

# The Impact of Team Efficacy Development on Performance in Multi-Team Service Systems

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# **The Impact of Team Efficacy Development on Performance in Multi-team Service Systems**

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# The Impact of Team Efficacy Development on Performance in Multi-team Service Systems

Rector magnificus, Ladies and Gentlemen,

An increasing number of organizations have implemented team-based structures as a way to improve performance by their front-line customer service operations (de Jong, de Ruyter, & Wetzels, 2005). As the focus is extended from the individual to the team level, there is a both a theoretical and a managerial necessity for an in-depth understanding of the mechanisms that determine team performance. Recent research has confirmed that team efficacy is a robust predictor of team performance (Gully, Joshi, Incalcaterra, & Beaubien, 2002; Jung & Sosik, 2003). Despite the increasing number of studies on antecedents and consequences of team level efficacy beliefs, however, gaps in our understanding remain. Prior research has yielded a limited understanding as well as inconsistencies as to whether predictor-criterion relationships are homologous across individual and team levels of analysis (Chen, Webber, Bliese, Mathieu, Payne, Born, & Zaccaro, 2002), across interdependent teams (Marks, DeChurch, Mathieu, Panzer, & Alonso, 2005), across time (Lindsley, Brass, & Thomas, 1995), and across performance criteria (de Jong et al., 2005).

First, earlier research on team efficacy has been based on the premise that collective efficacy and self-efficacy models share the same predictor-criterion relationships (Chan, 1998; Prussia & Kinicki, 1996). Yet, findings with regard to the impact of team efficacy predictor across levels have remained inconclusive. Hence, there is a need to systematically assess which predictors of team efficacy can be generalized across multiple levels.

A second issue concerns the question of how individual employee beliefs can be aggregated across levels (Chan, 1998). While the majority of studies propose a direct consensus model, which takes the group average as the preferred mode of aggregation, as this better reflects the level of synergy in group processes (Lindell & Brandt, 2000). Alternatively, firms have increasingly implemented multiteam systems in which teams need to operate interdependently in order to accomplish collective goals (Marks et al., 2005). In recognition of this organizational configuration, we examine between-group variability of team efficacy as an alternative composition model, exploring the possibility of generalizing employee beliefs to the business unit level of analysis.

A third important contribution of this study is that it examines the development of team efficacy over time. By including past performance parameters of the team as group-level predictors of team efficacy, we examine whether team efficacy beliefs have a dynamic quality and evolve with the development of the workgroup.

Finally, the examination of performance parameters at the team level is particularly relevant for the customer service teams which operate in a dynamic and interactive environment characterized by inherent conflict between performance criteria, such as delivering service excellence and sales productivity (Batt, 1999; Singh, 2000). Therefore, we include customer-perceived service quality and sales productivity both as antecedents and consequences of collective efficacy in boundary-spanning teams (de Jong, de Ruyter, & Lemmink, 2004; de Jong et al., 2005).

## **DEVELOPMENT OF A CONCEPTUAL FRAMEWORK**

During the past decades, a rich body of research has been developed that documents the impact of collective efficacy beliefs on performance in groups and teams (Lindsley et al., 1995; Gully et al., 2002; Gibson, 2003). According to Bandura (1997: 477), collective efficacy is defined as “...*a group’s shared belief in its conjoint capabilities to organize and execute the course of action required to produce given levels of attainment.*”. It is argued and consistently demonstrated that the higher collective efficacy in groups, the more likely its members will put effort and energy in the group’s work and show persistence in realizing its objectives. In our setting of boundary-spanning teams, team efficacy refers to the beliefs of its members in their team’s ability to provide service excellence to its customers.

Consistent with previous work on group effectiveness, we use an input-process-output (IPO) model, in which characteristics of the team, its members and the organizational environment drive the process mediator of team efficacy, which in turn affects performance (Hackman, 1987). It has been advocated that team and self-efficacy beliefs of individual team members share the same sources (Bandura, 1997). However, recent studies yield inconsistent results with regard to similarities in predictor variables (Chen, Thomas, & Wallace, 2005). In line with these studies and consistent with the dynamic nature of team efficacy (Baker, 2001), we discern achievement motivation, initial team efficacy, management support, and prior performance as antecedents of team efficacy and explore whether these antecedents are homologous across individual and team levels of analysis.

There is empirical evidence that shows that high achievers focus on the accomplishment of challenging tasks and make a stronger connection between their abilities and performance, which results in higher self-efficacy perceptions (Mathieu, Martineau, & Tannenbaum, 1993). Alternatively,

as individual team members bring their personal achievement motivation to the group, efficacious group members may improve the whole team's confidence by motivating fellow team members.

