

The Missing link between High Performance Work System and product Innovation: a Systematic Review

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Abstract

Aim: Identifying the missing link in the literature between High-Performance Work System (HPWS) and product innovation, and identifying if there are any mediating or moderating variables that play roles in the relationship between HPWS and product innovation. **Design of Study:** a systematic review of all related articles that link between HPWS and product innovation. **Method:** a systematic literature searching 8 databases produced 50 articles that touch the subject directly or indirectly. Scanning all of them revealed that only 14 articles were directly examined on the subject and have been published during the last 13 years. Therefore, they were included in the current literature review. **Results:** the result revealed that HPWS is positively related with product innovation. In addition, the relationship between HPWS and product innovation is mediated by several factors among which the most important are the innovative work behavior and organizational climate. Moreover, a new conceptual model was developed and will be tested in the next phase of this research project. **Recommendations:** Based on the research results, a set of practical and scientific recommendations were provided. **Originality:** Emerges from developing a new conceptual model that is missing in the literature and customizing it to fit the Gulf Cooperation Countries (GCC). **Future studies:** Other organizational factors such as culture, leadership styles, and job engagement could be added to the proposed framework.. **Keywords:** Systematic literature review, High-Performance Work System, Product Innovation.

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Introduction

Today, survival in highly dramatic, changing, and uncertain environment depends on organizations abilities to respond, adapt, and relief of crisis by deploying new innovative solutions, innovation seems to be the best way to deal with change and succeed to maintain competitive advantage (Lyon & Ferrier, 2002; Jimenez-Jimenez & Sanz-Valle, 2008). Human Resource Management (HRM) has been seen as an antecedent of innovation (Gupta, & Singhal, 1993) and there are extensive literature that investigate HRM practices and innovation relationship (Lau & Ngo, 2004; Li, Zhao, & Liu, 2006; Lin & Sanders, 2017; Sanz-valle & Jime, 2008; Seeck, 2017; Shipton, 2017; Shipton, Sparrow, Budhwar, & Brown, 2017; Shipton et al., 2006; Wikhamn, 2019; Winne & Sels, 2010) and confirmed the positive relationship. While some of these studies mainly focus on the relationship, others tried empirically to find out how HRM affect different types of innovation , such as product innovation (Lau & Ngo, 2004; Wei, Liu, & Herndon, 2011) process innovation (Haneda & Ito, 2018), technology innovation (Li et al., 2006; Shipton et al., 2006), and administrative innovation (Tan & Nasurdin, 2006). Other studies explored HRM with



level of innovation whether incremental innovation (Chang, Gong, & Shum, 2011) or radical innovation (Uschi et al., 2016) is higher. Although previous studies addressed the link between HRM practices and innovation, there is scarcity of research that systematically understand the progress of this research era which limits its development. In fact, there are specific combinations of HR practices that can foster innovation more than others (Shipton, 2017), such as high performance work system (HPWS). Scholars agreed on HPWS being the most important HR system that promote innovation within organization (Arefin & Raquib, 2015; Foley, Ngo, & Loi, 2012; Fu, Flood, Bosak, Morris, & Regan, 2014; Gritti & Leoni, 2011; Rasheed, Shahzad, & Conroy, 2017). Despite the importance of HPWS for developing product innovation to ensure organization's survival and growth (Ardito & Petruzzelli, 2017), none of the previous studies try to study this relationship in a systematic manner. Therefore, this paper will explore how previous literature tackle the issue of HPWS and product innovation to highlight the status quo and identify the current gaps in the literature such as methodological issues, region uncovered, sample issues, relevant mediators and moderators variables in order to suggest future directions for researchers.

Methodology

A systematic review was done by using a research process suggested by Tranfield et al. (2003) which starts with planning the review, conducting the review, and finally reporting the results. First, the search was done through eight academic databases (ProQuest, Elsevier, JSTOR, Wiley, Emerald, ERIC, Science Direct, and Scopus) by using a set of keywords such as "HPWS", or "HRM", or "HR system", and "Innovation", or "product innovation" or "radical innovation", or "incremental innovation". The first search retrieve 50 articles contain the keywords in title. Scanning those articles by reading the abstract and selecting the articles that fit purpose of this review revealed only 14 articles that used HPWS and innovation. Other HR systems were excluded from the review because they are out of the scope of the current review. The 14 articles were reviewed in the next section.

