Article **Journal-Microeconomics**
June 2022, Vol.6 No.10 1-7

Innovation factors for workteam level empiric studies

Factores de innovación para estudios empíricos al nivel de equipos de trabajo

PÉREZ-JIMÉNEZ, Carlos†* & ALONSO-CALPEÑO, Mariela Juana

Universidad Popular Autónoma del Estado de Puebla, Mexico.
Instituto Tecnológico Superior de Atlixco, Mexico.

ID 1st Author: *Carlos, Pérez-Jiménez* / **ORC ID**: 0000-0002-8584-9569, **CVU CONACYT ID**: 87058

ID 1st Co-author: *Mariela Juana, Alonso-Calpeño* / **ORC ID:** 0000-0001-7276-1923, **CVU CONACYT ID:** 586822

DOI: 10.35429/JM.2022.10.6.1.7 Received January 10, 2022; Accepted June 30, 2022

Abstract

The aim of this research is to explore in the applicable theoretical perspectives, which innovation factors can be empirically studied in work teams. For that purpose, an integrative review of the literature was carried out using the methodology of search and evaluation for inclusion. A coherent classification, based on theory, was obtained for the innovation factors in work teams that could guide subsequent studies in real life to contribute to the lack of this type of studies reported in the literature.

Innovation factors, Work teams, Empirical studies

Resumen

Esta investigación tiene como objetivo rastrear en las teorías más relevantes sobre el tema de los factores de innovación al nivel de equipos de trabajo que pueden ser estudiados empíricamente, para ello se llevó a cabo una revisión integrativa de literatura usando la metodología de búsqueda y evaluación para inclusión. Como resultado, se construyó una clasificación coherente, fundada en la teoría, de los factores de Innovación que operan al nivel de equipos de trabajo para facilitar estudios en la vida real, que contribuyan a la falta de datos este tipo que ha sido reportada en la literatura.

Factores de innovación, Equipos de trabajo, Estudios empíricos

Citation: PÉREZ-JIMÉNEZ, Carlos & ALONSO-CALPEÑO, Mariela Juana. Innovation factors for workteam level empiric studies. Journal-Microeconomics. 2022. 6-10:1-7.

* Author's correspondence (E-mail: carlos.perez01@upaep.edu.mx)
† Researcher contributing first author.

Introduction

Over the past few decades organizations around the world have reorganized work into teams; the nature of their work and the factors that influence it became a central focus of research (Kozlowski, 2018). While significant research has been conducted on the factors involved in work teams (Bond-Barnard, Fletcher, & Steyn, 2018), factors related to innovation, the failure of which may be the cause of a percentage of failures, total or partial of such teams, have not been reported in these studies (Oeij, 2017).

Innovation is fundamental to the successful performance and survival of any organization and, its effect on the achievement of work teams is a topic open to research (Anderson, Potočnik, & Zhou, 2014). But contemporary studies do not identify which of these contribute to team outcomes (Johnsson, 2017). Also, qualitative research is needed to identify which innovation factors influence team performance (Anderson, Potocnik, Bledow, Hülsheger, & Rosing, 2015).

From the gaps found in the literature, the research question arises: what factors related to innovation can be empirically studied at the level of work teams? From where, the objective of this research is to inquire in the applicable theoretical perspectives, which factors of innovation can be studied empirically at the level of work teams. The contribution of this study is to know which factors of innovation at the level of work teams can be studied empirically, according to the most relevant authors and theories on the subject, and that can guide further studies in real life to contribute to the gaps found in the literature.

This article presents, first, the methodology used to establish a new framework of innovation factors that can be observable in work teams through empirical studies to contribute to the gaps found in the literature, then, in the results section, the following are presented: a definition of the concept of work teams in organizations, the theoretical model chosen for the study of work teams, a definition of the concept of innovation that is applicable to work teams, which are the innovation factors chosen for their study at the work team level and the theoretical model proposed for their observation in the field. Finally, the conclusions and future work of this research are presented.

Methodology

To meet the objective of this work, an integrative literature review (Torraco, 2005) was conducted among different authors who have historically made contributions to the theoretical body of the subject, to establish a new framework through the conceptualization and expansion of theoretical foundations (Snyder, 2019).

The literature review was conducted using the search and evaluation for inclusion methodology (Xiao and Watson, 2019) as shown in Figure 1, by searching open sources for theories, perspectives and frameworks related to innovation, whose factors are applicable to the level of work teams in organizational studies.

