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TITLE

Mastery of Teams: A Bridge of Two Models

ABSTRACT

Our study examined two predominant theories to help organizations focus on the critical criteria when deploying teams. We found Hackman's model served as an overlay for Katzenbach and Smith's model. We also validated a team assessment in an abbreviated form, which could motivate organizations to deploy assessments at the formation of teams.

PRESS PARAGRAPH

With a busy team, every moment counts to help them stay sharp and get the job done. How do you know if a team is ready to work effectively, and can you find time in a team's schedule to help them figure it out? We crafted a team assessment of just 18 items, designed to focus on the critical criteria when deploying and optimizing teams. Using two predominant theories to help practitioners and ultimately organizations, we found that Hackman's model can serve as an overlay for Katzenbach and Smith's team model, suggesting that while the terms may be different, the underlying structure is the same. When an assessment offers a no-cost, theory-driven, evidence-based and fast way to determine team readiness, organizations could be motivated to deploy assessments earlier in the formation of teams.

Author Note

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Mastery of Teams: A Bridge of Two Models

Problems with coordination, motivation, and competition are among a few issues Hackman (2009) cited when highlighting teams can damage rather than accelerate performance of a challenging task. In fact, about 60 percent of the time work teams fail to accomplish their goals (Parisi-Carew, 2011) and 75% of cross functional teams are dysfunctional (Tabrizi, 2015). Teams go awry because the focus is misplaced when designing, managing, and supporting teams, waiting instead for problems to surface before implementing interventions (Gunther, 2012). The subject of teams has been widely studied and prevailing theories and models have been posited. The question remains how these models can be fully utilized to realize the expected benefits of teams.

Our goal in this study is to examine the relationship between two predominant theories from the literature (DeMeuse 2009), specifically the models of Hackman (2002) and Katzenbach and Smith (1993), suggesting Hackman's model is an overlying theory for Katzenbach and Smith's model. Gilley, Morris, Waite, Coates and Veliquette (2010) highlighted some similarities in these theories in describing the characteristics of teams and we propose to further align them, narrowing rather than broadening team theories. First, we will provide a brief overview of each model.

Hackman proposed five conditions to foster work team effectiveness for self-managing and self-designing teams: (1) teams must be real, (2) teams need a compelling direction, (3) teams need an enabling structure, (4) teams need a supportive organization, and (5) teams need expert coaching. Teams must be real in that they are bounded and stable over time and require members to work interdependently to achieve an objective. Teams need a compelling direction with members needing to know and agree on the challenging

goal they are working toward together. Teams need an enabling structure for its tasks, composition, and norms to facilitate good processes. Teams need a supportive organization including the reward system and environment to encourage the work the team is charged to perform. Finally, teams need expert coaching to help minimize the inefficiencies in their processes and instead harness the potential synergy of teamwork.

Similarly, Katzenbach and Smith (1993) highlighted eight components for building team performance by (1) establishing urgency, demanding performance standards and direction -- *purpose*, (2) selecting members for skill and skill potential -- *skills*, (3) paying attention to first meetings and actions -- *commitment*, (4) setting clear rules of behavior -- *norms*, (5) establishing and seizing upon a few immediate performance-oriented tasks and goals -- *goals*, (6) challenging the group regularly with facts and information -- *results*, (7) spending time together -- *morale*, and (8) leveraging the power of positive feedback, recognition and reward -- *reward*.

Next, as the above descriptions lay out, we briefly discuss the alignment in the components of each model. For example, Hackman's condition of providing a compelling direction overlays Katzenbach and Smith's two components of purpose and goals (see Figure 1). The condition of a real team is related to commitment and results, while the enabling structure condition is related to skills and norms. The supportive environment condition is related to reward and morale. Because the last condition, expert coaching, is specific to the leader of the team, we suggest that this condition has an influence on all of the conditions/components.

Research Objective 1. Hackman's five conditions of a team are related to Katzenbach and Smith's eight components of a team.

