



**Unveiling the Relationship between e-HRM, Impersonal Trust and Employee Productivity**

Journal:	<i>Management Research Review</i>
Manuscript ID	MRR-02-2018-0094.R3
Manuscript Type:	Original Article
Field Categories:	Human Resource Management
Keywords:	e-HRM, organisational trust, organisational performance, structural equation modelling, line managers, Pakistan, banks

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## **Unveiling the Relationship between e-HRM, Impersonal Trust and Employee Productivity**

### **Abstract**

**Purpose:** This study draws upon social exchange theory to explore the role of impersonal trust as an intermediate value-creating factor between relational e-HRM and productivity. This paper seeks the antecedents and consequences of impersonal trust within organisations to provide a holistic view of e-HRM and employee productivity. This is the first study to examine how impersonal trust mediates the relationship between e-HRM and employee productivity.

**Design:** The data were collected through a large-scale survey of 700 line managers in Pakistani banks. The data were analysed using structure equation modelling.

**Findings:** The empirical results validate all of the study's hypotheses, including the role of impersonal trust, which partially mediates the relationship between e-HRM and employee productivity. The results provide empirical evidence that technology-enabled HRM supports organisations by enhancing organisational trust and productivity outcomes.

**Originality:** Such findings contribute to the HRM literature: e-HRM and organisational trust are key predictors for improving employee productivity. The existing literature suggests that e-HRM has a positive impact on employees' trust in the HRM department. The results provide valuable insights for HR practitioners allowing them to enhance employee productivity by using e-HRM to improve employees' trust in the organisation.

**Keywords.** E-HRM; organisational trust; organisational performance; structural equation modelling; line managers; Pakistan; banks

## Introduction

Apart from focusing on conventional strategies, such as improving the quality of services, product development and organisational routines, firms are seeking to enhance their competitive advantages by creating value for their 'internal customers' or employees (Tzafirir et al., 2004). However, a lack of trust between employees and their employers is likely to result in lower productivity that will reduce the firm's performance (Vanhala and Ahteela, 2011). Therefore, organisations face an increasing need to focus on value-creating practices to foster trust to improve employee productivity. One approach is – through the use of e-HRM (Bissola and Imperatori, 2014) – to enhance impersonal trust in organisations, which 'refers to trust in impersonal organisational factors such as vision and strategy, top management, the management group's goals and capability, technological and commercial competence, justice, fair processes and structures, roles, technology and reputation, and HRM policies' (Vanhala et al., 2011: 486). More broadly, firms are adopting a variety of workplace practices to improve employee performance by developing an environment of trust (Vanhala and Ritala, 2016).

Various studies have acknowledged that organisational trust is a key factor that influences a range of organisational outcomes, including productivity (Katou, 2015; Martins and Terblanche, 2003; Vanhala & Dietz, 2015; Vanhala & Ritala, 2016). Research indicates that electronic or e-HRM is an important tool to enhance interactions between different groups of employees (Bissola & Imperatori, 2014; Bondarouk, Harms, & Lepak, 2017; Marler and Fisher, 2016; Panos and Bellou, 2016). Drawing on various conceptualisations of e-HRM that we detail below, we define e-HRM as the integration of various HRM and IT processes to improve workplace conditions to add value for the organisation; it is characterised by a shift away from traditional

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3 HRM which is labour-intensive, towards a more technology-intensive, standardised, and efficient  
4 approach to HRM (Bondarouk, Harms, & Lepak, 2016; Iqbal et al., 2018; Parry & Tyson, 2011).  
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6 e-HRM may, therefore, affect organisational trust because it affects employees and managers  
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8 (Bissola and Imperatori, 2014), and can help to improve the relationship between employees and  
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10 the HRM department (Bissola & Imperatori, 2014). The HRM literature suggests that impersonal  
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12 trust has a positive effect on productivity and organisational performance (Katou, 2015; Vanhala  
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14 & Dietz, 2015; Vanhala and Ritala, 2011). Although firms are increasingly using e-HRM, no  
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16 studies have examined how e-HRM impacts employee productivity both directly and through its  
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18 effect on organisational trust.  
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26 e-HRM is not just the ‘digitalisation’ of the HRM system. Studies that draw on social exchange  
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28 theory argue that HRM practices influence employee attitudes; in particular, employees’ trust in  
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30 the organisation is likely to be positively associated with their perceptions of the fairness of the  
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32 HRM system. Therefore, trust is an important value-creating factor in the potential causal  
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34 relationship between e-HRM and organisational outcomes, suggesting a mediating effect of  
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36 organisational trust between e-HRM and employee productivity. However, there is a lack of  
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38 empirical evidence whether e-HRM does actually influence impersonal trust. Therefore, this  
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40 study contributes by examining the role, if any, of e-HRM in enhancing impersonal trust. Some  
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42 recent e-HRM studies have stressed the importance of intervening variables to link e-HRM to  
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44 various organisational outcomes (Bellou, 2016; Wahyudi and Park, 2014), including a potential  
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46 mediating role for e-HRM (Vanhala and Ritala, 2016). We build on this work to assess any  
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48 mediating role that impersonal trust may play between e-HRM and employee productivity. This  
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50 paper, therefore, examines how e-HRM and impersonal trust influence strategic outcomes and  
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3 tries to un-lock the black box of HRM by identifying a theoretically and empirically compelling  
4 path through which e-HRM delivers value to the organisation via the mediator of impersonal  
5 trust.  
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## 10 11 12 **Literature Review**