From the literature review, based on Korstjens and Moser (2018), the components for the proposed observation framework were derived:

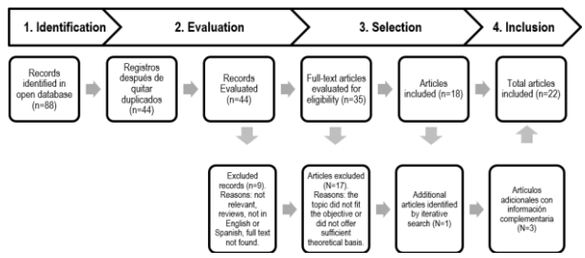

Figure 1 Literature review process
Source: Based on Xiao and Watson (2019)

- A definition of work teams in organizations.
- A theoretical model for the study of work teams.
- A definition of innovation that is applicable to the level of work teams based on four theoretical perspectives that have been very influential in the subject.
- A set of innovation factors applicable to the work team level based on three widely accepted theories in the literature.
- A coherent, theory-based classification for the selected innovation factors that can be observed in the field.

ISSN-On line: 2531-2987

Results and discussion

The results of this research are presented below:

Definition of work teams in organizations

Work teams have been conceptualized from a variety of theoretical perspectives, such as psychological, human resources, socio-technical, technological, task-oriented, integrative and others (Sycara and Sukthankar, 2006), for this work, we found the following definitions in the organizational context:

- Work teams are defined as dynamic entities of two or more interdependent individuals working together towards common and relevant goals; they share the same state of mind, interact socially, exhibit task interdependence and, are immersed in an organizational context that establishes boundaries, and influences exchanges with other units in the larger entity (Kozlowski and Bell, 2003).

- These entities develop over time. During their evolution, their internal processes, emergent states, and characteristics such as knowledge transfer and cohesion are in permanent change (Peralta, Lourenço, Lopes, Baptista, & País, 2018).

These two definitions are complementary and we consider the sum of both as an adequate definition for purposes of the study of innovation factors in work teams.

Theoretical model for the study of work teams

For the study of the factors involved in the dynamics of work teams in organizations, Meyer (2017) recommends the use of the IPO model (From the acronym of Inputs - Processes - Outputs), this will allow identifying at what stage of the dynamics of a work team the innovation factors that are intended to be studied intervene, as shown in Figure 2.

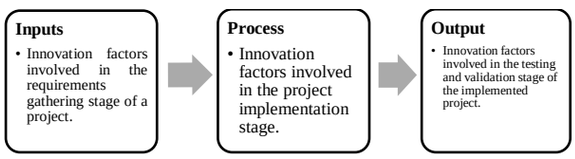

Figure 2 IPO model applied to the study of innovation factors in work teams
Source: Based on Meyer (2017)

Definition of the innovation concept, applicable to work teams

The definition of innovation involves the tangible results of creative ideas; such as artifacts, services, procedures or processes and requires an approach from various disciplines (Baregheh, Rowley and Sambrook, 2009). To this end, four perspectives of innovation that are relevant for the purposes of this paper were analyzed.

a) Schumpeterian perspective: Schumpeter (1942) conceptualized five manifestations of innovation:

   1 The introduction of a new good.

   2 The introduction of a new production method.

   3 The opening of a new market.

   4 The conquest of a new source of supply of raw materials or partially manufactured goods.

   5 The creation of a new organization of any industry.

b) Multidisciplinary perspective: this perspective (Baregheh, Rowley, and Sambrook, 2009) conceptualizes innovation as a multi-stage process through which ideas are transformed into new, improved or different products, services or processes, in order to advance, compete and differentiate successfully in the market.

c) Multidimensional perspective. This perspective builds an abstract model (Kogabayev and Maziliauskas, 2017), in which innovation is systemic and cross-functional. It creates qualitative leaps within a system and, as shown in Figure 2, is conceptualized in three dimensions: 1) product-process dimension, 2) administrative-technological dimension and, 3) radical-incremental dimension. Innovation is located in a three-dimensional space according to its focus, and involves major changes within an organization, which implies the idea of executing various tasks to achieve innovation.

ISSN-On line: 2531-2987

d) Innovation measurement perspective. From the perspective of measuring innovation in the business enterprise sector, innovation is conceptualized in the business, product, and process domains (OECD, 2018):

1) A new or improved product or process or a combination thereof.