Organizations should routinely assess their teams to evaluate progress, commitment and energy of their efforts (Tudor & Trumble, 1996). Without assessments, it can make it difficult to measure objectively the effectiveness of teams and the allocation of the people resources. The psychometrically sound nature of a team assessment is critical to ensure a valid assessment is occurring. Practitioners have lamented using team assessments poorly can waste time and money (Baker, 2012), and in turn become barriers to using assessments within organizations. With the growing responsibilities workers are facing, even taking 20 minutes to complete an assessment can be a challenge (Cantu, 2007). As a result, team assessments are too often done after a problem has arisen. Given the propensity for failure and dysfunction, finding an assessment that can be done quickly, can be done at the outset of a team forming (Gunther, 2012), and taps into predominant team theory is essential. Thus, we propose a psychometrically sound (aligned to Hackman's and Katzenbach and Smith's elements), abbreviated assessment that could be leveraged in organizations to set teams up for success.

Research Objective 2. An abbreviated assessment can provide a valid measure of a team's characteristics.

METHOD

Participants

Participants were 165 employees (125 Women; 39 Men; one who did not respond) from a large healthcare organization in the Southwest. They were volunteers from a pool of individuals who had completed management training courses within the last 6 months of the survey request. All individuals indicated that they were in people leadership positions in

which they led groups or teams. Of all participants, 53.6% were White, 19.3% were Black, 13.3% were Asian, 10.8% were Hispanic, and 1.2% were American Indian/Alaska Native. The average age of participants was 46.8 years old (SD = 9.7 years).

Measurement and Analysis Plan

The original survey was comprised of 40 items ($\alpha = .95$) to allow us to refine the instrument with the best items in our subsequent analyses. We examined them with an initial structure looking at their relationship with the eight team components of Katzenbach and Smith: Purpose; Commitment; Skills; Norms; Goals; Morale; Reward; and Results. Items were rated for level of agreement with each statement from *Never* (1) to *Often* (4). Specifically, we used confirmatory factor analysis to establish the underlying structure and then used second order factor analysis to establish whether Hackman's model could overlay Katzenbach and Smith's model. We also used correlations to establish the convergent and divergent validities with a pre-established team survey.

RESULTS

Confirmatory Factor Analysis

A CFA was conducted using MPlus 7.4 (Muthen & Muthen, 1998-2015) to test the fit of the 8 factor model (team components) with the original 40 items on the team survey (40 indicators loading on the factors as shown in Table 1). There were no missing data. As can be seen in Table 1, all loadings associated with indicators of the team elements were significant. Multiple indicators of fit indicated that the model was adequate: χ^2 (780) = 1659.19, RMSEA = .04, CFI = .80, TLI = .78, SRMR = .07. The chi-square test of model fit was significant (e.g., Kline, 1998), but all other fit indices were in the adequate to good range.

In order to make the model stronger and create a more efficient survey that captured the essence of each element, we revised the model to include only some of the strongest items for each team element. "Strongest" items were defined by a combination of high factor loadings and taking into account theoretical relevance, with an eye towards keeping the survey brief (under 20 questions). Through these means, the model was reduced to 18 items, with 2-3 items per factor ($\alpha = .91$). As can be seen in Table 2, all loadings associated with indicators of the team elements were significant. Multiple indicators of fit indicated that the model was now quite good: χ^2 (107) = 129.44, RMSEA = .04, CFI = .96, TLI = .94, SRMR = .05.