### 13 14 *e-HRM definition*

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16 HRM departments continue to move towards technology-enabled HRM systems to add value for  
17 their organisations (Bondarouk, Parry, & Furtmueller, 2017; Stone & Dulebohn, 2013). Various  
18 attempts have been made to define e-HRM. Ruël, Bondarouk, & Looise (2004, p. 16) defined e-  
19 HRM as a ‘way of implementing HRM strategies, policies, and practices in organizations  
20 through the conscious and direct support of and/or with the full use of channels based on web-  
21 technologies’. e-HRM has been used to refer to how, using technology, organisations implement  
22 HRM strategies, policies and practices to help them achieve their objectives (Parry and Tyson,  
23 2011). Bondarouk et al. (2009) defined e-HRM as an integrative mechanism between HRM and  
24 IT that aims to create value within and across organisations for targeted employees and  
25 management (Bondarouk & Ruël, 2009). We draw on these to define e-HRM as the integration  
26 of various HRM policies and practices with IT processes to improve workplace conditions to add  
27 value for the organisation.  
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### 47 *e-HRM and traditional HRM*

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49 Bissola & Imperatori (2010) argued that e-HRM improves traditional HRM processes. Research  
50 suggests that e-HRM improves HR service quality (Bondarouk, Harms, & Lepak, 2016; Iqbal et  
51 al., 2018). e-HRM marks a shift from traditional labour-intensive practices to technology-  
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3 supported ones in which employees, using HRM software rather than HRM staff, perform a  
4 majority of operational HR activities (Parry and Tyson, 2011). It represents a potential shift  
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6 towards a more strategic, unambiguous and integrated approach to HRM (Bondarouk, Harms, et  
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8 al., 2017).  
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14 In the traditional HRM approach, HR department employees largely deliver and manage most  
15 HR services, while e-HRM enables the organisation to deliver HR services through information  
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17 technology, enabling firms to involve line managers in HR activities to a greater extent and  
18  
19 freeing HR professionals from administrative overload to focus on strategic activities  
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21 (Bondarouk et al., 2017; Marler and Fisher, 2013). The primary changes brought by e-HRM  
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23 may have significant implications that go far beyond operational efficiencies and extend to  
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25 relational and transformational outcomes (Lengnick-Hall and Moritz, 2003), by, for instance,  
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27 supporting internal customers' personal and work life and by enhancing procedural justice  
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29 (Bissola and Imperatori, 2014).  
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### 38 **Hypothesis Development**

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40 HRM can play a vital role in improving firm performance (Jiang et al., 2012; Vanhala and Dietz,  
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42 2015). Moreover, e-HRM offers various value-creating opportunities to improve productivity  
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44 (Bellou, 2016; Bondarouk, Harms, et al., 2017; Marler and Parry, 2016; Obeidat, 2016; Wahyudi  
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46 and Park, 2014). Reputation and a trust-based employment relationship are imperative for an  
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48 organisation to compete in developing economies (Bissola and Imperatori, 2014).  
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### *e-HRM and impersonal trust*

One aim of e-HRM is to manage and strengthen workplace relationships by empowering employees (Ruël et al., 2004). Many firms are continuously investing in HRM systems to develop a positive employment relationship by reinforcing trust in organisational routines, rules, procedures and systems (Bissola and Imperatori, 2014; Searle and Dietz, 2012). Trust is considered as a potential source of sustainable competitive advantage due to rapid changes in the workplace environment (Vanhala and Ahteela, 2011). Based on adaptive structuration theory (AST), social factors and technological characteristics interact to affect group outcomes. AST has been suggested as a viable theoretical approach for probing the impact of information technology on organisational change (Desanctis and Poole, 1994). AST argues that technology should be viewed as part of social processes. Technology and institutions provide social structures to engage employees in social interaction that both enable and constrain human action within the firm (Ajjan et al., 2016). The AST theory focuses on social and relational factors through the use of technology (DeRosa et al., 2004); therefore, it is a key theoretical framework for examining the relationship between e-HRM and trust.

By employing AST theory, DeRosa et al. (2004) recognise that the development and maintenance of trust are factors that can help to explain organisational success. Previous research has established a statistically significant relationship between e-HRM and employees' clarity over HRM process (Bissola and Imperatori, 2014). One reason for this is that technology-based e-HRM can make HR policies and their use more transparent, unambiguous and relevant to employees and can enhance or reinforce the role of traditional paper-based HRM (Bondarouk, Harms, et al., 2017). Such findings suggest that e-HRM will enhance employees' impersonal

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3 trust in the organisation. Indeed, the perception of the clarity and openness of the HRM system,  
4 including key elements, such as performance and the appraisal system, directly influences  
5 impersonal trust because employees perceive that the firm has an accurate, reliable and  
6 transparent performance recognition system in place (Bissola and Imperatori, 2014).  
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14 By boosting the fair treatment of employees, e-HRM can lead to trust in organisational processes  
15 that, in turn, can enhance impersonal trust and improve organisational outcomes (Katou, 2013;  
16 Sankowska, 2013; Searle et al., 2011; Searle and Dietz, 2012). The increased use of technology,  
17 in general, enables employees to trust organisational procedures and systems (impersonal trust);  
18 more specifically, e-HRM can make HR procedures even clearer and more transparent as they  
19 can be made readily available on a digital repository to all employees (Bondarouk, Harms, et al.,  
20 2017). Bissola & Imperatori (2014) suggested that e-HRM influences procedural justice and  
21 employees' trust in the HRM department. Based on AST theory, e-HRM is seen as a way to  
22 develop and maintain impersonal trust. Drawing on this material, we put forward our first  
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40 *H1: There is a positive relationship between the use of e-HRM practices and impersonal trust.*  
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#### 44 *Impersonal trust and employee productivity*