2) Differs significantly from the unit's previous products or processes.

3) Has been made available to potential users (product) or put into use by the unit (process).

Table 1 compares the four perspectives on innovation discussed above in terms of the dimensions covered by their key concepts.

In making a comparison, the dimensions novelty, product generation (artifacts, services, procedures or processes), management approach and need for implementation are considered by all the selected perspectives. Of these four dimensions, the last three involve the concept of implementing the ideas initially generated by the creativity process discussed in the previous section. This implementation process is a requirement for achieving the innovation objectives (Belasen and Luber, 2017).

Perspective	Novelty	Differentiation	Generate products	Focus on management	Technological approach	Market focus	Need for execution
Schumpeterian	√		√	√		√	√
Multidisciplinary	√	√	√	√	√	√	√
Multidimensional	√		√	√			√
Measurement	√	√	√	√		√	√

Table 1 Comparison of the most representative perspectives of innovation in the organizational context
Source: Own elaboration

Innovation factors in organizations

Thus, we are in a position to propose a definition of innovation suitable for the purposes of this paper:

> "Innovation is the process of implementing creative ideas that puts into use new or improved artifacts, services, procedures, practices or processes, for the organization or group in question."

This definition will be the basis on which the factors of innovation will be studied in the present work.

In terms of the elements of the definitions, three categories were identified:

- First, eight of the nine definitions include idea generation in their definition of innovation, making "Ideas" the first component.

- Second, five of the nine authors included the "output" of the innovation in their definition, identifying it as a "product, service, or result," this being the second element of the definitions.

- Third, eight of the nine definitions included a dynamic element of innovation, which they identify as "a process, practice or action", making this the third element in the authors' definition.

For the purposes of this research, Table 2 considers three theories that have been consistently used in various studies reported in the literature on creativity and innovation. All of them are used in this work to identify the factors of innovation at the level of work teams.

As can be seen, each theory proposes factors that, for the most part, are different from those proposed by others. In order to classify and integrate them in the context of this study at the level of work teams, we will group them as shown in Table 3 under one of the three domains proposed by Mathieu, Hollenbeck, van Knippenberg and Ilgen (2017), which are: 1) structural components, 2) compositional characteristics and 3) mediation mechanisms, elements used to classify the constructs studied at the level of work teams.

Theory	Conceptualization	Factors	Authors
Componential Theory	Creative ideas are implemented through motivation, skills, and resources available in the task field.	- Intrinsic motivation. - Extrinsic motivation. - Task mastery skills. - Creative processes. - Organizational motivation. - Resources in the task domain. - Innovation management skills.	Amabile, (1988); Amabile and Pratt, (2016)
Interactionist Theory	Individual, group, and organizational characteristics have an impact on the creative process and situation, resulting in a creative product for the organization (innovation).	- Group norms. - Cohesión. - Size. - Diversity. - Roles. - Tasks. - Problem solving approaches. - Resourcefulness. - Rewards. - Strategy. - Structure.	Woodman, Sawyer and Griffin, (1993)
Four Factors Team Climate Theory	Innovations produced by a work team are generally the result of diverse activities characterized by four factors.	- Vision. - Task oriented. - Participatory safety. - Innovation support.	West y Farr (1990): Anderson and West (1998)

Table 2 Comparison of innovation factors among the most representative theories applicable to work teams
Source: Own elaboration based on the cited authors

ISSN-On line: 2531-2987

It is important to note that, only on a couple of occasions, the factors are repeated in two groups: the factor "roles", which is considered both a structural component and a characteristic of team composition, and the factor "participatory safety", which is considered both a structural component and a mediation mechanism.

This classification does not prevent us from proposing this grouping to observe the factors of the three theories at the level of work teams as shown in Table 4. Up to this point, we have proposed definitions for innovation at the level of work teams based on the analysis of the relevant theories on the subject. We have also determined the sets of innovation factors that will be observed in the field to find the answer to the research question.

