

THE NEXT LITTLE AFFAIR IN TEAM INNOVATION RESEARCH

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Abstract:

Literature suggests that team innovation is a function of team design, team interaction processes and emergent states. Team reflexivity and innovation climate are two variables identified to describe the interaction processes and emergent states respectively. Within that domain, this article overviews the relevant theories and identifies to which extent recent empirical studies have been conducted to demonstrate those theories. Based on that, some relevant interesting issues to be considered in a future research are specified, and recommendations are offered.

Field of Research: Organizational behaviour

1.0 INTRODUCTION

Nowadays, modern organizations do not only produce products and services. They must improve their products and services from time to time to keep their customers' loyalty and market value. Thus, innovation in an organization has been one of core activities for competitiveness. Consequently, much attention has been given by researchers, to the identification of innovation antecedents at an organizational level (Hulsheger, Anderson and Salgado, 2009). As more and more organizations are turning to team-based approaches to develop innovation, the attention given on identifying antecedents merely at organizational level was argued to have undermined the important roles of individuals and teams who actually generate, propose and put innovation idea into implementation at a departmental or organizational level (Hulsheger et al., 2009).

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Team is an important asset in creating organizational innovation, as many findings suggest that team is the center and foundation of organizational innovation (Taggar, 2002). Team consists of people who put efforts to initiate innovation: they investigate problems, identify, plan and execute the solutions, which then the results are finally visible at a departmental or an organizational level. As a result, substantial findings on team innovation antecedent factors have been identified.

While the findings on team innovation antecedent factors are still on the move, related theoretical literatures have decently advanced. Theories have emphasized that team innovation does not result linearly from the antecedent factors (Bain, Mann and Pirola-Merlo, 2001). Rather, the influences of team antecedents factors on team innovation happen through team interaction processes and emergent states (Marks, Mathieu and Zaccaro, 2001), which respectively could be described with team reflexivity and team innovation climate variables. Thus, researchers are recently advocated to reflect those theories in their investigations on how antecedent factors impact team innovation.

Nevertheless, there are still unknown about how much relevant current studies have been empirically conducted to demonstrate the above mentioned theories? An answer for this question could enlighten a direction for future research in this area. For that purpose, this article begins with a review of literature concerning to the theories underpinning. Then, the recent studies that stream along within the theories were identified and viewed. Additionally, several practical issues which are worthwhile to be considered in future investigations were highlighted. The relevant studies included in this article are from the period of 1996 to 2010. The keywords used in browsing the relevant studies are “team innovation, team processes, team reflexivity and team innovation climate”.

2.0 LITERATURE REVIEW

Innovation is an initiation or discovery of an idea, technology, or process that is new to the organizational setting which is followed by the implementation (Amabile, 1988; Dougherty and Hardy, 1996; Kanter, 1988; Klein and Sorra, 1996). As long as the idea is new to the department (Zaltman, Duncan and Holbek, 1973) or adopted from outside the unit and organization (Kanter, 1988; van de Ven, 1986), both are considered as innovation. The scope of innovations also cover the development and implementation of simple ideas that are related to improvements in daily work processes and work designs (Axtell, Holman, Unsworth, Wall, Waterson and Harrington, 2000). Generally, there are two key elements of innovation: (a) creativity or the generation of a new idea, and (b) implementation or the actual introduction of the change (Amabile, 1988; Woodman, Sawyer and Griffin, 1993; Wolfe, 1994; Unsworth and West, 1998; Unsworth, 1999; West and L Farr, 1990). While creativity is a subcomponent of innovation which only refers to an idea generation, innovation refers to both elements. However, the terms creativity and innovation are often used interchangeably in research (West and Farr, 1990).

