

SELECTION IN TEAM-BASED SETTINGS THROUGH A PERSONNEL,
ORGANIZATIONAL, AND METHODOLOGICAL LENS

A Thesis

by

ALEJANDRA NATALY MANZANARES

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Chair of Committee,	Winfred Arthur, Jr.
Committee Members,	Olabisi A. Atoba
	Wendy Boswell
Head of Department,	Heather C. Lench

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ABSTRACT

This paper highlights the importance of establishing sound selection approaches for successful team performance in team-based organizations. Four different selection approaches are examined through a comprehensive literature review and a discussion of their strengths and weaknesses, selection procedures, and effectiveness is provided. Relevant journal articles, books, and conference papers were searched on Google Scholar, EBSCOhost, and PsycINFO to gather research on this topic. Some of the key search terms used were “traditional selection procedures,” “team-based selection procedures,” “team composition,” and “cluster hiring.” It was concluded that a combination of the team-based knowledge, skills, abilities and other characteristics (KSAOs) approach and the team composition selection approach are the best approaches for team-based organizations due to their practicality and effectiveness.

DEDICATION

This thesis is dedicated to my parents, Beatriz Chacon and Alberto Manzanares, and my brother, Luis Jaime Garcia. It is their sacrifices and unconditional support that allowed me to accomplish this work. “Cuando me vean volar recuerden que ustedes me pintaron las alas.”

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1. INTRODUCTION

From the end of the 20th century to the beginning of the 21st century there has been a change in organizational structures worldwide. Work is now organized using team-based structures as opposed to individualized work (Lawler, Mohrman, & Ledford, 1995). In this paper, a team is defined as “group of people who are interdependent with respect to information, resources, and skills and who seek to combine their efforts to achieve a common goal” (Thompson, & Thompson 2008, p. 4). Teams can manifest in various forms; some examples of teams in organizations are work teams, management teams, project teams, and advisory teams (Levi, 2016).

Today’s workforce is made up of cross-functional and self-managed teams to solve complex problems in organizations (Bligh, Pearce, & Kohles, 2006). Research has shown that 85% of organizations with 100 or more employees use some type of work team (Cohen & Bailey, 1997). These changes are rooted in ongoing economic, technological, and strategic demands on organizations. Additionally, organizations are increasingly utilizing virtual teams where team members are dispersed geographically or organizationally and must depend on technology to communicate with one another (Schiller & Mandviwalla, 2007). The current prevalence of teams has highlighted the need for different skills, experiences, and abilities among workers (Kozlowski & Bell, 2013).

Team-based organizations differ from non-team-based organizations in that teams are the primary performing unit and there is opportunity for shared control and participation among employees (Conner & Douglas, 2005; Mohrman & Quam, 2000). Teams are used to complete the organization’s core work; that is, it is the unit or team that provides the service or product to customers as opposed to individual employees (Mohrman & Quam, 2000). Industries in which

team-based work is prevalent include “(a) blue collar organizations (i.e., agriculture, forestry, fishing, mining, construction, manufacturing, and transportation/ utilities), (b) white collar organizations (i.e., wholesale or retail trade, finance, insurance, real estate, or public administration), and (c) nonprofit organizations (i.e., health care, education, or public services)” (Devine, Clayton, Phillips, Dunford, & Melner, 1999, p. 693). Some examples of common non-team-based professions include hairstylists, housekeepers, independent service providers, and physical trainers.

Organizations have come to realize that the traditional (non-team-based) approach is not the best strategy to tackle fundamental problem-solving tasks especially as Millennials start to join the workforce and seek collaborative work experiences (Gursory, Maier, & Chi, 2008). Schlechter and Strauss (2008) suggested that organizations need to make more use of team-based structures in order to remain competitive in this changing workforce. Additionally, a global survey reported that 92% of companies consider that redesigning their company structure into a team-based structure is important (McDowel, Agarwal, Miller, Okamoto, & Page, 2016).

Companies have begun to decentralize authority and are focusing on developing team-centric dynamics (McDowel et al., 2016). This has resulted in changing work roles as well as organizational goals, and increased the demand for selecting effective team members; someone who contributes to the success of the team with relevant knowledge, skills, abilities, and other characteristics (KSAOs) related to the task assigned to the team (Levi, 2016). Additionally, a team member should ideally possess collaborative thinking and teamwork skills (Levi, 2016). Despite these changing dynamics in organizations, most personnel selection research is largely focused on individual-level outcomes (Ployhart, Weekley, & Baughman, 2006; Saks, 2005;

Taylor & Collins, 2000). The ongoing transformation of the traditional structure highlights the importance of examining selection practices in team-based organizations.