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46 Relational rationality, such as fairness, legitimacy and procedural justice, implies treating  
47 employees well. Paauwe (2009) suggested that it should be directed towards lower absenteeism,  
48 increased employee satisfaction and greater efforts, all leading to improvements in employee  
49 productivity. A relational perspective stresses how a supportive and co-operative workplace  
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3 environment can increase productivity (Sun et al., 2007). In such situations, trust has a central  
4 role to play. A relational approach to HRM involves creating exchanges and interactions that  
5 lead to mutual benefits. Trust is widely recognised as a key value-creating factor influencing  
6 organisation performance indicators, such as employee productivity (Bhattacharya et al., 1998;  
7 Holland et al., 2017; Vanhala and Ritala, 2016). Trust is regarded as the belief that both actors  
8 will act in a way that is consistent with previous commitments. Several positive work-related  
9 outcomes have been reported as a consequence of impersonal trust (Vanhala et al., 2016;  
10 Vanhala and Dietz, 2015). For instance, Searl and Dietz (2012) proposed that employees increase  
11 their effort levels in an environment of trust. By contrast, a workplace environment where trust is  
12 low may lead to dysfunctional outcomes, such as cynicism, low employee motivation, low job  
13 satisfaction and low productivity (Seifert et al., 2016; Svensson, 2012; Katou, 2013; Alfes,  
14 Shantz and Truss, 2012; Gould-Williams, 2003). Thus, impersonal trust can help to improve  
15 employee productivity (Vanhala and Ritala, 2016). Therefore, we formulated the following  
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38 *H2: There is a positive relationship between impersonal trust and employee productivity*

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42 *e-HRM and perceived employee productivity*

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44 Increases in productivity are often the chief motivation for companies to introduce information  
45 technology (Swierczek and Shrestha, 2003; Black and Lynch, 2001; Brynjolfsson and Young,  
46 1996; Jalava and Pohjola, 2007; Qutaishat et al., 2012; Subriadi et al., 2013). Organisations  
47 invest in HRM systems to make effective use of their human capital and, thereby, to enhance  
48 employee productivity (Datta et al., 2005; Liao, Toya, Lepak, & Hong, 2009). Indeed, many  
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3 HRM departments have moved towards technology (Scudder and Kucic, 1991; Lempinen and  
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5 Rajala, 2014), including e-HRM, to boost employee productivity (CedarCrestone, 2010, 2012,  
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7 2014).

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12 The AST theory provides a theoretical foundation for examining the impact of e-HRM on  
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14 employee productivity. e-HRM systems offer employees opportunities to enhance their  
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16 capabilities and contribute to the organisation's success (Bissola and Imperatori, 2013; Bonaruk  
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18 and Ruel, 2013; Marler and Fisher, 2013; Panos & Bellou, 2016; Snell and Dean, 1992). e-HRM  
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20 also increases productivity through automation and replacing low-value administrative tasks with  
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22 high value-added tasks (Marler and Parry, 2016). In other words, non-HRM employees can  
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24 perform some routine HRM transactions themselves, such as changing their personal information  
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26 and registering for training opportunities, without having to 'go through' a HR employee.  
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33 Research shows that the use of e-HRM practices can improve employee productivity (Lengnick-  
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35 Hall, and Moritz, 2003; Foster, 2009). In comparison to traditional HRM approaches, e-HRM  
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37 can help to streamline transactional HRM activities; speed up HR processes; improve  
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39 communication; reduce the HR headcount; and capture, create and transfer some HR knowledge  
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41 more accurately and speedily. These advantages can help to increase employee productivity  
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43 (Foster, 2010; CedarCrestone, 2010, 2014; Lengnick-Hall and Moritz 2003; Marler and Parry,  
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45 2016; Martin, Reddington and Alexander, 2008; Parry, 2011). More broadly, e-HRM, by  
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47 increasing transparency and clarity over HR policies, may help to improve employee satisfaction  
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49 with HR and, in turn, lead to greater employee productivity. Indeed, improving employee  
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3 productivity is one of the main reasons why organisations introduce e-HRM (CedarCrestone,  
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5 2008). Thus, we hypothesise:  
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10 *H3. There is a positive relationship between e-HRM and employee productivity.*  
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15 *Intermediate effect of impersonal trust between e-HRM and employee productivity*  
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17 Impersonal trust may influence the relationship between e-HRM practices and various outcomes.  
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19 The links between impersonal trust and HRM may be examined in multiple ways. For example,  
20 trust can be examined as a consequence of HRM practices (Vanhala and Ahteela, 2011) or trust  
21 can be used as antecedent to improved HRM and organisational outcomes (Aryee et al., 2002;  
22 Katou, 2013, 2015; Shockley-Zalabak et al., 2000). Social exchange theory argues that 1) high  
23 levels of trust between employees and firms have benefits for companies and 2) HR activities  
24 need to focus on the development of trust to enhance firms' outcomes (Whitener, 1999).  
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26 Impersonal trust also has been recognised as a key mediator between HRM and organisational  
27 outcomes. For example, Vanhala and Ritala (2016) recognised impersonal trust as a mediator  
28 between HRM and organisational outcomes. Based on social exchange theory, employees  
29 reciprocate the introduction of e-HRM, which often improves transparency and clarity, by  
30 demonstrating high levels of trust in their organisation and may become more productive.  
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35 Some recent e-HRM studies have stressed the importance of intervening variables to link e-HRM  
36 to various organisational outcomes (Panos & Bellou, 2016; Wahyudi and Park, 2014). Other  
37 research suggests that contingent variables are needed to explain the relationship between e-  
38 HRM and various organisational outcomes (Bondarouk and Ruel, 2013; Marler and Parry, 2016).  
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3 This study hypothesises that impersonal trust mediates rather than moderates the relationship  
4 between e-HRM and employee productivity.  
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10 *H4: Impersonal trust mediates the relationship between e-HRM and employee productivity.*  
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14 Figure 1 combines this paper's four hypotheses to provide the theoretical framework for this  
15 study.  
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21 Figure 1 about here  
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## 26 **Methodology**