Construct Validity for 18-item Survey

We sought to validate this new survey with a well-validated survey that is also free and available for research purposes, namely an assessment of psychological safety and team efficacy by Edmondson (1999). In the multiple components of that assessment, some align well with our team components and some do not, providing a useful test for convergent and discriminatory validity. Overall, our instrument showed good construct validity with the Edmonson survey ($r = .72$). We proposed that many of the Edmonson components such as Task Design, Clear Direction, Team Composition, Team Efficacy, Team Psychological Safety, and Team Learning Behavior were well-aligned with our 8 team elements (i.e., convergent validity), while items having to do with elements outside the group's control such as Supportive Organization Context (e.g., This team is kept in the dark about current developments and future plans that may affect its work) or related to the individual-level only (e.g., Internal Motivation) were not (i.e., discriminatory validity). Results supported this, with good convergent validity ($r = .74$, $p < .001$) and discriminatory validity ($r = .18$, $p > .15$).

Relating Team Components to Hackman's Five Conditions

We were also interested in how our initial model could be applied to Hackman's Five Conditions of a Team. Using our 18-item survey, we conducted a second-order factor analysis to relate Katzenbach and Smith's eight team elements to four of Hackman's five conditions: Compelling Direction, Real Team, Enabling Structure, and Supportive Context. Note that we did not examine how our items were related to the condition of Coaching. Coaching is highly related to leader behavior, and our survey focused exclusively on questions regarding behavior and performance at the group level. Moreover, Coaching is a condition that becomes even more relevant to a team *after* it has been deployed, to help it maintain its status as a high-performing team, and our survey is focused on assessing a team's state before being deployed.

We hypothesized that the team elements of Purpose and Goals were related to Hackman's Compelling Direction; Buy-in and Commitment and Measuring Results were related to the Real Team condition; Complementary Skills and Talents and Norms were related to the Enabling Structure; and Morale and Challenge, Recognition, and Reward were related to the Supportive Context. Factor loadings for each team element onto the 4 conditions are shown in Table 2 and Figure 2. All loadings associated with indicators of the team elements were significant. Multiple indicators of fit indicated that the model was good: χ^2 (153) = 658.73, RMSEA = .04, CFI = .93, TLI = .91, SRMR = .06.

DISCUSSION

Teams are a critical part of today's workforce with expectations of increasing productivity and achieving greater outcomes when the benefits of the whole are fully realized. They are used across industries from energy to construction to airlines to healthcare. In fact, in

healthcare organizations, the multidisciplinary teams have become the predominant delivery of patient care today.

The focus on teams in the literature has been prevalent for many decades and is likely to continue given its predominance in the field. What remains is an impact to the percentage where rather than a majority of teams being dysfunctional (Tabrizi, 2015), the percentage is a minority. In order to realize their full effectiveness, the conditions for success have to be fully known. Many theories have outlined the criteria needed; however, the discipline of organizations to follow them has been hit or miss. In an effort to help focus organizations, we proposed a narrowing rather than broadening of team theories to stress the conditions/components needed for success and found overlap between two predominant theories, Hackman (2002) and Katzenbach and Smith (1993).

Understanding what a team is and is not can provide valuable insights in how to strengthen its performance. The primary purpose of team assessments is to provide the individuals of the team with an awareness of how it functions. Specifically, it can provide an indication of where the group is on the path to becoming a high performing team. Understanding how a group is functioning as a unit, no matter where it is on the continuum, provides valuable insight for improving work productivity and satisfaction. Many comprehensive team assessments exist today; however, their length (80 to 90 items) can pose a barrier to use by organizations. We proposed and found that an abbreviated 18-item assessment could offer insight into a team's readiness for deployment and success.

Future directions

We explored four conditions of Hackman's model along with eight characteristics of Katzenbach and Smith's model. Future research could incorporate the fifth condition, expert coaching, in furthering the research to understand whether there could be a convergence of team theories. Specifically, research could examine the role that the leader as the expert coach plays in this convergent model. The attitudes, behaviors, and effectiveness of a leader of a team are some of the most significant determinants of whether a group can successfully become a team, and later, a high performing team. Understanding a leader's influence on how a group is functioning as a unit, provides valuable insight for improving work productivity and satisfaction.