HPWS and Innovation

The paper reviewed did not use a unified definition for HPWS, but according to (Boxall & Macky, 2009; Boxall & Purcell, 2003) there is a bundle of HRM practices designed specifically to enhance the employees' productivity, skills and commitment to be a source of sustainable competitive advantage. As innovation is needed to help organizations deal with highly competition in their marketplace (Duan & Edwards, 2020), HPWS could be crucial anchor for product innovation. Table 1 summarized the most important literature that relates HPWS with innovation. The majority of the studies linked HPWS with the overall organization's innovation, except Gritti and Leoni (2011) who examined the effect of HPWS on both process and product innovation. In contrast, the degree of innovation whether is radical or incremental has received less attention (Shahriari & Isfahani, 2018; Wang & Chen, 2014), which represent a promising path for future studies. In terms of methodology, there are few studies that used the mixed method approach to understand the relationship between HPWS and

innovation types (Gritti & Leoni, 2011; Shipton, 2019; Abdullayeva & Second, 2017), while the majority used a quantitative approach (Rasheed et al., 2017; Fu et al., 2015; Shahriari & Isfahani, 2017; Liu, 2007; Oladapo & Onyeaso, 2013; Kang, 2015; Wang & Chen, 2014; Shahriari & Isfahani, 2018; Sanz-valle & Jiménez-jiménez, 2018). Other studies have argued that the relation between HPWS and innovation are not that simple and direct, and thus, introduced employee related issues to a mediators, such as employee voice (Rasheed et al., 2017), employee innovative work behavior (Fu et al., 2015), and employee creativity (Shipton, 2019), which make sense as HPWS is designed to raise the employees skills and competencies. By contrast, some studies focused on matters concerning the organization as a mediators and moderators such as innovative climate (Kang, 2015), organizational learning (Shahriari & Isfahani, 2017), governance participation and direct voice mechanism (Zhou & Fan, 2019), and learning goal (Shipton, 2019) alternately used as a mediators and moderators. However, there is lack of studies that combine both employees and organizational issues as a moderators or mediators in the relationship between HPWS and innovation in one study. Although several studies confirmed the positive relationship between HPWS and innovation, according to Liu (2007) considering HPWS practices individually do show an effect on organizational innovation. When HPWS is applied as a bundled system of practices, it has a positive significant effect on organizational innovation. Abdullayeva and Second (2017) confirmed Liu's (2007) results and found that HRM practices collectively affect organizational innovation more than individually. In fact, HPWS works as a system where each practice complements other practices to build a high-performance system that deliberately helps make up innovation. Noticeably, most of the literature is western-based; the studies are from Italy, USA, and Germany in addition to East Asian countries such as China and Korea which does not necessarily reflect the Arab culture. Thus, it is worthwhile to understand the relationship between HPWS and innovation within the context of Arab culture. Overall, there is a lack of studies that explored relationship between HPWS with product innovation, highlighted in table 1, despite the importance of product development, expansion, and differentiation for firm's growth (Braguinsky, Ohyama, Okazaki, & Syverson, 2019), in addition, the dominant literature doesn't consider the MENA region specially Gulf Council Countries (GCC).

Another key issue in the reviewed studies is that different HPWS practices were used in every study. However, the five most common practices that are frequently appeared in the reviewed articles are shown in table 2 below. Staffing, training, performance appraisal, participation and compensation promote employees' innovative behavior, but this will not lead to any product innovation unless it is accompanied by conducive organizational environment that is nurtured to foster product innovation. Organizational climate is not less important than HPWS when product innovation is considered. Setting up an organizational climate that encourage employees to try new ways of doing their tasks with psychological safety assist organizations to develop new products continuously. When the right HR practices combined with organizational climate that stimulate uncovered employees' ideas, product innovation is guaranteed. Among the HRP practices the Staffing, training and performance appraisal were the most common practices in the reviewed articles, while participation and compensation practices are not frequently used and added due to their importance to employee's development.