Consequently, the objective of the present paper is to examine and discuss approaches to selection in team-based organizations. This was acquired first searching for relevant journal articles, books, and conference papers on Google Scholar, EBSCOhost, and PsycINFO. The key search terms were: “team-based organizations overview,” “traditional vs team-based organizations,” “traditional selection procedures,” “traditional KSAOs approach,” “common selection methods,” “team-based selection procedures,” “teamwork KSAOs in selection,” “team composition,” “personality and team composition,” “diversity in teams,” “cluster hiring,” “team-level selection,” “team composition in high-reliability environments,” and “factors that affect teams in high-reliability environments.”

This paper is divided into three sections. The first is an overview of the traditional selection approach and a team-based KSAOs approach. The team-based KSAOs approach is an extension of the traditional approach where the criterion is still independent job performance but the predictors are team-based. The aim is to provide a discussion and comment on personnel selection approaches in team-based organizations. The second section encompasses the team-level selection approach and team composition selection approach. This section examines selection in team-based organizations from an organizational level. The preceding two sections consist of an overview of each approach, the strengths and weaknesses of these approaches, the selection procedures used, and their overall effectiveness. The paper concludes with a discussion of the best approach for team-based organizations’ along with its theoretical and conceptual basis. A succinct commentary on the other approaches is also provided. Finally, theoretical and practical implications, limitations, and future directions are discussed.

2. TRADITIONAL SELECTION APPROACH

2.1 Overview

The objective of selection is to identify and hire individuals with the characteristics that are deemed to be necessary for successful job performance. These characteristics or individual difference attributes are commonly conceptualized as KSAOs where “O,” that is, “other” characteristics typically refer to noncognitive characteristics such as personality traits. Traditionally, to identify these KSAOs, organizations must first perform a job analysis. A job analysis is a systematic process of gathering, documenting, and analyzing work content, worker attributes, and work context for a specific position (Brannick, Pearlman, & Sanchez, 2017). When properly implemented, the job analysis provides organizations with a deeper understanding of the behavioral requirements for the job, thus creating a concrete basis on which to build selection decision-making systems.

Many of the established job analysis methods tend to focus on task-oriented approaches (Gatewood, Feild, & Barrick, 2016). This approach usually consists of tasks that have observable processes and emphasizes the behavior needed to complete said tasks (Wei, & Salvendy, 2007). Once these tasks have been identified and documented, the required KSAOs are established by a process of identifying and linking the specified KSAOs to the behaviors that they underlie. Appropriate selection procedures are then chosen to be used for hiring decisions. Subsequently, job applicants are assessed on the specified KSAOs and selection decisions are made based on their standing on these KSAOs.

2.2 Strengths and Weaknesses

A prominent strength to the traditional selection approach is that decisions are based on job-related information. This maximizes the organization’s chances of making an accurate

selection decision. Moreover, selection methods and decisions are more legally defensible for the organization because they can link the KSAOs being assessed back to the major work behaviors that constitute the job (Cascio & Aguinis, 2018).

One disadvantage of this selection approach, specifically for team-based organizations, is that it focuses solely on KSAOs needed to complete individual job tasks. Therefore, this approach only focuses on individual job performance and fails to consider additional team-based characteristics that may be important for an individual to possess in a team-based environment. Given that team-based organizations engage workers in various team projects, the focus of individual performance would be deficient in this context. Therefore, it is important for organizations to consider teamwork in addition to taskwork KSAOs (Stevens, & Campion, 1994).

One would expect that better individual performance would result in higher unit performance for the organization, but this relationship is not always linear (Ployhart & Weekley, 2010). This reinforces the idea that additional KSAOs (e.g., personality traits that are linked to interpersonal and team work skills) may be important facets of team performance and can bring a competitive advantage to the organization (Ployhart & Weekley, 2010). Additionally, it is important to note that organizations must consider their performance criteria when choosing predictors. The alignment between the selection predictor and performance criteria is crucial otherwise, applicants will be selected on the basis of characteristics that will not be needed on the job (Ployhart & Weekley, 2010). This alignment can be identified by conducting a job analysis to develop appropriate criteria and standards that represent successful job performance (Gatewood et al., 2016).

2.3 Selection Procedures

The development of selection procedures entails the operationalizations of the constructs that have been identified as being important to successful job performance. In this process, the distinction between constructs and methods is crucial to avoid uninterpretable or misleading evaluations of predictors and outcomes (Arthur & Villado, 2008). A predictor construct is considered to be the behavioral domain represented by psychological constructs (e.g., KSAOs), theories of job performance, or a combination of the two (Arthur & Villado, 2008). Conversely, predictor methods are the specific process or techniques used to collect information about the constructs (Arthur & Villado, 2008). Once the data are collected through the methods, it is used to make inferences about the individuals being assessed.