### 27 *Context*

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30 The context of the Pakistani banking sector is appropriate for this study. This sector has been  
31 characterised over the last few decades by de-regulation, technological changes and increases in  
32 competition. It comprises local and foreign-owned banks as well as privatised banks. Banking  
33 organisations of Pakistan represent 95 per cent of the country's financial sector (World  
34 Economic Forum, 2009). The history of the banking sector of Pakistan can be categorised into  
35 pre-nationalisation, nationalisation, and privatisation stages. Privatisation increased the number  
36 of banks and state bank reforms have facilitated the entry of new banks into the sector and,  
37 hence, increased competition. As a result, banks started to emphasise more heavily their HRM  
38 practices to improve employees' organisational trust and productivity in order to ensure they  
39 remained competitive. Research buttresses the view that HRM can, by improving organisational  
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3 trust, enhance employee performance in Pakistan (Ahmad et al., 2015; Khilji & Wang, 2006;  
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5 Mahmood et al., 2014).  
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10 Economic crises in Pakistan have encouraged some firms to enhance their management practices  
11 (to try) to improve organisational performance, leading to the use of e-HRM both for relational  
12 and transformational outcomes. For instance, Iqbal and Mansoor (2016) noted that banking  
13 organisations in Pakistan have increased their use of e-HRM practices. Nasreen et al. (2016)  
14 argued that e-HRM in Pakistan is used to minimise recruitment costs. Iqbal et al. (2018a) found  
15 that firms in Pakistan have increasingly used e-HRM in an attempt to improve HR service  
16 quality and to make employees more productive. Moreover, Iqbal et al. (2018b) found a positive  
17 and significant relationship between e-HRM and employee productivity. Therefore, banking  
18 organisations in Pakistan have turned to e-HRM to boost productivity and maintain/improve their  
19 strengths in a more competitive market. There is some evidence to indicate that e-HRM has  
20 helped them to achieve their goals; however, how e-HRM enables them to improve their  
21 productivity remains unclear  
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#### 40 **Sample**

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42 In order to benefit from single sector analysis, we decided to select our sample from the banking  
43 sector in Pakistan. Conducting research in multiple sectors with different competitive  
44 environments may, in some cases, lead to inappropriate findings, as companies in one industry  
45 may stress market-share, while those in another may prioritise profits, suggesting that single-  
46 industry studies are more appropriate and valid than multiple-industry ones for examining the  
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3 link between e-HRM and performance indicators, such as employee productivity (Khilji and  
4 Wang, 2006).  
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10 Our population consists of all the branch establishments of 17 private and privatised commercial  
11 banks that have been using e-HRM for at least the last two years. Our unit of analysis is the  
12 branch of the relevant banking organisation, as we seek to explore the links between e-HRM,  
13 impersonal trust and employee productivity. Keenoy (1999) and Khilji et al. (2006) support the  
14 assertion that the truth (about HRM) lies outside the HRM department. HR activities, including  
15 e-HRM, are delivered through HRM professionals, line managers, branch managers and  
16 information technology (Obeidat, 2016; Parry, 2011; Iqbal et al., 2018; Strohmeier, 2007).  
17 Therefore, we need to ensure that our data contain information from different groups and not just  
18 those within the HRM department (Ruël et al., 2004; p 365).  
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33 We collected the data using a self-administered questionnaire from branch managers and  
34 operational managers in bank branches. Using a random sampling approach, the study invited  
35 managers, both branch and operational managers, from 772 bank branches to participate in the  
36 research. Overall, we received completed and usable responses from 323 branches of commercial  
37 banks, resulting in a response rate of 42 per cent. Questionnaires were sent to each branch;  
38 therefore, the unit of analysis is the branch establishment. Only those organisations have been  
39 selected that used e-HRM for at least two years within and outside the HRM department for  
40 HRM activities. Studies suggest that two years of maturity creates an appropriate zone for e-  
41 HRM research, as respondents have a good understanding of e-HRM (Bondarouk, Harms, et al.,  
42 2017; Ruël et al., 2004). The majority of the respondents in the sampled banks have been  
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3 working in Pakistan for at least 20 years. On average, the branches in our sample had 11-20  
4 employees. A simple majority of our respondents had a formal business education (48%),  
5 suggesting that our respondents will understand HRM policies and practices. Table 1 shows the  
6 correlations between our variables.  
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15 Table 1 about here  
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### 19 *Common method variance*

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21 The most common problem associated with quantitative studies, such as surveys, is *common*  
22 *method bias* (Spector, 2006; Richardson et al., 2009; Reio, 2010). Podsakoff et al. (2003) provide  
23 a procedural remedy for controlling CMV by suggesting that both predictor and criterion  
24 measures should come from different sources. To address CMV, we sent questionnaires to  
25 operational and branch managers within the same branch. The branch manager provided  
26 information on employee productivity, organisation age and size, while the operational manager  
27 provided information on the e-HRM practices and impersonal trust. We also conducted a full  
28 collinearity assessment approach (Kock, 2015) that is used to test common method bias in PLS-  
29 SEM. Collinearity results well below the threshold value of 3 suggested that common method  
30 bias is not a threat for this study.  
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### 47 **Measures**