Table 1: Key articles that link HPWS with Innovation

Author (s) and year	Title	Sample	Method	Moderator or Mediator	Key Findings
(Liu, 2007)	Organizational Innovation and Human Resource Practice: A View of Strategic Human Resource Bundling	74 respondents from Chinese entities.	Quantitative method	-	Individual HPWS practice has no effect on organizational innovation, while HPWS as a bundled system has significant effect on innovation
(Gritti & Leoni, 2011)	high Performance Work Practices, Industrial Relations and Firm Propensity for Innovation	Employees in 166 industrial firms in Italy	Mixed method	-	HPWS has a positive effect on both types of innovation
(Oladapo & Onyiaso, 2013)	An Empirical Investigation of Sub Dimensions of High Performance Work Systems that Predict Organizational Innovation	240 motel establishments in the USA	Quantitative method	-	two out of three sub-dimensions of HPWS predicted organizational innovation
(Wang & Chen, 2014)	Does intellectual capital matter? High-performance work systems and bilateral innovative capabilities	164 firms in the People's Republic of China	Quantitative method	Mediator/ intellectual capital	HPWSs contribute to both the incremental and radical innovative capabilities of organizations
(Fu et al., 2015)	How do high performance work systems influence organizational innovation in professional service firms?	195 managing partners in 120 Irish accounting firms	Quantitative method	Mediator/ Employees innovative work behavior	HPWS has a positive effect on organization's innovation and IWB mediate this relationship
(Kang, 2015)	Exploring the Link Between High Performance Work Systems and Innovation	675 R&D units in(South Korea)	Quantitative method	Moderator/ innovative climate	HPWS have indirect effects on innovative outcomes through moderation via innovative climate
(Mazzei, Flynn, & Haynie, 2016)	Moving beyond initial success: Promoting innovation in small businesses through high-performance work practices	Literature review	-	-	HPWS Promote and fully realize the potential of employees as the driving force for innovation and sustained success
(Abdullayeva & Second, 2017)	Innovation facilitating HPWS HRM-practices: a mixed methods study	300 employees in Dutch manufacturing industry	Mixed method	-	There is no significant relationship between individual HRM practices and product innovation, while as a system (HPWS) there is as positive relationship

Author (s) and year	Title	Sample	Method	Moderator or Mediator	Key Findings
(Rasheed et al., 2017)	Exploring the role of employee voice between high-performance work system and organizational innovation in small and medium enterprises	239 respondents from federal government organization in Pakistan	Quantitative method	Mediator/ Employee voice	HPWS was positively related to employee voice and organizational innovation
(Shahriari & Isfahani, 2017)	Learning, innovation and high performance in knowledge-based firms	112 employees in electricity firms in Iran	Quantitative method	Mediator / organizational learning	HPWS has positive effect on innovation mediated by organizational learning
(Sanz-valle & Jiménez-jiménez, 2018)	HRM and product innovation: does innovative work behavior mediate that relationship?	managers in 225 Spanish manufacturing firms	Quantitative method	Mediator/ employees' innovative work behavior	Positive effect of HPWS on product innovation mediated by innovative work behavior
(Shahriari & Isfahani, 2018)	The effect of high performance work systems on radical innovation in knowledge-based companies through moderating role of innovation capabilities	managers and employees of Iranian knowledge-based companies	Quantitative method	Moderator/ innovation capabilities	HPWS affect radical innovation positively moderated by innovation capabilities
(Shipton, 2019)	High-performance work systems and innovation in Vietnamese small firms	133 SMEs in Vietnamese	Mixed method	Mediator/ employee creativity, moderator/ learning goal orientation	Employee creativity mediate HPWS and firm innovation relationship, learning goal orientation moderate this relationship
(Zhou & Fan, 2019)	How and when matter: Exploring the interaction effects of high-performance work systems, employee participation, and human capital on organizational innovation	1,250 employees in China	Quantitative method	Moderators/ governance participation and direct voice mechanism	HPWS has positive and negative association with innovation depend on moderators

Table 2: *Most common HPWS practices related to specific classification*

classification	Most common HPWS practices
HPWS - employees	Staffing, training, performance appraisal, participation, compensation
HPWS - climate	Staffing, training, performance-based pay, empowerment, performance appraisal, job rotation
HPWS - degree of innovation	Staffing, participation, training, performance management
HPWS - product innovation	Staffing, training, appraisal, compensation
HPWS - overall innovation	Training, selection, performance-related pay

Overall, based on the discussion in the previous section, the following gaps were identified

- There is a lack of studies that consider both employees and organizational matters as a moderator or mediator in the relationship between HPWS and innovation.
- There are few studies that used mixed method approach to investigate the relationship between HPWS and innovation.
- Rare attention in literature was given to the relationship between HPWS and innovation types such as product innovation.
- There is lack of studies that explore the relationship between HPWS and degree of innovation such as radical or incremental innovation.
- There is lack of systematic literature review in the HPWS and product innovation research area.
- No previous research was conduct in the GCC region that associate HPWS and product innovation.

Therefore, a conceptual framework was developed by trying to fill the above gaps and adding employees' innovative work behavior and organizational climate as two mediators in the relationship between HPWS and product innovation as depicted in figure 1 below.