Conclusion

There is no shortage of theories to understand teams. What has been lacking is how to bring together predominant theories to help practitioners and ultimately organizations make sense of the conditions, characteristics, components, or elements they should focus on when trying to optimize teams. We found that Hackman's model can serve as an overlay for Katzenbach and Smith's model, suggesting that while the terms may be different, the underlying structure is the same. We also found that the assessment of a team could be done in an abbreviated manner, which could provide motivation to organizations to deploy assessments earlier in the formation of teams. Teams have the potential to move organizations forward at a rapid pace. To do so, routine, effective assessments of the teams must be the norm rather than the exception.

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Table 1

Unstandardized (Standard Error) and Standardized Factor Loadings for 8-Factor Confirmatory Model of Team Effectivene

Factors and Indicators	Unstandardized (SE)	Standardized
Purpose		
Our group shares a clearly understood common purpose.	1.00(--)	0.57
Our group has the sense that our work is important to the institution right now.	1.41(.29)	0.70
Buy-In and Commitment		
Our group works towards common goals that everyone articulates in the same way	1.00(--)	0.58
Each group member is equally committed to the group's success	1.13(.13)	0.61
Our members faithfully fulfill group decisions, even if they disagree with them	.80(.18)	0.52
Each group member is individually accountable to the group's purpose, goals, and work approach	.92(.15)	0.55
Each group member demonstrates complete ownership of assigned tasks	1.05(.16)	0.63
Our group communicates and coordinates work efforts effectively	1.17(.13)	0.70
Each group member clearly understands their assigned tasks	.93(.13)	0.62
Each group member participates in making important decisions	1.11(.16)	0.57
Each group member understands how individual contribution relates to group performance	1.37(.15)	0.73
Complementary Skills and Talents		
Our group can communicate with all members frequently	1.00(--)	0.57
Each group member possesses the skills necessary for us to be effective	.91(.15)	0.57
Each group member taps into the skills of others	1.45(.19)	0.74
Our members have a good blend of complementary skills and talents	.86(.16)	0.60
Norms and Rules		
Our group jointly takes ownership of how things get done	1.00(--)	0.73
Our group has established clear roles and responsibilities	.51(.10)	0.47
Our group uses time-efficient processes to complete our work	.80(.09)	0.64
Each group member completes assigned tasks on time	.53(.10)	0.47
Each group member follows agreed upon rules of conduct	.56(.07)	0.60
Each group member demonstrates respect for one another	.66(.10)	0.67

Table 1 continued...

Goals and Accountability		
Each group member clearly understands the group's performance expectations	1.00(--)	0.53
Each group member leaves meetings with clear and specific action items	.87(.15)	0.39
Each group member contributes equivalent amounts of high quality work	1.44(.20)	0.60
Our group's goals are set using the SMART framework	1.50(.29)	0.45
Each group member acknowledges when they have made a mistake	1.4(.23)	0.57
Morale		
Our group has a favorite motto, theme, or saying reflecting our purpose and identity	1.00(--)	0.56
Our group experience is meaningful and satisfying for our members	.80(.09)	0.76
Non-group members can quickly see and feel the high level of enthusiasm among our group	.95(.10)	0.78
Our group is generally positive and motivated, even in difficult times	.81(.11)	0.80
Challenge, Recognition, and Reward		
Each group member helps others further develop their skills	1.00(--)	0.63
Each group member is willing to further develop his or her own skills	.98(.13)	0.66
Each group member puts in extra time without being prompted	.81(.14)	0.48
Our group regularly seeks new information	1.05(.13)	0.69
Each group member holds other members accountable for their work	.98(.16)	0.57
Each group member has a strong personal commitment to one another's growth and success	1.41(.14)	0.77
Our group celebrates victories and rewards as a group	1.19(.13)	0.67
Measure Results		
Our work approach provides opportunities for regular modification and improvement over time	1.00(--)	0.72
Our group consistently meets our annual performance goals	.49(.07)	0.53
Our group's delivered results tend to exceed clients' standards of quantity, quality, and timeliness	.74(.10)	0.62