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49 A four section questionnaire was developed to test the hypothesis of the study: the use of  
50 relational e-HRM practices, impersonal trust, perceived employee productivity and demographic  
51 of the study, including branch size and age of the organisation.  
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6 *Independent variable: e-HRM practices*

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8 We measured the *e-HRM practices* as an exogenous latent variable. The objective of the study is  
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10 to examine the relational impact of e-HRM; therefore, the study used seven relational e-HRM  
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12 practices that HR and line managers in the banking industry validated in in-depth interviews to  
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14 ensure the instrument's validity. The study used seven important e-HRM practices that are  
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16 commonly used in the banking industry of Pakistan, which were e-performance management, e-  
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18 performance appraisal, e-benefit management, e-recruitment and selection, e-training and  
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20 development, e-grievance management, and knowledge management. Table 2 provides details of  
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22 this study's measures. Using a seven-point Likert scale, the questionnaire asked respondents to  
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24 indicate the use of particular relational e-HRM practices. The scale was: 1, habitually used; 2,  
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26 quite frequently used; 3, slightly frequently used; 4, neither frequently nor infrequently used; 5,  
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28 infrequently used; 6, slightly infrequently used; 7, not used.  
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35 *Mediating variable: impersonal trust*

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37 The study defines *impersonal trust* as an employee's trust in 'impersonal organizational factors,  
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39 such as vision and strategy, top management, the management group's goals and capability,  
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41 technological and commercial competence, justice, fair processes and structures, roles,  
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43 technology and reputation, and HRM policies' (Vanhala, Puumalainen and Blomqvist, 2011:  
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45 486). Higher levels of impersonal trust are likely to reduce workplace conflict between  
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47 employees and their organisation and to strengthen employee-employer relationships. Impersonal  
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49 trust was measured through Vanhala et al.'s (2011) scale. This scale was specifically designed to  
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51 assess impersonal phenomena of organisational trust and was developed through a systematic  
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3 review of the trust literature and an inductive examination of employee and employer perception  
4 regarding trust in firms. The participants were asked to report their perception regarding  
5 impersonal trust in their branches on a five-point Likert scale. Our measure of impersonal trust  
6 draws on Vanhala et al.'s (2011) scale. We did not retain all of the dimensions and items in that  
7 scale, as we focused on those dimensions most pertinent to the objectives of our study  
8 (organizing activities, technological reliability, fairness in HRM, and communication). Within  
9 these dimensions, we did not use all of the items due to low factor loading and cross-loading.  
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### 21 *Dependent variable*

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23 A number of organisational outcomes potentially reflect the effectiveness of e-HRM. The study  
24 uses *percieved employee productivity* as an organisational outcome. The face validity of the  
25 employee productivity measure is very high (Datta et al., 2005). Second, it is a key indicator for  
26 examining how investment in e-HRM supports organisations' efforts to employ human capital  
27 more efficiently. The importance of employee productivity for e-HRM studies is evident in  
28 surveys by HRM consultants (CedarCrestone, 2012). Drawing on previous studies, we used five  
29 items of perceived employee productivity (Ahmad and Allen, 2015; Iqbal et al., 2018; Patel and  
30 Conklin, 2012; WERS, 2004) on a seven-point Likert scale (ranging from 'a lot below average'  
31 to 'a lot better than average'). Table 2 provides our measures of employee productivity.  
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Table 2 about here

### *Control variables*

e-HRM studies often use organisational age and branch size as control variables (Parry, 2011). To assess organisational size, respondents were asked about the number of employees in their branches (Ohana, 2014). In line with existing HRM/employee productivity research (e.g. Chadwick et al., 2015), bank branch age was measured as the number of years the branch had been operating in Pakistan.

### **Data Analysis Approach**

We used partial least squares structural equation modelling (PLS-SEM) to evaluate the study's conceptual model – business and management studies use this technique extensively (Hair et al., 2016; Hair et al., 2014; Henseler et al., 2015). The literature (e.g. Ringle et al., 2018) suggests that HRM researchers use PLS-SEM when (a) the sample is small (b) data distribution is non-normal and (c) the purpose is theory development. Mardia's coefficient of normality indicates that our data are not normally distributed. PLS-SEM is a good option to evaluate structural model and when the data was non normal (Hair et al., 2017). PLS-SEM has no distribution and sampling assumption due to its non-parametric characteristic (Vinzi et al., 2010). e-HRM is also an under-theorised area. Therefore, we concluded that variance-based structured equation modeling, i.e. PLS-SEM, is more suited to this study to draw valid inferences to answer our research questions. Missing data treatment, outliers, multi-collinearity, common method variance and normality test at both a univariate and a multivariate level were performed to ensure the data are suitable for structure equation modelling. We used SMART PLS software to test our measurement and structural models (Chin, 1998; Hair et al., 2014).