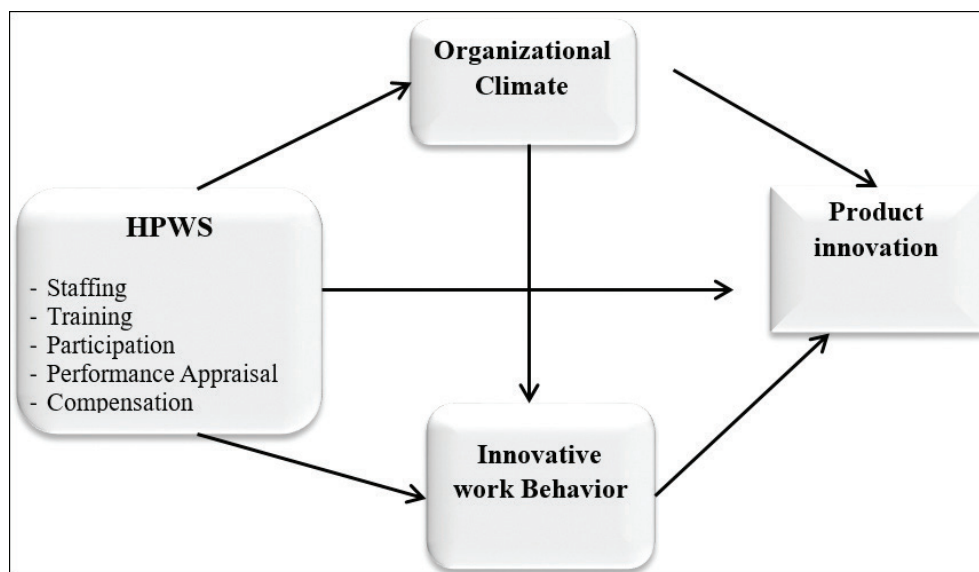


Figure 1: Proposed Framework

Conclusions, Future Studies, and Recommendations

Organizations need to improve their HR systems to be a HPWS by focusing on the most important five practices staffing, training, performance appraisal, compensation and participation, and ensure that all of them follow a highly required standards to influence their employees properly and encourage them to engage in innovating new ideas. Moreover, organizational climate is a very important aspect that could complement the trigger on innovation in any organization; therefore, attention should be given to this aspect. Based on the reviewed literature, future studies could add different mediators or

moderators to HPWS and innovation relationship such as leadership, culture, knowledge sharing, organization's structure, organizational coordination, internal social structure, and job engagement. In addition, HPWS with many types of innovation need to be examined such as product innovation, technology innovation, process innovation, and service innovation. Moreover, HPWS and the degree of innovation need to be investigated such as radical and incremental innovation. HPWS and innovation research need to be implemented in MENA region. In addition, mixed method should be used in future studies rather than focusing on quantitative approaches. Finally, High performance work system is key role of innovation in any organizations that could influence the overall innovation process through its effectiveness on organizations' strategy, structure, employees, climate, and culture. Therefore, start from enhancing HR system and be aware of its circumstance and consequences will be the shortcut that will take the organization to the needed achievable innovation.

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الرابط المفقود بين نظام العمل عالي الأداء وابتكار المنتجات: مراجعة منتظمة

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المُستخلص

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الهدف: تحديد الرابط المفقود في الأدبيات بين نظام العمل عالي الأداء (HPWS) وابتكار المنتجات، وتحديد إذا كانت هناك أي متغيرات وسيطة تلعب دوراً في العلاقة بين HPWS وابتكار المنتج. تصميم الدراسة: مراجعة منهجية لجميع المقالات ذات الصلة التي تربط بين HPWS وابتكار المنتج. الطريقة: البحث بمنهجية في الأدبيات في 8 قواعد بيانات أنتج 50 مقالاً تمس الموضوع بشكل مباشر أو غير مباشر كشف مسحهم جميعاً أن 14 مقالة فقط لها صلة مباشرة في الموضوع وتم نشرها خلال الـ 13 سنة الماضية، لذلك تم تضمينهم جميعاً في مراجعة الأدبيات الحالية. النتائج: كشفت النتيجة أن HPWS يرتبط ارتباطاً إيجابياً بابتكار المنتج. بالإضافة إلى ذلك ، تتوسط العلاقة بين HPWS وابتكار المنتجات من خلال عدة عوامل من بينها سلوك العمل المبتكر والمناخ التنظيمي. علاوة على ذلك ، تم تطوير نموذج مفاهيمي جديد وسيتم اختباره في المرحلة التالية من هذا المشروع البحثي. التوصيات: بناءً على نتائج البحث تم تقديم مجموعة من التوصيات العملية والعلمية. الأصالة: تنبثق من تطوير نموذج مفاهيمي جديد مفقود في الأدبيات وتكييفه للائم دول مجلس التعاون الخليجي. الدراسات المستقبلية: يمكن إضافة عوامل تنظيمية أخرى مثل الثقافة وأنماط القيادة والمشاركة الوظيفية إلى الإطار المقترح.

الكلمات الدالة: مراجعة منتظمة للأدبيات، نظام العمل عالي الأداء، ابتكار المنتج.