Constructs are identified via the job analysis. Once identified, one then has to decide on the choice of methods—which is influenced by several factors some of which include the organizations' financial and temporal resources, the construct of interest, the performance criteria, and the validity and reliability of the approach. Additionally, the predictor constructs may differ as a function of the level of analysis. The traditional selection approach uses individual-level predictor constructs to predict individual criteria, such as task performance. A common example of an individual-level predictor construct is cognitive ability or general mental ability.

Previous research has demonstrated that cognitive ability is positively related to job performance (Schmidt & Hunter, 1998). Cognitive ability is best measured through standardized tests because they are most valid method (Gatewood et al., 2016). Other methods such as, application forms, resumes, biographical questionnaires, and interviews can be used but these methods result in significantly less valid and reliable scores compared to measures of general

mental ability (Gatewood et al., 2016). An alternative operationalization of general mental ability is grade point average (GPA; Rohde & Thomson, 2007), which may be found in employees' resumes or biographical data. Similar to general mental ability, using other individual-level predictor constructs and operationalizing them through predictor methods can be considered an effective approach to predict job performance in general. However, this may not be the best approach for team-based organizations instead it is best considered as a complementary approach.

2.4 Is it Effective?

The traditional selection approach is widely accepted as an effective selection approach. There is a large volume of research demonstrating the relationship between individual-level predictors (e.g., KSAOs) and individual-level criteria across diverse job contexts (Ployhart, 2012). This approach is based on the fact that higher criterion-related validity translates into superior selection decisions for organizations (Ployhart, 2012). With this traditional approach, companies usually measure task performance which bears a direct relation to the organization's technical core (Borman & Motowidlo, 1993). Although industrial-organizational psychologists have traditionally conceptualized job predictors and job performance at an individual and taskwork level, this may not be the best approach for team-based organizations. Given the multidimensionality associated with job positions in team-based organizations, focusing solely on the individual taskwork aspects of job performance may be deficient.

3. TEAM-BASED KSAOS APPROACH

3.1 Overview

An extension of the traditional selection approach is an approach that includes teamwork-based predictors instead of focusing solely on predictors of individual performance. It has been previously proposed that the inclusion of teamwork in addition to taskwork KSAOs will result in higher employee performance for jobs where teamwork is emphasized (Morgeson, Reider, & Campion, 2005; Stevens & Campion, 1994). Researchers have explored the inclusion of team-based KSAOs to predict individual job performance (Morgeson et al., 2005; Stevens & Campion, 1994). Stevens and Campion (1994), proposed a set of teamwork KSAOs based on a review of the teams literature and developed an employment test that assessed these KSAOs. Scores on the test were related to supervisor and peer ratings of job performance. Similar to the traditional selection approach, this approach requires the relevant KSAOs to be identified through a job analysis which will in turn produce sound selection decisions.

Adding team-based KSAOs does not suggest that taskwork KSAOs are of less importance. This inclusion serves to compliment the versatility that is required from employees in team-based settings. Although this approach focuses on team-based KSAOs as predictors, the criteria are still individual-level job performance. Some common team-based KSAOs are conflict resolution, collaborative problem solving, and communication (Stevens & Campion, 1994). In terms of personality, higher levels of conscientiousness and agreeableness have been found to be valid predictors of positive team-based performance (Neuman & Wright, 1999; Peeters, Van Tuijl, Rutte, & Reymen, 2006). Neuman and Wright (1999), analyzed individual level job performance in teams using personality as one of their predictors. The findings confirmed that agreeableness and conscientiousness predicted individual team member performance.

3.2 Strengths and Weaknesses

Similar to the traditional selection approach, the identified KSAOs in this approach should be ideally derived from a job analysis. This is advantageous to the organization in terms of job-relatedness and legal defensibility. The most notable advantage of this approach is its incorporation of teamwork KSAOs, such as increased social and interpersonal characteristics, which are required or emphasized by the nature of team-based organizations (Stevens & Campion, 1994). In traditional individual work structures, the relevance and impact of characteristics such as interpersonal skills are diminished (Lawler, 1986). In team-based organizations, the amount of interpersonal interactions and communication that must be required of employees inevitably increases (Stevens & Campion, 1994). This highlights the benefit of selecting employees with higher levels of interpersonal competence in team-based organizations.