Table 2

Standardized Factor Loadings for Second Order Factor Model of Team Effectiveness (N= 165)

Factors and Indicators	Model Label	Estimate
Measurement Model		
Purpose		
Our group shares a clearly understood common purpose.	Purpose1	0.64
Our group has the sense that our work is important to the institution right now.	Purpose2	0.63
Buy-In and Commitment		
Each group member is equally committed to the group's success.	Commit1	0.54
Each group member understands how individual contribution relates to group performance.	Commit2	0.73
Complementary Skills and Talents		
Each group member taps into the skills of others.	Skills1	0.80
Our members have a good blend of complementary skills and talents.	Skills2	0.60
Norms and Rules		
Our group jointly takes ownership of how things get done.	Norms1	0.76
Our group uses time-efficient processes to complete our work.	Norms2	0.55
Goals and Accountability		
Each group member clearly understands the group's performance expectations.	Goals1	0.53
Each group member contributes equivalent amounts of high quality work.	Goals2	0.64
Each group member acknowledges when they have made a mistake.	Goals3	0.56
Morale		
Non-group members can quickly see and feel the high level of enthusiasm among our group.	Morale1	0.77
Our group is generally positive and motivated, even in difficult times.	Morale2	0.85
Challenge, Recognition, and Reward		
Our group regularly seeks new information.	Reward1	0.70
Each group member has a strong personal commitment to one another's growth and success.	Reward2	0.72
Our group celebrates victories and rewards as a group.	Reward3	0.69
Measuring Results		
Our work approach provides opportunities for regular modification and improvement over time.	Results1	0.67
Our group's delivered results tend to exceed clients' standards of quantity, quality, and timeliness.	Results2	0.53
Structural Model		
Compelling Direction		
Purpose		0.64
Goals and Accountability		0.63
Real Team		
Buy-In and Commitment		0.84
Measuring Results		0.89
Enabling Structure		
Complementary Skills and Talents		0.82
Norms and Rules		0.94
Supportive Context		
Morale		0.82
Challenge, Recognition, and Reward		0.93