In relation to self-efficacy, it has been concluded that initial efficacy beliefs influence those at a later stage and that efficacy formation is relatively stable and incrementally develops over time (Mathieu et al., 1993). We extend these findings to team efficacy beliefs of boundary-spanning service teams and include employee beliefs of initial team efficacy as a substantive constant predictor of T2 team efficacy.

For boundary-spanning teams, local or business unit management support facilitates a customer orientation by providing the means and resources that enable teams to function effectively. In this sense, managers are the most relevant and proximal enactors of a frontline performance goal setting (Zaccaro, Blair, Peterson, and Zazanis (1995).

Over the last decade, researchers have proposed that perceptions of individual team members are also meaningful at the team level of analysis (e.g., Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Chen et al., 2002). As a result of the social context in which they develop, team members' individual beliefs of sources of their workgroup's conjoint capabilities converge and, therefore, may also be conceptualized at the team level (Kozlowski & Klein, 2000). There is, albeit scarce, empirical evidence of the group-level predictors of team efficacy (Chen et al., 2002; de Jong et al., 2005). In order to include contextual influences on team efficacy beliefs, we propose that at the aggregate level, achievement motivation, initial team efficacy, and management support have a differential positive impact on team efficacy (i.e., beyond the individual level of analysis). Analogous to self-efficacy, it has been argued that collective mastery experiences are a particularly influential source of collective efficacy (Bandura, 1997). It has been shown that feedback on prior performance influences collective efficacy perceptions (Riggs & Knight, 1994; Prussia & Kinicki, 1996). Interestingly, previous research on the performance of boundary-spanning service teams has found that service and sales performance parameters are differentially related to the team's climate for service (de Jong et al., 2004).

Previous research on antecedents of collective forms of efficacy shows considerable lack of uniformity in direct effects across different work settings. This has instigated researchers to explore the moderating role of situational and/or task related variables (e.g., Stewart and Barrick, 2000). With regard to multi-level conceptualizations, several authors (Lindell & Brandt, 2000; Schneider et al., 2002; Zohar & Luria, 2005) have proposed that it may be more meaningful to compose group-level team constructs in terms of the dispersion or variation in team member beliefs.

High within-team variability in team efficacy beliefs will weaken the positive impact of predictor variables as the formation of team efficacy is hampered by "...*interpersonal friction, conflict and process losses*" (Lindell & Brandt, 2000: 337). In such contexts, characterized by idiosyncratic interpretations of the team's capability, we propose that perceptual disagreement will decrease the positive impact of achievement motivation and prior perceived service quality ratings on subsequent team efficacy beliefs. Likewise, we expect that the negative impact of sales performance will be strengthened by team efficacy variability. In addition, incongruence in team member beliefs may hinder team members in coping with poor environmental conditions (e.g., unsupportive management) and obstruct consistency in efficacy beliefs over time and across employees. Therefore, we expect within-team efficacy variability to moderate the impact of the antecedents on team efficacy.

In addition to within-group dispersion, recent multilevel research (Zohar & Luria, 2005) has proposed that it is relevant to extend the dispersion model by including between-group variability with respect to focal constructs in order to attain a more in-depth understanding of teams in relation to the proximal organizational environment in which they operate. For instance, various service teams may cooperate within one branch office offering either complex advisory vs. routine services. We propose to incorporate this business-unit variable and explore its moderating influence on the relationships between team efficacy and its group-level antecedents. Specifically, it may be argued that in an interdependent work environment that has to justify its existence and contribution to the bottom-line continually, variation in confidence in the ability to do well will discourage teams to work harder to contribute their share. We also predict that variability in between-team efficacy beliefs will act as a barrier to efficacy development over time. In addition, efficacy variability at the business-unit level makes it more difficult for management to fine-tune and optimize their support as team expectations are more diverse. Also, in case of higher variability within a business unit, the relationship between team efficacy and performance will be less stable over time, and this is likely to hamper the predictive power of past service performance parameters.

There is emerging empirical support for group-level efficacy-performance relationships (Gully et al. 2002; Prussia and Kinicki, 1996). However, as we argued above, frontline service teams need to balance the delivery of service excellence with the requirements imposed by sales performance targets (Batt, 1999). Efficacy beliefs that are specifically related to the team's service delivery ability are likely to result in more favorable customer evaluations, while at the same time yield poorer sales performance. Indeed, de Jong et al. (2004, 2005) find diverging effects of related group-level predictors, such as team climate and group potency on service and sales performance parameters.