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3 The measurement model is the first step in SEM analysis and provides the basis for the  
4 assessment of the fitness and constructs reliability and validity of the conceptual model. We  
5 evaluated our measurement model through internal consistency reliability, indicators reliability,  
6 and convergent and discriminate validity, as proposed by Hair et al., (2014). The second step is  
7 referred to as a structural model that aims to test the significance of proposed theoretical linkages  
8 (Hair et al., 2014). These two sequential processes are essential for evaluating and testing causal  
9 relationships (Anderson and Gerbing, 1988; Hair et al., 2014).  
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## 21 **Empirical Results**

### 22 *Measurement model*

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24 The correlational matrix demonstrates that latent variables are linearly correlated with each  
25 other. In PLS-SEM, the reflective measurement model was assessed through the indicator  
26 reliability, internal consistency, convergent and discriminate validity by following Chin (2010)  
27 and Hair et al., (2014).  
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### 38 *Construct reliability*

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40 The first criterion to evaluate our reflective outer model is *internal consistency* i.e. each set is  
41 supposed to be homogeneous as well as uni-dimensional (Hair et al., 2014; Vinzi et al., 2010).  
42 We do not use Cronbach  $\alpha$  to estimate internal consistency because of its limitations. Instead, to  
43 assess internal consistency, we use composite reliability (CR) that reveals the degree to which  
44 indicators represent a common latent-construct (Hair et al., 2014). Table 2 shows that the  
45 composite reliability ranged from 0.846 to 0.920 for our proposed model, surpassing the  
46 proposed acceptable limit of  $CR > 0.70$  (Hair et al., 2014; Sarstedt et al., 2014).  
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### *Convergent validity*

Confirmation of convergent validity is imperative for testing the reflective measurement model that boosts researchers' confidence in construct validity. In this study we also assessed convergent validity through recommended procedures in the form of factor loading and average variance extracted (AVE) (Hair et al., 2010). The former is used to assess convergent validity at the item level, while the latter is used at the construct level. Table 2 demonstrates that convergent validity is ensured because factor loading and AVE is greater than the threshold value and all items are significantly loaded on their respective construct (Hair et al., 2014).

### *Discriminate validity*

Cross loading and Fornell-Larker was used to evaluate discriminate validity. Table 3 illustrates that no cross loading was found that suggested discriminate validity was ensured at the item level. To ensure discriminate validity at the construct level, we used the Fornell-Larker criterion. Table 4 demonstrates that the square-root of each construct's AVE (Fornell-Larker criterion) is not less than the correlation with other construct, indicating that discriminate validity at the construct level was ensured.

Table 3 about here

Table 4 about here

### *Structural model estimation*

We investigated the relationships between latent variables by estimating a structural model after verifying that the measuring items are reliable and valid. Table 5 presents the results of the structural model in order to test the relationships between our endogenous and exogenous variables. The goal of the structural model was to evaluate the relationships between our constructs. The structural model allows the assessment of multiple structural equations through path analysis (Chin, 2010). We used the ‘coefficient of determination ( $R^2$ )’ for the endogenous latent variable, and the estimation of ‘path coefficient ( $\beta$ )’, ‘path significance’ to estimate the structural model (Gotz, Liehr-Gobbers, and Krafft, 2010; Chin, 2010; Vinzi et al., 2010; Hair et al, 2014). We assessed  $R^2$  and path coefficient through the PLS algorithm. Table 5 illustrates that relational e-HRM practices explained 31.6 per cent of the variance in impersonal trust ( $R^2=0.316$ ), suggesting that the relational e-HRM practices have an important role in building organisational trust. The results of the study indicated that the latent variable explained 41 per cent of the variance in employee productivity ( $R^2=0.410$ ). In order to assess the predictive ability of the model, we estimated  $Q^2$ . Table 5 illustrates that  $Q^2$  values were above zero to exhibit the predictive relevance of the model. It demonstrates that the model is well framed and has an excellent explanatory capability for our focal latent variable.

Table 5 about here

The significance of the relationship was evaluated through bootstrapping procedures of SMART PLS. The result of the bootstrapping analysis illustrated that most of the relationships were significant as shown in Table 5. Hypothesis 1 proposes that e-HRM influences employee

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3 productivity in private commercial banks in Pakistan. Table 5 demonstrates that the relationship  
4 between e-HRM and employee productivity was positive and significant ( $\beta = 0.316$ ;  $t = 4.935$ ,  $p$   
5 = \*\*\*). It implies that e-HRM practices have a positive and direct impact on employee  
6 productivity. Thus, hypothesis 1 was confirmed.  
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14 H2 hypothesises that the greater use of e-HRM practices will lead to enhanced impersonal trust  
15 among internal customers of the firm. The hypothesised relationship between e-HRM practices  
16 and impersonal trust was significant ( $\beta = 0.562$ ;  $t = 11.927$ ;  $p = ***$ ), indicating that e-HRM has  
17 a direct impact on increasing impersonal trust (IPT) in the organisation. Therefore, H2 is  
18 confirmed. H3 proposes that high impersonal trust (IPT) has a positive effect on employee  
19 productivity. Table 5 demonstrates a positive, significant and direct association between  
20 impersonal trust (IPT) and employee productivity ( $\beta = 0.382$ ;  $t = 6.067$ ;  $p = ***$ ). Thus, H3 is  
21 accepted.  
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### 35 **Evaluating Mediating Relationship**

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37 The study followed Hair et al. (2017) to examine the mediating effect of impersonal trust  
38 between e-HRM and employee productivity. By following Hair et al. (2017), the bootstrapping  
39 results demonstrate that the relationship between e-HRM practices and impersonal trust  
40 (mediator) was significant ( $t=11.927$ ) and the relationship between impersonal trust and  
41 employee productivity ( $t=6.067$ ) indicates that the indirect path is significant. Mediation exists  
42 when the coefficient of the independent variable is reduced or the independent variable becomes  
43 insignificant when the mediator is added to the model. The coefficient for the relationship  
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3 between e-HRM and employee productivity is reduced from .539 to .316, indicating that  
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5 impersonal trust mediates the relationship between e-HRM and employee productivity.  
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10 Although some previous research has tested for a mediating effect, it has some limitations, such  
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12 as failing to estimate the magnitude of the indirect effect in total effect as well as missing ‘some  
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14 true mediation effect; i.e. type II errors’ (Hair et al., 2014; Zhao et al., 2010; Mackinnon et al.,  
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16 2007). In this context, the VAF estimate is suggested by Hair et al. (2014, 2017) and Iqbal et al.  
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18 (2018) for PLS-SEM. Therefore, the study used the VAF to assess the magnitude of indirect  
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20 effect. Table 6 demonstrates that impersonal trust partially mediates the relationship between e-  
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22 HRM and employee productivity as VAF is greater than 0.20. Thus H4 was accepted.  
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28 Table 6 about here  
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### 33 **Discussion and Conclusion**