Figure 1. Characteristics of Teams from Hackman to Katzenbach and Smith

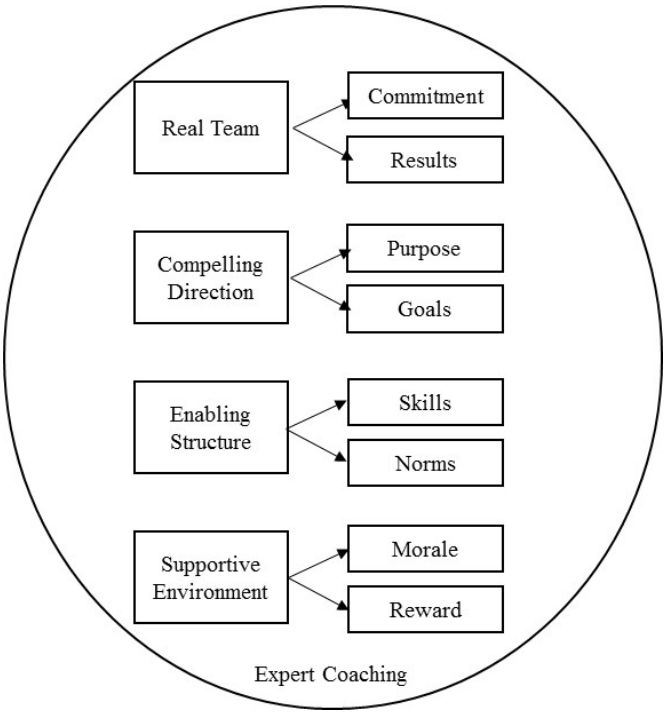
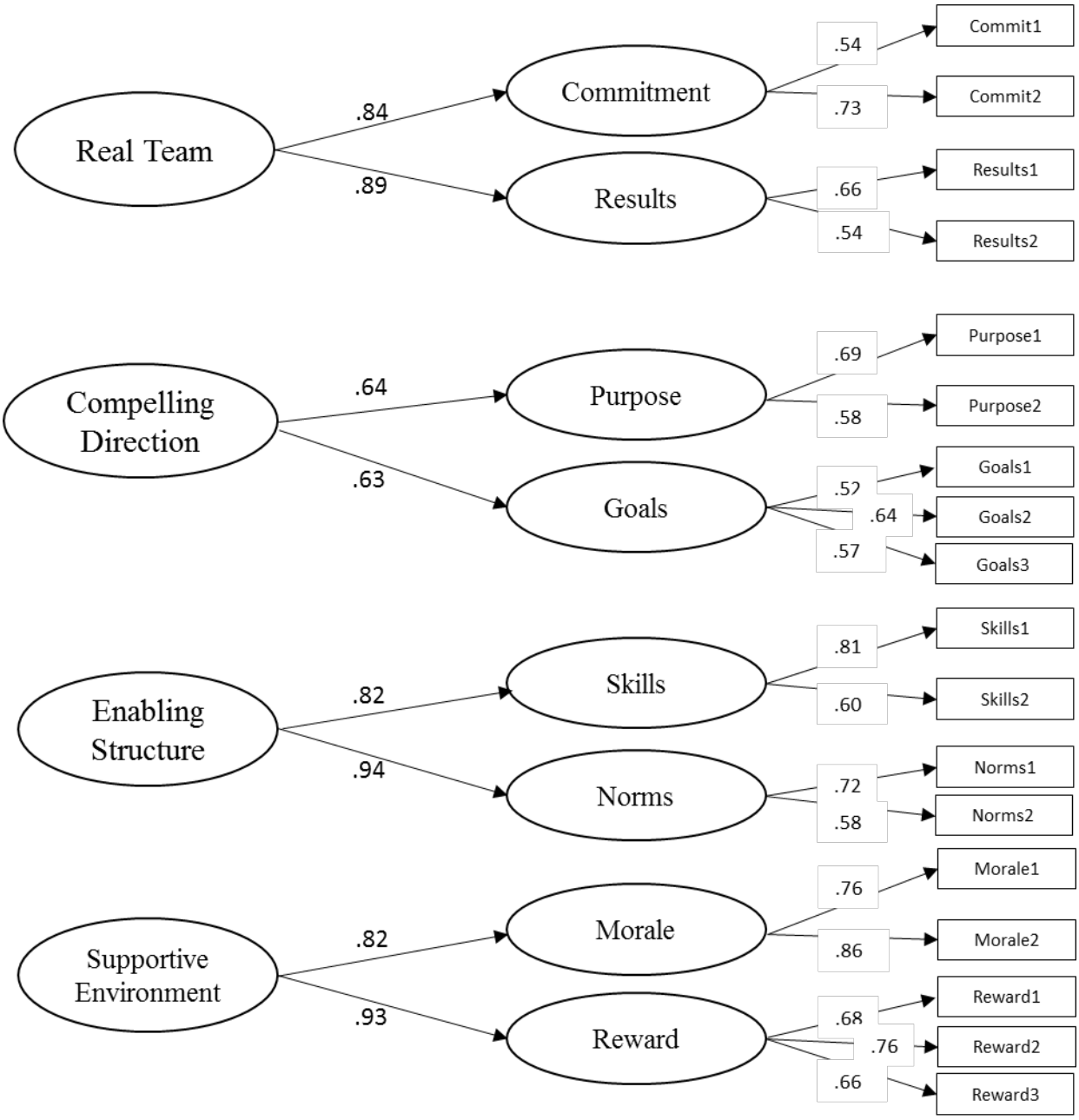


Figure 2. Second-Order Confirmatory Factor Model of Team Characteristics



Note: All factor loadings are significant at the $p < .001$ level.