Theory	Factors	Structural components	Compositional characteristics	Mediation mechanisms
Componential Theory	Intrinsic motivation.			√
	Extrinsic motivation.			√
	Task mastery skills.		√	
	Creative processes.			√
	Organizational motivation.			√
	Resources in the task domain.	√		
	Innovation management skills.			√
Interactionist Theory	Group norms.		√	
	Cohesion.			√
	Size.		√	
	Diversity.		√	
	Roles.	√	√	
	Tasks.	√		
	Problem solving approaches.			√
	Resources.		√	
	Rewards.			√
	Strategy.			√
	Structure.	√		
4-Factor Team Climate Theory	Vision.		√	
	Task orientation.			√
	Participatory safety.	√		√
	Innovation support.		√	

Table 3 Grouping of innovation factors for study at the work team level
Source: Own elaboration

Dimension	Factor	Type of influence on the team
Structural components	Resources in the task domain	
	Tasks	
	Structure	
	Roles	
Compositional characteristics	Skills in the task domain	
	Diversity	
	Group norms	
	Size	
	Resources	
	Vision	
	Support for innovation	
Mediation Mechanisms	Intrinsic motivation	
	Extrinsic motivation	
	Organizational motivation	
	Innovation management skills	
	Creative processes	
	Cohesion	
	Problem solving approaches	
	Strategy	
	Rewards	
	Task orientation	
	Participatory safety	

Table 4 Proposed classification of innovation factors for field observation
Source: Own elaboration based on the three domains proposed by Mathieu, Hollenbeck, van Knippenberg and Ilgen (2017)

Theoretical model for field observation

With the previous classification of factors, it will now be possible to locate in the IPO model the factors that will be observed in the field as shown in Figure 3, and to determine the type of influence they have on the dynamics of a work team, which can be, basically, favoring or hindering.

Conclusions

The use of the integrative literature review technique (Torraco, 2005) among different authors who have historically made contributions to the theoretical body on innovation and work teams, allowed us to establish, through the conceptualization and expansion of theoretical foundations (Snyder, 2019), a model for the observation of innovation factors and their influence on the dynamics of work teams as a tool for empirical studies on the subject.

This tool will allow performing the studies that Anderson, Potocnik, Bledow, Hülsheger and Rosing (2015), mention that are required to identify the innovation factors that influence the performance of work teams, as well as to identify which of these contribute to the team's results as mentioned by Johnsson (2017).

Through the review conducted, it was possible to identify definition of work teams in organizations based on what was postulated by Kozlowski and Bell (2003), as well as by Peralta, Lourenço, Lopes, Baptista and País (2018). And it also allowed choosing the IPO theoretical model for the study of work teams recommended by Meyer (2017).

Another contribution of the review technique used was the synthesis of a definition of the concept of innovation applicable to the level of work teams from four relevant theoretical perspectives on the subject, as well as the identification of a group of innovation factors applicable to the level of work teams from three important theories analyzed. All this led us to a coherent classification, based on theory, for the field study of the innovation factors selected within the framework of the IPO model for study in work teams.

ISSN-On line: 2531-2987

Subsequent work

The next stage of the research is the use of the observation model in real life, to determine the influence that innovation factors have on the dynamics and performance of work teams in an organization, as they seek to achieve their objectives, in order to contribute to the gaps found in the literature.

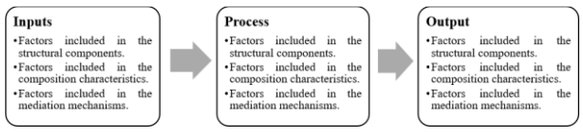

Figure 3 Theoretical model to observe in the field innovation factors in work teams
Source: Own elaboration based on the IPO model recommended by Meyer (2017)

References

Amabile, T. M. (1988). A model of creativity and innovation in organizations. Research in organizational behavior, 10(1), 123-167.Amabile y Pratt, 2016 https://web.mit.edu/curhan/www/docs/Articles/15341_Readings/Group_Performance/Amabile_A_Model_of_CreativityOrg.Beh_v10_pp123-167.pdf

Amabile, T. M., y Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. Research in Organizational Behavior, 36, 157-183. https://doi.org/10.1016/j.riob.2016.10.001

Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. Journal of management, 40(5), 1297-1333. https://doi.org/10.1177/0149206314527128

Anderson, N.; Potocnik, K.; Bledow, R. J.; Hülsheger, U.; y Rosing, K. (2015). Innovation and creativity in organizations. Handbook of Industrial Work and Organizational Psychology (Second Edition). Research Collection Lee Kong Chian School of Business. http://digital.casalini.it/9781473942851

Baregheh, A., Rowley, J., y Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. Management decision, 47(8), 1323-1339. https://doi.org/10.1108/00251740910984578