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35 The latest e-HRM review by Bondarouk et al., (2017) argued that e-HRM may enhance human  
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37 resource effectiveness and contribute to the achievement of organisational goals. This study  
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39 explored the role of e-HRM for impersonal trust and employee productivity. We developed four  
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41 hypotheses to examine the roles of e-HRM and impersonal trust in influencing employee  
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43 productivity.  
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49 The results of this study demonstrate that e-HRM positively and significantly influences  
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51 impersonal trust. Various authors have argued that there is a deep connection between HRM  
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53 practices and this form of trust. Research based on social exchange theory suggested that HRM  
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3 practices and employees' perception of the HRM system influence employees' attitudes. e-HRM  
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5 practices would appear to have a positive role in developing and increasing organisational trust.  
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7 This study, by analysing the data of the banking sector of Pakistan, validates the notion that e-  
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9 HRM can act as a trust-building mechanism for organisations.  
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15 Many scholars from different disciplines seem to believe that trust offers several benefits to the  
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17 firm. Building on this, we formulated H3 to examine whether impersonal trust influences  
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19 employee productivity. Our results reveal that impersonal trust is positively associated with  
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21 employee productivity.  
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27 In line with recent trend in HRM, this study theoretically and empirically developed the  
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29 relationship between e-HRM and employee productivity through impersonal trust. The results of  
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31 this study illustrate that the indirect relationship between relational e-HRM and employee  
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33 productivity is statistically significant, suggesting that impersonal trust mediates the relationship  
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35 between relational e-HRM and employee productivity; this is in line with social exchange theory.  
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37 Hypothesis H4 was accepted and supports existing studies that demonstrate that impersonal  
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39 phenomena of organisational trust mediate the relationship between HRM and organisational  
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41 outcomes (Vanhala and Dietz, 2015; Vanhala and Ritala, 2016).  
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47 This study reveals that employees' impersonal trust may be increased by using e-HRM practices  
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49 because it is associated with a perception among employees that top management and HR  
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51 managers will not do anything that is harmful for them. Believing that, employees do not resist  
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53 the changes in the organisation but also accept changes and learn new technology and skills  
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3 resulting in improved employee productivity. It is one of the pioneer studies that has used  
4 impersonal phenomena of organisational trust in an e-HRM context. The findings of the study  
5 demonstrate an association between e-HRM and impersonal trust that suggests that relational e-  
6 HRM is a key way to potentially improve organisational trust.  
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15 This study tried to unlock the black box of HRM by identifying theoretically and empirically the  
16 path through which e-HRM may deliver value to the organisation via the mediator of impersonal  
17 trust. Various studies examine the mediating role of impersonal trust in a HRM context. For  
18 instance, Vanhala & Ritala (2016) empirically examined whether impersonal trust mediates the  
19 relationship between HRM practices and organisational innovativeness. However, the mediating  
20 effect of impersonal trust between e-HRM and employee productivity has not been tested before.  
21 This study, therefore, contributes to the HRM and growing e-HRM literature by establishing the  
22 relationship between impersonal trust and employee productivity.  
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### 35 *Theoretical contribution*

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37 This study contributes to the HRM literature by establishing the relationship between impersonal  
38 trust and employee productivity. The study's findings support social exchange theory: e-HRM is  
39 associated with increases in employees' trust in an organisation and helps to ensure that  
40 organisations recognise the importance of employees. As a result employees reciprocate by  
41 having a positive attitude towards the organisation, helping to improve employee productivity.  
42 Existing studies examined the relationship between impersonal trust and other organisational  
43 outcomes, such as organisational innovativeness. However, recent literature suggested that  
44 relationship between e-HRM and employee productivity is still a grey area. This study found that  
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3 e-HRM has a positive and significant impact on employee productivity. The study stresses the  
4 relational impact of e-HRM to improve employee productivity: e-HRM should be used to  
5 increase employee trust in HRM systems and procedures. Relational e-HRM is equally important  
6 for organizational success, suggesting that theoretical e-HRM models should focus on a variety  
7 of outcomes, including relational ones.  
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### 14 15 16 17 *Practical implications*