A challenge associated with the teamwork KSAOs approach is that the criteria evaluated for employees is still at the individual-level. Consequently, although employees are selected in part based on teamwork KSAOs, their job performance evaluations remain at an individual-level. This causes a predictor-criterion misalignment. Additionally, this can become a challenge for supervisors when employees are part of teams with high levels of interrelatedness such that it is hard to distinguish individual performance (Tesluk, Mathieu, & Zaccaro, 1997).

3.3 Selection Procedures

Similar to the traditional selection approach, this approach is also reliant on the operationalization of individual-level predictor constructs to predict individual criteria. The difference is that this approach considers teamwork predictor constructs in addition to taskwork constructs. There is a variety of team-based predictor constructs that have been identified by researchers. Some of the most common ones include interpersonal skills, communication,

personality, social skills, adaptability, and collaboration (Morgeson et al., 2005; Salas et al., 2009; Stevens & Campion, 1994).

Some potential predictor methods to assess these predictor constructs (teamwork KSAOs) include tests such as the Teamwork Test that was developed by Stevens and Campion (1994), or traditional personality tests. Some more common approaches include interviews and situational judgment tests (SJTs) (Morgeson et al., 2005). Assessment centers and the group exercises therein have also been found to be sound predictor methods for the operationalization of teamwork constructs (Arthur, Day, McNelly, & Edens, 2013; Gaugler, Rosenthal, Thornton & Benson, 1987).

3.4 Is it Effective?

The team-based KSAOs approach has strong theoretical support and has been a successful predictor of individual effectiveness within teams (McClough & Rogelberg, 2003; Morgeson et al., 2005). In addition to taskwork KSAs, certain personality dimensions have been shown to predict individual-level team-performance (Morgeson et al., 2005; Peeters et al., 2006).

This approach suggests that selecting employees who have high levels of teamwork KSAOs will result in better teamwork overall. However, selecting on higher levels of team-based KSAOs is not always associated with increased team effectiveness (Tesluk et al., 1997). There are other factors that can affect team effectiveness such as team composition, team members' geographical dispersion, motivation, and the complexity of team tasks, to name a few (Tesluk et al., 1997). Therefore, it is appropriate to conclude that this approach is effective for individual performance in team settings but it is unclear whether this is the best approach to predict overall team performance.

4. TEAM-LEVEL SELECTION APPROACH

4.1 Overview

The team-level selection approach refers to the concept of forming teams from a pool of applicants and selecting the team (or teams) that best meets the selection criteria instead of individual applicants. Conceptually, this would mean that an applicant pool would be grouped into teams and assessed through group-level selection methods. Subsequently, the organization would select one team. An extensive search of the literature failed to locate any studies that have conceptualized or empirically examined this approach. This means that the issues examined in the “Strengths and Weaknesses” and “Is it effective?” sections are primarily conceptually based with calls for empirical research as warranted.

Despite the lack of research in the team-level selection approach, a similar approach called “cluster hiring” has been evaluated. Cluster hiring refers to selecting a pre-existing team to fill in a new role in an organization (Munyon, Summers, & Ferris, 2011). Usually this pre-existing team has been previously working together for another organization (Munyon et al., 2011). This approach has been implemented in research settings where universities or research centers hire a pre-existing group of established researchers to enhance the universities’ reputation or to gain competitive advantage over other universities (Munyon et al., 2011). This approach has also been implemented in start-up research centers where a pre-existing group of researchers is hired to begin research projects as fast as possible (Munyon et al., 2011). Advantages that cluster hiring brings to organizations include an expedited return on investment and competitive advantage. The fact that pre-existing teams have already established team role negotiation, knowledge structures, and shared mental models will mitigate the time lag associated with team socialization (Chen & Klimoski, 2003). This will result in faster production or problem-solving

and a faster return on investment. Cluster hiring can bring competitive advantage to industries where employees' positions and backgrounds bring value to the organization. An example of this is seen in universities where professor's past accomplishments and research are factors that affect a program's reputation.

The team-level selection approach is similar to cluster hiring in that a team is selected as a collective to work for an organization. The difference is that the selected teams are not pre-existing teams; instead, they are composed from the pool of applicants during the selection process. This approach differs from the previous approaches discussed in this paper in that it uses team-level selection and team-level criteria.

4.2 Strengths and Weaknesses

In a meta-analysis on team composition, Mathieu et al. (2017) stated, "In an ideal situation, organizations could recruit, select, and compose teams with an optimal mix of members' KSAOs. This will rarely be possible, and thus creates the need for compensatory interventions" (p. 458). This statement highlights the complexity of composing teams within an organization and the additional interventions that must be implemented as a result. With this in mind, it is proposed that one of the advantages of the team-level selection approach is that the team selected will likely be optimal and it is less likely they will need further organizational interventions (e.g., training). Additionally, similar to the cluster hiring approach, this approach will likely result in a faster return on investment given that the team selected should have established roles and potentially shared mental models during the selection process (Munyon et al., 2011).