In view of the fact that teams are important players in the organizational innovation process, organizational psychologists have shifted their research focus from the organization to team level (Anderson, de Dreu and Nijstad, 2004). Furthermore, an understanding about how a team that develops innovation actually operates will provide a better explanation of innovation within an organization (Caldwell and O'Reilly, 2003). The shift in focus has resulted in substantial findings of team-level innovation antecedents. From the various studies, team composition, task structure and organizational context are the most common antecedents that have been postulated to influence team innovation (Hulsheger et al., 2009; Stewart, 2006; Cohen and Bailey, 1997) and team effectiveness (Gladstein, 1984; Hackman, 1987; Tannenbaum, Beard and Salas, 1992; West, Borrill and Unsworth, 1998). Those factors have been termed as a *team design* by Cohen and Bailey (1997) who describe it as the team property which directly can be manipulated to influence team outcomes.

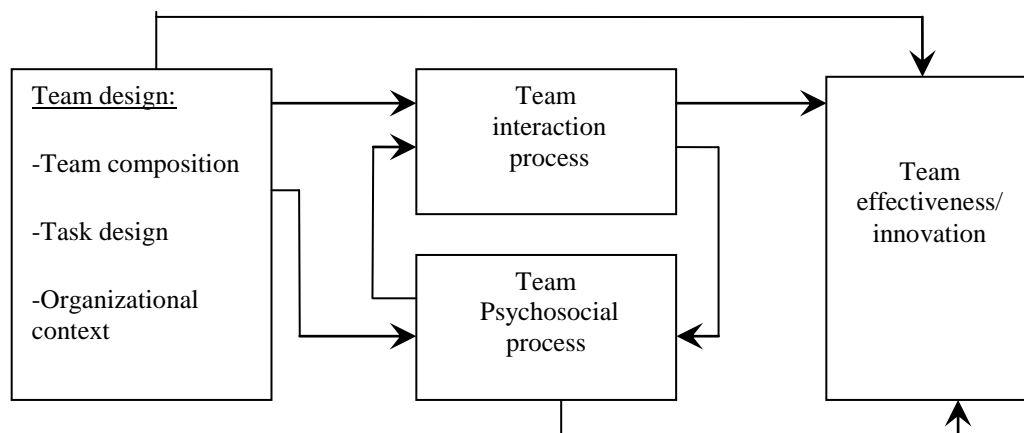
Despite of various studies on team design as predicting variables to team innovation, Antoni and Hertel (2009) have highlighted that researchers should not be too preoccupied at detecting direct antecedent factors of team innovation. Instead, they advocate researchers to demonstrate how and why those factors have the effects on team innovation. Indeed, it is important to understand how those factors may have indirect relationship on team innovation through team process, because in reality team innovation does not result linearly from the antecedent factors (Bain et al., 2001). Rather, the influences of team antecedents on team innovation also happen through team processes and emergent states. Marks, Mathieu and Zaccaro (2001:357) define team process as "members' interdependent acts that convert team inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing task work to achieve collective goals". They further explain that in an input-process-outcome (I-P-O) framework, team process is viewed as a mediating mechanism that linking team composition with team outcomes. Team process describes team's interaction process which is necessary for team innovation (West, 2002; Marks et al., 2001; Nijstad and de Dreu, 2002). Whereas, emergent states has been defined by Marks, Mathieu & Zaccaro (2001:357) as a "construct that characterize *properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes*". This definition gives more accurate terminology, which was previously termed as psychosocial trait by Cohen & Bailey (1997). Emergent states concern about the condition of teams which is likely to change according to the team's context. Both of team process and emergent states are vulnerable to team input (Marks et al., 2001).

The above concept has been conceptually demonstrated in the main part of the heuristic framework of team effectiveness by Cohen & Bailey (1997) as summarized

in

below: It depicts that team design not only has direct impact on team effectiveness, but also indirect impact via team interactions and psychosocial process. In the same time, team psychosocial process may influence team effectiveness directly and indirectly via team interaction process. This concept has been supported and proposed by many scholars to be applied in team innovation research (Nijstad & de Dreu (2002), West et al (2004), and Antoni & Hertel (2009). Moreover, the theories of team effectiveness are applicable in the team innovation research, as Cohen & Bailey (1997) highlighted that team innovation is one of the team effectiveness dimensions.