## EMPIRICAL STUDY

Surveys were sent to employees and customers of a large European bank. This bank comprises more than 55,000 employees, working in approximately 400 branch offices. The branch offices consist of multiple teams of service employees, where each team is responsible for various types of services, such as credit applications, checking and savings accounts, investment counseling and consulting, and estate planning. A random sample of 100 service teams was selected from a total population of 848 teams. Non-response, lack of customer performance data, and the fact that we could not calculate between-efficacy variability ratings for several teams, resulted in net usable samples of 41 teams at T1 and 45 teams at T2. The teams under study have an average team size of 21. Data were collected at T1 and at T2 (seven months later) by means of questionnaires that were sent to employees of the service teams and their customers. For the employee survey, all members of the team were invited to fill out the questionnaire. In total, 677 questionnaires from 41 teams were returned at T1 (77.8%) and 622 questionnaires from 45 teams at T2 (62.2%). For the customer survey, we randomly selected samples of 150 customers per team at T1 and T2. In total, 1252 questionnaires from 41 teams (20.4%) at T1 and 1309 questionnaires from 45 teams (19.4%) at T2 were returned by mail.

The measures for our study were adapted from previously published measurement instruments with favorable psychometric properties. In addition, we evaluated the measurement properties of these measures at the individual employee level (at T1) by conducting a confirmatory factor analysis. We employed robust maximum likelihood estimation in EQS 6.1 to obtain the estimates (Bentler, 1995). Our analysis revealed that our measures exhibited unidimensionality and proved to be satisfactory in terms of reliability, convergent and discriminant validity. We operationalize within-team efficacy variability, using the standard deviation of team member perceptions of their team., as it has been argued in recent discussions that the standard deviation better reflects within-team variability (Schneider, Salvaggio, & Subirats, 2002; Zohar & Luria, 2005). In addition, our operationalization of the between-team efficacy variability-parameter is based on Zohar and Luria's (2005) operational definition of climate variability. Specifically, we operationalize between-team efficacy variability by taking the standard deviation of group means of team efficacy for each branch office.

## Findings

**Analytical procedure.** We specified hierarchical linear regression models, using MLwiN software (Rasbash et al., 2000) to estimate the lagged effects of the antecedent variables at T1 on team efficacy at T2. To begin with, we included the control variables and the antecedents at the individual and the group level (Direct Consensus Model 1). Next, we added group-level interactions between within-team efficacy variability and the antecedents to test the full model (Dispersion Model 2a). Finally, we tested a competing model (Dispersion Model 2b) with group-level interactions of between-team efficacy variability and the antecedents.

**Direct effects.** Our results reveal that dispersion model 2b outperforms dispersion model 2a and direct consensus model 1 in terms of explanatory power. More specifically, model 2b reveals positive individual-level effects of achievement motivation, team efficacy, and management support at T1 on team efficacy at T2. At the group level there also appears to be a positive effect of customer-perceived service quality at T1, a negative effect of sales at T1 and a positive effect of team efficacy at T1 on team efficacy at T2. Conversely, neither achievement motivation nor management support at T1 appear to have a significant group-level effect on team efficacy at T2.

**Moderating effects.** There occurs a significant negative interaction of within-team efficacy variability and customer-perceived service quality (see dispersion model 2a). This signifies that when within-team efficacy variability increases, the positive effect of perceived-service quality on team efficacy becomes weaker. In contrast, none of the interactions of within-team efficacy variability with the other four antecedents demonstrates significance. We find a significant negative direct effect of between-team efficacy variability on team efficacy and significant interactions with three antecedents (see dispersion model 2b). To begin with, there occurs a significant negative interaction of between-team efficacy variability and initial team efficacy on team efficacy at T2. This means that when between-team efficacy variability increases, the positive effect of initial team efficacy on subsequent team efficacy becomes weaker. In other words, alignment in efficacy beliefs between teams contributes to team efficacy development over time. Contrary to our expectations, we find a significant positive interaction of between-team efficacy variability with group-level management support. This signifies that when between-team efficacy variability increases, the positive impact of management support on team efficacy at T2 is stronger, indicating no support for Hypothesis 8c. Furthermore, our findings reveal a significant negative interaction of between-team efficacy variability and sales at T1. When between-team efficacy variability increases, the negative effect of sales becomes stronger. In addition, we do not find significant cross-level interactions of between-



team efficacy variability with group-level achievement motivation and customer-perceived service quality at T1.