These advantages are especially salient in teams that work under conditions that demand immediate action and optimal performance such as military combat teams, long distance space

exploration teams, or similar extreme-environment teams. Landon, Slack, and Barret (2018) describe the need for data-driven methods for team composition at National Aeronautics and Space Administration (NASA) specifically for long-term missions such as the expected journey to Mars. The nature of space teams demands high levels of cohesiveness, cooperation, compatibility and trust. The larger the distance between the astronaut crew and mission control, the longer the delay of communication (Larson et al., 2019). Given the delay of communication, astronaut teams will have to work together to solve unexpected problems that may arise (Larson et al., 2019). In these cases, team composition will likely influence team performance by affecting social integration and the team's emergent states (Bell, Brown, Abben, & Outland, 2015). Ideally teams should have established successful teamwork dynamics before they leave for space to avoid interpersonal conflict when they are in the ship (Landon et al., 2018). Therefore, NASA recognizes the importance of both task-oriented and interpersonal-oriented teamwork success (Landon et al., 2018). Similarly, combat teams in the military are constantly facing changing conditions which demand constant flexibility and cooperation from team members (Donsbach et al., 2009). This highlights the importance of rapidly and effectively composing teams in the military.

A prominent disadvantage of the team-level selection approach is its lack of individual-level predictors. This would mean that applicants are largely dependent on their team members to be selected. Procedural justice perceptions will be negative among applicants if they are not selected because of their resultant unfavorable reactions to the fairness of the selection system (Findley, Giles, & Mossholder, 2000). Additionally, the need to compose teams from the applicant pool is also a disadvantage. Optimal team composition is complex and difficult to achieve therefore, it will be a tedious and time-consuming task to try to compose teams from

available applicants. A potential solution to this issue is to initially assess applicants' KSAOs at the individual level and use these results as the basis for forming the applicant teams.

Furthermore, team member roles and specific criteria for each role could be established before composing the teams. This way applicants can be placed in teams based on whether they meet the criteria for one of the member roles established.

Assessing applicants at an individual-level first can result in issues such as the possibility that there are not enough applicants who meet the criteria to form equally-sized teams. Another potential disadvantage is that once a team has been selected, a member may want to leave the organization thus disrupting the already established relationships among team members.

However, in many organizations teams have a shifting composition where team members join and leave throughout the duration of the team (Tannenbaum, Mathieu, Salas, & Cohen, 2012).

Temporary teams have become increasingly common instead of permanent teams (Levi, 2016).

Turnover may negatively affect team performance but there are established approaches that can

be implemented to solve this. For instance, focusing on team member roles rather than specific

team members can enhance the socialization aspect of the team (Levi, 2016). Cross-training can

facilitate role-focused approaches because it introduces team members to the roles and

responsibilities of their teammates (Marks, Sabella, Burke, & Zaccaro, 2002). By giving

individuals background knowledge on what information must be shared and interdependent

activities, team members can anticipate the needs of others (Marks et al., 2002). As a result, team

cooperation, communication, and coordination is enhanced.

4.3 Selection Procedures

In the team-level selection approach, team-level predictor constructs and criteria are used.

Therefore, predictor methods that lend themselves to group-level evaluation should be utilized in

the selection process. Some examples of such methods include assessment centers (e.g., leaderless group discussions) and simulations. Through these methods, constructs such as teamwork, cooperation, adaptability, and collaboration can be assessed.

4.4 Is it Effective?

Given the limited research on the team-level selection approach, effectiveness cannot be explicitly determined or established. However, it can be inferred that this approach may be successful particularly in high-reliability industries or organizations where team performance is critical. Through the team-level selection approach, organizations will be able to evaluate teams' contextual and task performance then select the team that best meets the criteria. This will likely reduce risk associated with sub-optimal teamwork in high-reliability environments. Overall this approach has the potential to be promising specifically for highly specialized organizations like the ones mentioned above. Once perfected, this approach may be applicable to more traditional professional industries and settings (e.g., engineering, business, human resources) but at the moment, this may not be the most effective method of team selection.