Figure 1: The main part of heuristic model of team effectiveness (adapted from Cohen and Bailey, 1997).



In team innovation, team reflexivity has been suggested by West, Hirst, Richter et al. (2004) as a factor to represent team interaction process. Reflexivity describes “*the extent to which group members overtly reflect upon, and communicate about the group’s objectives, strategies (e.g., decision-making) and processes (e.g., communication), and adapt them to current or anticipated circumstances*” (West, 2000:3). Team reflexivity is a team process, which describes team members’ interaction that is required to accomplish goal. Reflexivity refers to the extent to which teams discuss task-related issues as well as their team effectiveness. Team reflexivity has been regarded as a key process in team innovation, because reflexive team has high self-reflection and self-awareness that help the team to find better solutions to problems they are facing. As a process variable, it is expected to mediate the relationship between diversity and team outcomes (Schippers, Deanne, Paul and Janique, 2003; Williams and O’Reilly, 1998). A field study among 59 work teams by Schippers (2003) evidenced that team reflexivity mediates the relationship between diversity and team performance, commitment, and satisfaction.

Whereas, *team climate for innovation* is a psychosocial factor that explains the conditions related to innovation in team (West, 1990). The concept of team climate for innovation has generally been defined as shared perceptions at a team level of the extent to which the condition in the team support and facilitate innovation

(Anderson and West, 1994). West (1990) proposed a four-factor model of innovation climate at team level: vision, participation safety, climate for excellence and support for innovation. *Vision* climate is an “idea of a valued outcome which represents a higher order goal and a motivating force at work” (West, 1990:310). Teams with clear objectives have more likelihood to develop new goal-appropriate methods of working because their efforts have focus and direction. *Participation safety* is the climate which is characterized by a safe and comfortable feeling to participate, hence relates to active involvement in-group interactions due to non-threatening trust and support (West, 1990). *Climate for excellence* is a “shared concern with excellence of quality of task performance in relation to shared vision or outcomes which is evidenced by evaluations, modifications, control systems and critical appraisals” (West, 1990:313). *Support for innovation* is “the expectation, approval and practical support of attempts to introduce new and improved ways of doing things in the work environment” (West, 1990:38).

With the above concepts in thought, relevant studies which have been empirically conducted so far were identified and highlighted in the next session with the corresponding issues.

3.0 RELEVANT STUDIES AND ISSUES

From the various empirical studies, there are two issues could be highlighted. *Firstly*, existing researches that demonstrate the mediating influence of team reflexivity to team design effect on team innovation are rare. In many studies, team reflexivity has been frequently tested as an antecedent to team innovation (Campion, Papper and Medsker, 1996): it is not always been tested as team process that mediates team design impact on team innovation. For example, West & Anderson (1996) acknowledge that team composition influence team innovation through team reflexivity, but only conducted analyses to conclude that team composition and reflexivity are respectively related to team innovation. There was no delineation and analyses of how and to which extent team composition may influence team reflexivity to result team innovation. Likewise, Hoegl & Parboteeah (2006) only conclude that team reflexivity is positively related to team innovativeness. A recent research by Dayan & Basarir (2010) also concluded that team reflexivity is related to the team outcomes: as well as to the team’s contextual variables. Whereas, Tjosvold et al. (2004) perform a complete test of mediating effect of team reflexivity, but only limited to only a small fraction of team design i.e. goal interdependence (under task design component) to result team innovation.

Secondly, with regard to the team innovation climate as a psychosocial process, researches have extensively demonstrated its relation to team innovation (West, 1990; West and Anderson, 1996; Bain et al., 2001; Anderson and West, 1998; Mathisen, Einarsen, Jorstad and Bronnick, 2004). However, the current researches still do not adequately apply the concept depicted in the above heuristic model (Figure 1), which suggests that team’s psychosocial process (team innovation climate) is not impervious to the team design, which in turn may influence team’s interaction process (team reflexivity). Currell et al. (2001) for example, only analyze

