2 3 4 5**

---

8) Provide constructive suggestions about how the team can improve its effectiveness.

**1 2 3 4 5**

---

9) Are willing to risk disapproval to express their beliefs about what's best for the team.

**1 2 3 4 5**

---

10) Always find fault with what other team members are doing.

**1 2 3 4 5**

---

11) Try to act like peacemakers when other team members have disagreements.

**1 2 3 4 5**

---

12) Encourage each other when someone is down.

**1 2 3 4 5**

---

13) Attend and actively participate in team meetings.

**1 2 3 4 5**

---

**Directions –** The following questionnaire is designed to assess the level of work team performance. The following statements refer to how well a team performs in specific areas. When responding to each statement, think about the performance of the team as a whole. **Your ratings should reflect a typical range of performance for that team.**

Please read each statement and decide how strongly you agree or disagree. Each statement should be answered as honestly and accurately as possible. Use the following scale to respond to each statement:

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating the team's level of performance.

## The _____team:

**Please fill in team name**

1) Achieves a high level of productivity on the job.

**1 2 3 4 5**

---

2) Makes effective use of its time, even during "down time."

**1 2 3 4 5**

---

3) Meets all of its deadlines.

**1 2 3 4 5**

---

4) Does the best possible work it is capable of--not settling for good enough.

**1 2 3 4 5**

---

5) Looks after the little details of a task to make sure everything is done right.

**1 2 3 4 5**

---

**Please go to the next page. Thank you.**

**1 = strongly disagree**
**2 = disagree**
**3 = neutral**
**4 = agree**
**5 = strongly agree**

Please circle **one** response indicating the team's level of performance.

## The _____team:

**Please fill in team name**

6) Does not take too long during lunch or break periods.

**1 2 3 4 5**

---

7) Has a good attendance record.

**1 2 3 4 5**

---

8) Does not "goof off" when it's close to quitting time.

**1 2 3 4 5**

---

9) Does an excellent job of figuring out what might prevent good performance in the future.

**1 2 3 4 5**

---

10) Initiates ideas about alternative solutions, instead of being passive or lazy about thinking up new ideas.

**1 2 3 4 5**

---

11) Works hard to resolve conflicts between team members.

**1 2 3 4 5**

---

12) Successfully resolves conflicts that are hurting team performance.

**1 2 3 4 5**

---

13) Demonstrates a level of performance that could be described as excellent.

**1 2 3 4 5**

---

14) Consistently performs very well.

**1 2 3 4 5**

---

**You have completed this questionnaire. Thank you for your participation.**

## Vita

Tjai M. Nielsen was born in Philadelphia, PA on May 9, 1971. He spent his young childhood in Denmark and then moved to Charlottesville, VA at the age of six. He graduated from Charlottesville High School in 1989 after winning a state championship in tennis. He then started at VA Tech where he graduated with degrees in psychology and sociology in 1993. Soon after the completion of his bachelor's degree he started a career as a tennis teaching professional. He was the Director of Tennis at the High Hampton Inn & Country Club for several years before beginning his graduate studies at Western Carolina University in 1996.

Tjai completed his master's degree while concurrently working full-time as a tennis director. He graduated at the top of his class with a 4.0 GPA. After completing his master's degree, Tjai began his doctoral studies at the University of Tennessee in industrial and applied psychology.

During this time he worked as a research assistant, taught a variety of undergraduate courses, worked as a consultant at the E Group, Inc., an international management consulting firm, and received an international research fellowship. In December of 2000, Tjai completed requirements for the Ph.D. in psychology with a concentration in industrial and applied psychology and a 3.97 GPA. Currently, Tjai is working as an industrial psychologist and consultant at the E Group while contemplating an offer of employment from RHR International.