5. TEAM COMPOSITION SELECTION APPROACH

5.1 Overview

The team composition selection approach is focused on teams formed with existing employees in team-based organizations. This is parallel to staffing within the company to fill team member positions. In other words, when a team is formed in an organization, team members are selected from available employees. The rationale underlying the formation of work teams is that a combination of employee's complementary characteristics will result in optimal outcomes (Peeters, Van Tuijl, Rutte, & Reymen, 2006). Additionally, teams help organizations reduce costs given that team members can take on responsibilities previously assigned to supervisors or managers (Cohen & Bailey, 1997). Given the benefits that teams bring to organizations, it is critical to identify what characteristics a good team member should pose to succeed in a team. The input-output model (IPO; McGrath, 1964) has been traditionally used to describe how different factors (inputs) affect team outcomes. Newer models have since been advanced that expand on the foundational structure of the IPO model such as the input-mediator-outcome-input (IMOI) model (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In both of these models, team composition is considered an input specifically, it refers to team members' characteristics.

The team composition literature draws the distinction between surface-level and deep-level composition. Surface-level composition refers to characteristics that are readily apparent such as race, age, and sex (Bell, 2007). Deep-level composition refers to characteristics that are not readily apparent such as personality, cognitive ability, and beliefs (Harrison et al., 1998). Specifically, researchers have found general mental ability to be predictive of both team task performance and team viability (Barrick, Stewart, Neubert, & Mount, 1998). Sundstrom, Meuse,

and Futrell (1990), described viability as member satisfaction, participation, and willingness to continue working together. Other researchers note that despite task type, the average group cognitive ability is the best sole predictor of team performance (Edwards, Day, Arthur, & Bell, 2006). Some dimensions of personality that have been considered to be positive predictors of team performance include conscientiousness, agreeableness, extraversion, and emotional stability (Barrick et al., 1998). In terms of viability, teams with higher extraversion and emotional stability have been considered to be more successful (Barrick et al., 1998).

Other research supports using personality as a means to select individuals into teams given that agreeableness, specifically the facet of cooperation, has shown to facilitate team mental models (Fisher, Bell, Dierdorff, & Belohlav, 2012). Additionally, agreeableness at an individual and team level has been found to be the strongest predictor of performance in teamwork-based settings (Bell, 2007; Mount, Barrick, & Stewart, 1998). It has been proposed that agreeableness is strongly related to teamwork because of the harmonious nature of agreeable individuals (Bradley, Baur, Banford, & Postlethwaite, 2013). This in turn leads to better communication and cohesion among team members and results in enhanced team performance (Bradley et al., 2013). Sundstrom et al. (1990) described cohesion as pertaining to inter-member coordination, mature communication, problem-solving, and clear roles and norms. On that premise, researchers have found that team cohesion can be predicted by the team member with the lowest agreeableness score (Barrick, Stewart, Neubert, & Mount, 1998; Bell, 2007). This phenomenon has also been described as the “the bad apple effect” which captures the idea that one disagreeable individual can have a disproportionately destructive effect on team performance (Felps, Mitchell, & Byington, 2006).

More recent literature has also considered compositional effects of cognitive style, values, affect, task cognitions, contingency, and team diversity as potential predictors of team performance (Mathieu et al., 2017). Fisher et al. (2012) failed to obtain a significant relationship between gender diversity and team mental model agreements which suggests that team gender diversity does not affect team performance. Additionally, Fisher et al. (2012), found racial diversity to have a negative relationship with team mental model agreement. Although some research points to the idea that surface-level diversity can be detrimental to team performance, others believe it is beneficial (McLeod, Lobel, & Cox, 1996). Polzer, Milton, and Swarm (2002) found that demographic diversity (i.e. race, sex, age) was related to higher levels of creative performance when there was interpersonal congruence among members. Generally speaking, deep-level diversity is beneficial in that there is a larger scope of relevant knowledge, skills, abilities and other characteristics (McLeod et al., 1996). Within team diversity, researchers have also focused on different levels/types of attributes such as information perspectives, tenure and educational background (Mathieu et al., 2017). Overall, there are many different team member characteristics that have been measured and utilized as predictors of team performance.

The team composition selection approach uses a team-level analysis instead of the traditional individual-level analysis. This means that it is focused on how individual differences affect overall team performance. Team success is contingent on whether each of its members contributes to the goal at hand and on how the team works together (Kichuk & Wiesner, 1998). Team performance can be measured in various ways and is considered to be context-specific (Mathieu et al., 2017). Some of the most common forms of measuring team performance at the team-level include tangible outcomes (e.g., productivity, efficiency, and work quality, retention;

Mathieu et al., 2017). Collective emergent states are also considered outcomes of teams (e.g., viability and team cohesion; Mathieu et al., 2017).

The extensive literature on team composition allows practitioners to narrow down specific team member predictors that will result in increased team performance. In addition to the established team member predictors, practitioners should also take into consideration the organization's contextual factors (e.g., organizational culture, resources, size) when making team composition decisions.