how the task characteristics (one of the team design components) are associated to team innovation climate to result team innovation. Antoni (2005) found that team innovation climate mediates the task design effects on team innovation: he however did not consider the effects of innovation climate could have on team's interaction process in influencing team innovation. In a similar vein, West & Anderson (1996) recognize in their model that team innovation climate and team reflexivity are the team process between team design and team innovation. Nevertheless, they only conclude that team innovation climate and team reflexivity are related to team innovation: there is no effect analysis of how team design may relate to team innovation climate, which in turn influences team reflexivity to result team innovation. Researches that consider such effect analysis are very limited to a small component of team design and team innovation climate. For example, Schippers et al. (2008) demonstrate the influence of team design on team reflexivity through team innovation climate. However, they only test it on a small fraction of team design and team innovation climate i.e. the team leadership for the former and team shared vision climate for the latter. Therefore, there is still a need to demonstrate and delineate how the team design may influence team innovation in the presence of team reflexivity and team innovation climate. Indeed, Antoni and Hertel (2009) and Hulsheger et al (2009) have highlighted that this area of studies are still at an infant stage and not been fully addressed and tested even in leading studies.

A journey in searching the above issues brought up the third and fourth issues which are interesting to be highlighted. These issues have nothing to do with the above theoretical framework, but need to be addressed as it could contribute to the practicality of the future research in this domain.

The third issue is concerning to the type of a team as a research context. When discussing about team effectiveness or innovation in organization, 'work team' is the team type that most people have in mind; hence it is not surprising, many previous studies focussed more on work team in discussing the factors/design for team effectiveness and innovation. There has not been much research done in the context of parallel team – for a review, see Cohen and Bailey (1997), Stewart (2006), Mathieu et al. (2008). Parallel team is one of the team types in the organization, which consist of people from the same or different unit who gather together to make improvements or solve problems in unit or organization (Cohen and Bailey, 1997). Examples of parallel team are problem solving team and quality circles.

Fourthly, while adoption of parallel team as a management strategy is common, the extent to which parallel team is beneficial to the organizational performance has not yet empirically quantified. Literature has long suggested that organizational performance is directly tied to the function and outcomes of the parallel teams (e.g. Glassop, 2002). In authentic literature for example, Barrick and Alexander (1987) and Steel and Shane (1986) suggest that activities in quality circles could modify the work processes, thus influencing productivity and organizational performance. Hanna, Newman and Johnson (2000) have proposed that quality circle has high impact on operational performance. Delarue et al (2008) have made a clear conception that team impacts organization through a 'performance chain': team

impacts organizational performance through operational performance. Moreover the relationship between operational and organizational performance has been long theorized by several authors (Skinner, 1974; Hayes and Wheelwright, 1984; Porter, 1980). Despite of these suggestion that outcomes at parallel team level have their own capacity for operational and organizational performances, the current researches that investigate the relationship between team outcome, operational and organizational performance are only limited to top management team (TMT) type. This is due to a direct alignment that existed between the function of TMT and organizational outcomes (Mathieu et al., 2008); thus, this link is still under-researched (Delarue et al., 2008).

4.0 CONCLUSIONS AND RECOMMENDATIONS

This article highlights the issues related to the indirect influences of team design on team innovation via team reflexivity and team innovation climate, which still offer opportunities for further exploration. Even though there have been many guides and theories available, the number of empirical researches conducted to demonstrate these theories are still insufficient. Thus, more researchers are recommended to investigate how and to which extent team design influences team innovation through team reflexivity and team innovation climate.

Given that a parallel team is adequately important as other team types in an organization, more studies are recommended to utilize it as a research context. In relation to that, even though a parallel team is not a new phenomenon adopted in organizational management strategy to improve operational and organizational performances, research that examines a relationship between an outcome of a parallel team and the operational-organizational performance does not exist; therefore, it is worth to be quantitatively examined.

An exploration on the above issues specific to a parallel team context will provide a clear demonstration about the impact of team design on team innovation; thus provide useful guides to the parallel team practitioners in increasing their team efficiency towards team innovation.

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