***Consequences of team efficacy.*** In addition, we used the data collected at T2 to estimate the group-level effects of team efficacy on its consequences by means of ordinary least squares regression. Our results show a significant positive effect of team efficacy on customer-perceived service quality, while no relationship exists with sales.

## **DISCUSSION**

The purpose of our study was to assess longitudinally the development of team efficacy in boundary-spanning service teams across individual, group and business unit levels of analysis and to explore its impact on marketing performance parameters.

***Individual-level effects.*** At the individual level, our results show that achievement motivation, initial team efficacy, and management support exert a positive influence on subsequent team efficacy at T2. The positive effect of achievement motivation affirms findings from studies on self-efficacy and reveal that individual motivational tendencies positively impact collective efficacy beliefs in relation to teams (e.g., Mathieu et al., 1993). Similarly, initial beliefs about team efficacy of individual employees are positively associated with team efficacy appraisals in a later stage. The positive impact of individual-level perceptions of management support empirically substantiates the notion that supportive management assists employees in recognizing their collective capabilities by offering them the means and resources they need in order to effectively operate as an interface between market and company.

***Group-level effects.*** Additionally, our findings reveal that the group-level measure of initial team efficacy contributes uniquely to the prediction of efficacy beliefs at T2. This signifies that individual team member efficacy beliefs converge as a result of social, synergetic processes. The fact that a consensual understanding of the team's ability to deliver service excellence exists, is important in the customer-contact environment which is often characterized by lack of role clarity and heterogeneity in task performance as well as customer requirements (Batt, 1999). Conversely, no group-level effects of achievement motivation and management support were found. This signifies that the influence of these predictors of team efficacy is mainly a function of employees' personal cognitions and individual values. In general, our findings indicate that predictors of team efficacy do not universally seem to hold at multiple levels of analysis across time. We do find, however, that constructs that are substantively associated with the group level (initial team efficacy as well as team

performance parameters), as opposed to individual- or organization-related constructs exhibit a lagged group-level effect on employees' team efficacy beliefs. This is consistent with recent studies on the development of collective efficacy beliefs (e.g., Baker, 2001).

Additionally, consistent with theorizing on efficacy constructs (Bandura, 1997), previous mastery experience exhibits a strong influence on team efficacy perceptions over time. Past performance validates the team's efforts as constructive and efficacious. Yet, we find that group-level past performance parameters have significant but diverging effects on team efficacy perceptions. While past customer-perceived service quality ratings have a positive impact on team efficacy, past sales data is negatively related to team efficacy beliefs. This can be explained by the task-specific nature of the team efficacy construct which is primarily oriented towards service delivery. As team efficacy beliefs in our study refer to the fulfillment of customer service delivery needs, it is likely that these will be influenced positively by customer perceptions of service quality. On the other hand, sales performance is associated with maximizing returns and cost control, which may be conflicting with maximal responsiveness to customer demands and service excellence (Singh, 2000).

***Moderating Effects.*** An important result of our study is that within-team and between-team efficacy variability have a diverging moderating impact on predictor-criterion relationships. On the one hand, within-team efficacy variability moderates the impact customer-perceived service quality, such that customer-perceived service quality (at T1) has a weaker impact on team efficacy at T2, under the condition of higher within-team efficacy variability. This result empirically substantiates Hackman's (1987) contentions that synergy (or lack thereof) between members influences the impact of team inputs on team process variables. In addition, our findings show that the negative effect of past sales performance on team efficacy is stronger when between-team efficacy variability is high. An explanation may be that similarity in inter-group beliefs is seen as an affirmation of existing group orientation on service excellence. Contrary to expectations, the group-level measure of management support has a stronger positive effect on team efficacy in the high between-team efficacy condition. This signifies that managerial support is most influential when uniformity is lacking between teams. This is a situation in which leadership by local management must make a difference to bridge differences.

Group-level initial team efficacy appears to have a weaker positive impact on subsequent team efficacy perceptions in case between variability is high. Apparently, the team's initial level of efficacy is less critical to efficacy development, when teams operate in an organizational unit that exhibits disagreement in team efficacy beliefs. In general, our results advance our understanding of the

efficacy dynamics between teams and empirically validates Zohar and Luria's (2005) notion that, in addition to perceptual diversity within the team, variety in inter-team dynamics of organizational settings requires research attention.