5.2 Strengths and Weaknesses

A strength of the team composition selection approach is that it can be considered practical given that it does not require additional selection procedures because team members are chosen from existing employees. Additionally, it may be easier for the team to achieve cohesiveness and viability given that employees have more experience working with each other and may have already established successful relationships with other team members.

A drawback that this approach has is the complexity of composing the appropriate team. Organization's may find it difficult to decide what criteria team members must meet when being selected to form a team. Specifically, adequate combinations of characteristics such as personality, demography, and general mental ability can be difficult to achieve. Another thing to note is that small organizations may have a harder time composing a successful team due to their limited number of employees.

5.3 Selection Procedures

The team composition selection approach combines the individual-level predictor constructs of team members to predict team performance. The methods used to select team members are no different from previous individual-level predictor methods mentioned in the

preceding section (e.g., interviews, personality assessments, SJTs, etc.). It is important to specify the appropriate type of statistical operationalization that will be used to combine team member characteristics (Day, Gronn, & Salas, 2004). Commonly, team level composition is measured in terms of the mean, maximum, or minimum level of characteristics of the team. Steiner (1972) introduced a task typology consisting of four models that differ in the way contributions are combined: the additive, conjunctive, disjunctive, and compensatory model. An additive task is one in which team performance is best predicted by the average of individual member ability or prior job performance (Steiner, 1972). Some examples of this type of group task are individual members shoveling snow or lifting something heavy (Day et al., 2004). A more industrial example can be a group of workers individually assembling products or a group of telemarketers working in the same office (Day et al., 2004).

The disjunctive task is one in which team performance is contingent on the best performing member (Steiner, 1972). A group of mathematicians solving one equation is an example of this task type in that it only takes one individual to arrive at the correct solution (Day et al., 2004). In the conjunctive task type, team performance is said to be best predicted by the lowest performer on the team or when all team members must meet a certain goal in order for the whole team to succeed (Steiner, 1972). An example of a conjunctive task is a group of mountain climbers who cannot go faster than the slowest member on the team (Day et al., 2004). A compensatory task type is one in which team performance is said to be predicted by individual member contributions combined together (Steiner, 1972). A simple example of this task is when a group member has lower cognitive ability but another member compensates for this weakness with their higher level of cognitive ability.

5.4 Is it Effective?

Existing team composition literature established predictors of successful overall team performance. The team composition selection approach is practical in that organizations do not have to outsource to form teams and can use existing employees. Alternatively, this can become an issue if the organization does not have employees who poses the desired characteristics of a team member. Despite this, team training has been shown to be a successful means of improving team performance (Salas, DiazGranados et al., 2008). Therefore, if a team is not meeting expectations at first, training can be used as an intervention. Overall the team composition selection approach can be considered effective even more so if initial selection procedures are sound. In other words, if qualified employees who have both taskwork and teamwork characteristics are selected in the first place, team composition should provide successful outcomes.

6. DISCUSSION

6.1 Summary

Organizations are increasingly changing to team-based structures and teams are becoming the primary unit of production. Therefore, it is important to develop valid selection approaches to employ individuals who are both competent and effective team members. This paper reviewed four selection approaches—traditional selection approach, team-based KSAOs approach, the team-level selection approach, and team composition selection approach. An overview, strengths and weaknesses, selection procedures, and effectiveness of each approach was also presented.

The alignment of predictor—criteria (team performance) for these approaches varied depending on the level of specificity of the predictors. The first two approaches (traditional selection approach and team-based KSAOs approach) examined individual-level predictors with team-level outcomes, a situation where the predictor level of analysis is not aligned with that of the criterion. The last two approaches (the team-level selection approach and team composition selection approach) examined team-level predictors with team-level outcomes resulting in an aligned level of analysis. This predictor—criteria alignment affects the overall effectiveness of each approach; the approaches that are better aligned are likely to be more valid. Figure 1 below summarizes the four selection approaches that have been discussed with their level of criteria.