Belasen, A., y Luber, E. B. (2017). Innovation implementation: Leading from the middle out. In Strategy and communication for innovation (pp. 229-243). Springer, Cham. https://doi.org/10.1007/978-3-319-49542-2_14

Bond-Barnard, T. J., Fletcher, L., & Steyn, H. (2018). Linking trust and collaboration in project teams to project management success. International Journal of Managing Projects in Business. https://doi.org/10.1108/IJMPB-06-2017-0068

Johnsson, M. (2017). Innovation Enablers for Innovation Teams-A Review. Journal of Innovation Management, 5(3), 75-121. https://www.diva-portal.org/smash/get/diva2:1170239/FULLTEXT01.pdf

Kogabayev, T., y Maziliauskas, A. (2017). The definition and classification of innovation. HOLISTICA–Journal of Business and Public Administration, 8(1), 59-72. https://holisticajournal.ro/docs/fa9a14d8ffa303a5334f3c55cc4454ce.pdf

Korstjens, I., y Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. European Journal of General Practice, 24(1), 120-124. https://doi.org/10.1080/13814788.2017.1375092

Kozlowski, S. W. J., & Bell, B. S. (2003). Work groups and teams in organizations. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), Handbook of psychology: Industrial and organizational psychology, Vol. 12, pp. 333–375). John Wiley & Sons Inc. https://www.booksfree.org/wp-content/uploads/2022/04/Handbook-of-Psychology-Volume-12-by-Irving-B-Weiner-booksfree.org_.pdf#page=432

Kozlowski, S. W. J., & Chao, G. T. (2018). Unpacking team process dynamics and emergent phenomena: Challenges, conceptual advances, and innovative methods. American Psychologist, 73(4), 576–592. https://doi.org/10.1037/amp0000245

Mathieu, J. E., Hollenbeck, J. R., van Knippenberg, D., e Ilgen, D. R. (2017). A century of work teams in the Journal of Applied Psychology. Journal of applied psychology, 102(3), 452. https://doi.org/10.1037/apl0000128

Meyer, B. (2017). Team diversity. The Wiley Blackwell handbook of the psychology of teamwork and collaborative processes, 151-175. https://doi.org/10.1002/9781118909997.ch7

OECD (Organization for Economic Cooperation and Development)/Eurostat (2018). Guidelines for Collecting and Interpreting Innovation Data — The Oslo Manual, 4th edn. Paris: OECD. https://www.oecd.org/sti/inno/oslo-manual-2018-info.pdf

Oeij, P. R. A. (2017). Resilient behaviour in innovation teams for better project results. In Competitive edge: successful products in the age of disruption, 17th Pdma annual conference 11-15 November, Chicago http://resolver.tudelft.nl/uuid:36577149-b914-46dc-bff2-5198e965f9b6

Peralta, C. F., Lourenço, P. R., Lopes, P. N., Baptista, C., y Pais, L. (2018). Team development: Definition, measurement and relationships with team effectiveness. Human Performance, 31(2), 97-124. https://doi.org/10.1080/08959285.2018.1455685

Schumpeter, J. (1942). Creative destruction. Capitalism, socialism and democracy, 825, 82-85. https://scholar.google.com/scholar_lookup?title=Creative%20destruction&publication_year=1942&author=J.%20Schumpeter

Sycara, K., y Sukthankar, G. (2006). Literature review of teamwork models. Robotics Institute, Carnegie Mellon University, 31, 31 https://www.cs.cmu.edu/~gitars/Papers/CMU-RI-TR-06-50.pdf

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business Research, 104, 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039

Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. Human Resource Development Review, 4, 356–367. https://doi.org/10.1177%2F1534484305278283

West, M. A., y Farr, J. L. (1990). Innovation at work. En M. A. West y J. L. Farr (Eds.), Innovation and creativity at work: Psychological and organizational strategies (pp. 3–13). Chichester: Wiley. https://doi.org/10.1080/13594329608414834

Woodman, R. W., Sawyer, J. E., y Griffin, R. W. (1993). Toward a theory of organizational creativity. Academy of Management Review, 18, 293-321. https://doi.org/10.5465/amr.1993.3997517

Xiao, Y., y Watson, M. (2019). Guidance on conducting a systematic literature review. Journal of Planning Education and Research, 39(1), 93-1 https://doi.org/10.1177%2F0739456X1772397.

ISSN-On line: 2531-2987