Finally, our results demonstrate that task-specific efficacy beliefs are primarily related to substantively proximal performance indicators. In contrast, confidence in the collective ability to serve customers well does not significantly impact sales performance. As Schneider et al. (1998) argue this is reflective of the inherently competing facets of collective cognitions, i.e., the priorities of service vs. transactional efficiency. Our study nuances the findings of previous research by showing that task-specific efficacy beliefs are likely to be related to specific types of context-specific performance.

## **THEORETICAL IMPLICATIONS**

Our study contributes to the literature on efficacy by (1) taking a multi-level perspective, (2) examining the antecedent-team efficacy relationship *over time*, (3) considering different compositional models of aggregation, and (4) relating team efficacy to differential performance parameters. To begin with, our study demonstrates that lagged predictor-criterion relationships are not homologous across levels. In view of the limited body of empirical evidence on homology across individual and team levels, more research is needed to identify which particular antecedents predict team efficacy at both levels and whether this depends on the type of teams, or the organizational context in which teams operate.

Second, our study contributes to the literature on collective efficacy beliefs by taking a longitudinal perspective, investigating the lagged impact of antecedents on team efficacy perceptions across levels of analysis. As such, this study extends current multilevel organizational research that is primarily based on cross-sectional designs. Future longitudinal research is required to enrich our understanding of the theory behind the cyclic nature of team efficacy–performance relationships and substantively address causality in effects.

Third, our study contributes to the emerging body of literature on multilevel team research by investigating differential composition models as modes of aggregation. One key finding is that moderating impact of between-team efficacy variability is more dominant in that it has a stronger moderating impact on antecedent-team efficacy relationships relative to within-team efficacy variability. In general, our results demonstrate the relevance of considering alternative unit-dispersion models of aggregation. Our findings emphasize that, in addition to synergetic processes among

group members, coherence among multiple teams within organizations or business units requires research attention (Marks et al., 2005). Future team research, therefore, should attempt to provide a more rigorous interpretation of how inter-team differences and dynamics shape collective confidence beliefs under what circumstances.

Finally, our study extends previous research on team efficacy-performance relationships by considering different types of performance parameters, such as external customer perceptions and internal sales data. Our results show that team efficacy is positively related to customer perceptions but not to sales performance. Future longitudinal research could explore whether both performance parameters converge and how efficacy beliefs can be used to accomplish the attainment of both efficiency and effectiveness. Drawing on diverse data sources, future work should assess the generalizability of our findings to other boundary-spanning settings (e.g., after-sales services, business-to-business services, contact center services).

## **MANAGERIAL IMPLICATIONS**

Our findings also have a number of managerial implications. Overall, our results assist managers of team-based front-line operations in developing a more in-depth understanding of mechanisms behind team efficacy-performance relationships. More specifically, the group-level impact of initial team efficacy at T1 implies that part of the development of collective efficacy beliefs takes place at the group-level and that task-specific confidence progressively develops over time. This suggests that it is viable to focus management-initiated interventions at the group level with the aim of increasing average levels of team efficacy. Through training programs centered on the identification of team strengths and collective capabilities as well as the opportunity to test these, team efficacy beliefs could be enhanced.

A further practical implication of our findings is that feedback about past performance shapes employee confidence beliefs about their abilities to serve customers. It seems important to institutionalize task-specific feedback programs to facilitate information exchange on performance by, for instance, the implementation of shared databases and groupware. This is also importance for the stimulation of within-team consensus.

Our results reveal that variability in efficacy beliefs between teams is an influential mechanism that shapes the development of efficacy over time. Schneider et al. (2002) already warned against the formation of ‘subclimates’ in bank branches. In order to reduce the likelihood of their occurrence, (branch) management should promote clear and coherent policies and procedures and prioritize

common objectives. Alignment of efficacy beliefs between teams is conducive to accomplishing higher-order performance objectives (i.e., at the branch level) and prevents suboptimal goals at the subclimate level.

We show that collective confidence beliefs about the ability to provide service excellence are positively related to service performance but at the same time could not be identified as a driver of sales performance. In order to bridge the gap between apparently conflicting goals, management is advised to stimulate team efficacy beliefs aimed at the convergence of service excellence and transactional efficiency. By triggering beliefs about the team's capabilities to develop 'smarter' service routines or to focus on return on service quality and relational equity, by training teams in cross-selling during service encounters, new forms of team efficacy may be developed in which relative priorities coexist, forms of efficacy that contribute to dealing with the inherent conflict between frontline performance parameters.

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