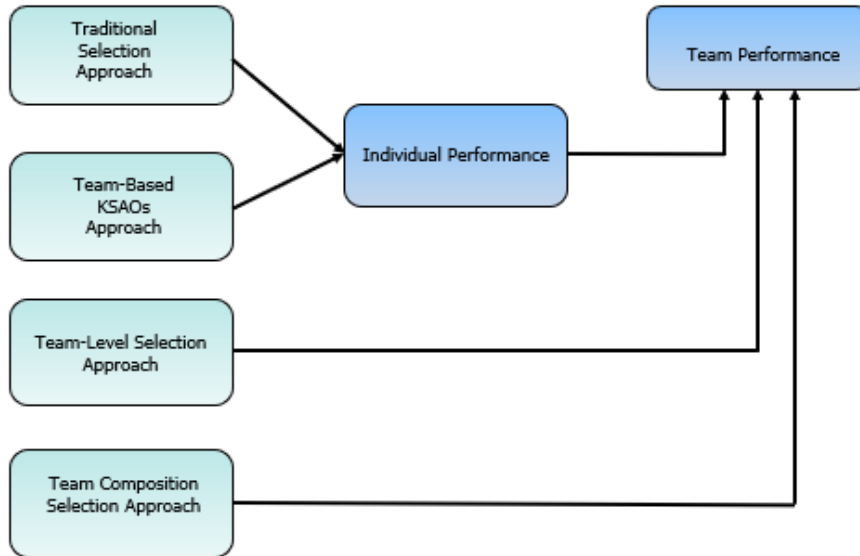


Figure 1. Summary of Selection Approaches adapted from Arthur (2019).

In summary, the importance of teamwork characteristics in selection for team-based organizations is highlighted from this review. Some approaches are considered to be more adequate in terms of practicality and efficiency; succinct commentary on this is provided.

6.2 Best Approaches for Team-Based Organizations?

On the basis of the review of the literature and issues examined, it is concluded that the best approach for team-based organizations is a combination of the team-based KSAOs approach and the team composition selection approach. The rationale for this is that of the four approaches reviewed, the team-based KSAOs approach is the most practical given that it is an already established and widely used approach. Additionally, it focuses on individual-level predictors and criteria therefore, it can be assumed that it will be relatively easy for practitioners to use this approach and incorporate it into their selection systems. Emphasizing the importance of teamwork when assessing potential employees is crucial given that it is expected that individuals will be a part of a team at some point in their job. Although taskwork skills are the basis for the operational side of performance, teamwork skills are necessary to achieve successful

synchronization, integration, and social interactions that must occur to achieve the team goal (Salas, Burke, & Cannon-Bowers, 2002). Once selection of employees who possess adequate taskwork and teamwork skills is accomplished, successful team composition can be expected to be more easily achieved.

Using the team-based KSAOs approach for initial selection will ensure that the organization is comprised of individuals with already established teamwork skills. Once the organization finds it necessary to form teams to complete projects or goals, they should implement the team composition selection approach. By so doing, team members' characteristics such as personality, taskwork knowledge, or diversity subsequently are taken into account and should predict increased team performance. Because research and practice both suggest that the best teams are well designed up front (Donsback et al., 2009), the emphasis on team composition is crucial.

In contrast, the traditional selection approach is not adequate for team-based organizations. Its focus on individuals' taskwork characteristics will not be a valid way of predicting employee's performance and success as a team member. Additionally, selecting team members solely on the basis of taskwork KSAOs does not ensure optimal team performance (Kilmoski & Jones, 1995). In a similar vein, the team-level selection approach could potentially be a sound addition to selection systems in team-based organizations but at the moment there are no empirical studies to support its effectiveness.

6.3 Implications for Practice

With the extensive literature on different selection approaches, practitioners have resources that point to specific predictors of team success and can use these to develop their own selection systems. For instance, given that agreeableness and conscientiousness are strong

predictors of team success, practitioners could measure applicants' levels of agreeableness and conscientiousness with the team-based KSAOs approach and select applicants with higher levels. Similarly, when composing a team of employees, practitioners should select employees with higher levels of agreeableness and conscientiousness. In general, practitioners should always consider team-based KSAOs when selecting applicants, and team member characteristics when composing teams for team-based organizations to ensure optimal team performance.

6.4 Limitations and Future Directions

A limitation worth noting in this paper is that while three of the selection approaches reviewed were derived from existing literature, there was an absence of any studies examining the team-level selection approach. It is suggested that future research should attempt to study this approach as a potential selection approach in team-based organizations. Additionally, given the complexity of composing teams, future research should focus on establishing sound team composition tools or systems.

7. CONCLUSION

Team-based organizations are becoming increasingly prevalent in today's industries. The present paper drew from existing literature to establish the importance of sound selection approaches for successful team performance in team-based organizations. Four different selection approaches were examined and their strengths and weaknesses, selection procedures, and effectiveness were discussed. The team-based KSAOs approach was found to be practical and feasible, but the predictors and criteria are misaligned in terms of their levels. The team composition selection approach was found to be less practical but had adequate predictor—criteria alignment. It is concluded that a combination of the team-based KSAOs approach and the team composition selection approach are the best approaches for team-based organizations because they complement each other. It is hoped that this paper provides some guidance and insights into managerial and human resources practices as they pertain to team selection, as well as stimulates future research on selection approaches for team-based organizations.

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