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19 The results of the study suggest that employees in high-trust firms are more productive than  
20 those in low-trust ones. This study also provides evidence to HR practitioners that e-HRM may  
21 help to increase employees' trust in organisational procedures and systems and thus can help to  
22 encourage higher productivity. Such value is hard to intimate and may act as a potential source  
23 of competitive advantage (Barney and Hansen, 1994; Vanhala & Dietz, 2015). e-HRM can  
24 enable HRM policies to become more transparent and credible to employees; this is likely to be  
25 especially important in Pakistan as some decisions by managers in organisations may not be  
26 aligned to company policies, potentially leading to dissatisfaction amongst employees (Ahmad  
27 and Allen, 2015). e-HRM can, therefore, represent a commitment by managers to providing  
28 unambiguous policies and decisions within the workplace, enhancing levels of trust.  
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45 Our findings also demonstrate that e-HRM and impersonal trust are linked to improved  
46 employee productivity in the commercial banks of Pakistan. The study provides valuable  
47 information to the practitioner by suggesting that e-HRM is associated with improved employee  
48 productivity when it enables an organisation and its HRM department to develop and maintain  
49 impersonal trust. Both e-HRM and impersonal trust are key predictors for improving employee  
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3 productivity. For HR managers who wish to develop impersonal trust, relational e-HRM  
4 practices are important for achieving such goals; this work provides a valuable insight to  
5 managers and policy makers about relational e-HRM is a value proposition for the firm. This  
6 study provides evidence to HR practitioners that e-HRM can be used as a tool that is associated  
7 with increased employee trust in HRM systems and, thus, is associated with higher levels of  
8 procedural justice and higher productivity in the banking sector in Pakistan.  
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19 It provides valuable information for policy makers that they can consider e-HRM as a tool to  
20 improve relational outcome for banking organisations. Zak (2017) reported that trust can  
21 enhance productivity up to 50 per cent. Improving efficiency is important for banks in Pakistan  
22 as competition in the industry has increased significantly. It can also help to use valuable  
23 resources more efficiently, enabling banks to focus on their key role of acting as intermediaries  
24 between borrowers and those who require funds to invest. In other words, improving the  
25 efficiency of Pakistani banks could have wider benefits. One of the causes of relatively poor  
26 economic growth in Pakistan in recent years has been low labour productivity (Ahmad and  
27 Allen, 2015). If e-HRM can help to improve employee productivity, the social and working  
28 conditions of many Pakistanis could be improved, aiding policy makers to achieve one of their  
29 key objectives. The banking industry is one of the sectors that policy makers see as crucial to  
30 enhancing productivity and economic growth (Ahmad and Allen, 2015). e-HRM could help to do  
31 that.  
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### Limitation and Future Study

This study is limited to the banking sector only; analysing the proposed relationship in multiple sectors would shed further light on the e-HRM employee productivity causal chain. Other sectors, perhaps some that rely on low-skilled labour, may not potentially seek to foster high levels of impersonal trust amongst employees and yet other sectors may promote organisational trust using other means and may not seek to use e-HRM to do so. In addition, Weblins (2016) suggested that national culture influences the successful diffusion of e-HRM; therefore, future studies should examine how national culture influences the relationship between e-HRM and performance. As this research is conducted on banking organisations in Pakistan, evidence from other national contexts would provide insight about e-HRM as a value creation proposition.

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# Appendix

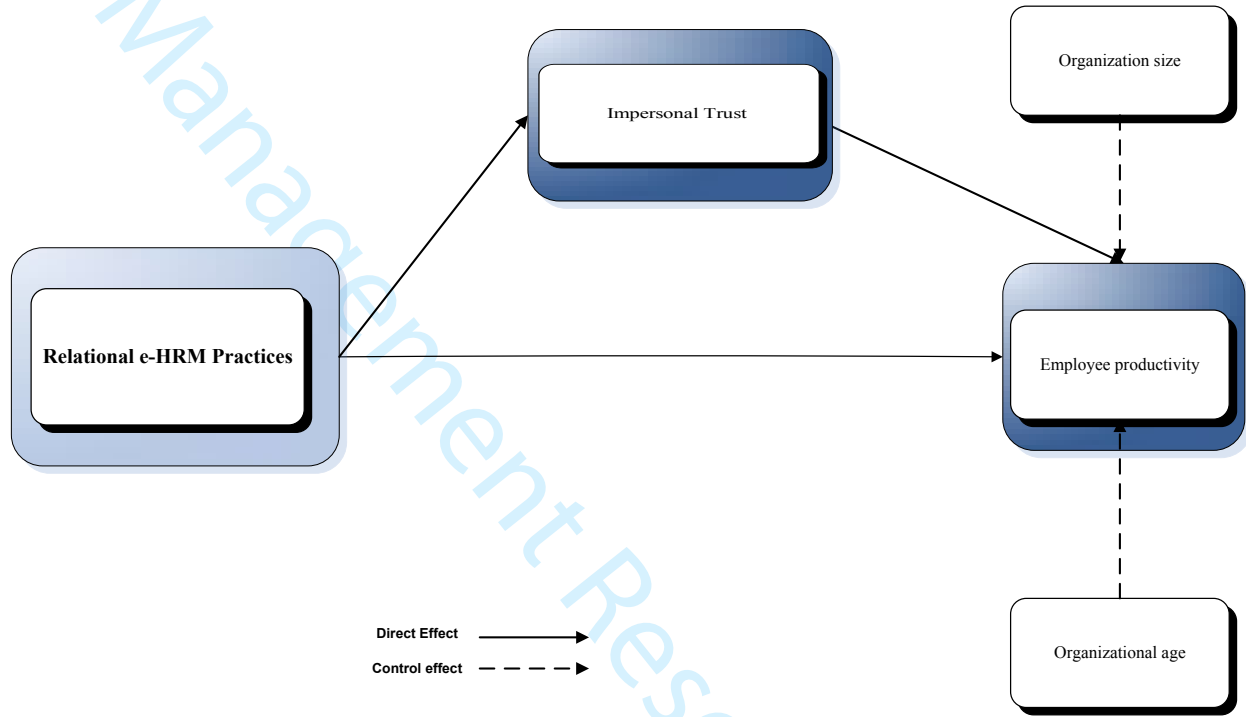


Figure 1: Theoretical framework

Table 1 Correlation Matrix

	<b>EHRMP</b>	<b>Trust</b>	<b>EP</b>	<b>Org_age</b>	<b>Org_size</b>
<b>EHRMP</b>	1				
<b>TRUST</b>	0.5623	1			
<b>EP</b>	0.5430	0.5734	1		
<b>Org_age</b>	-0.1321	-0.1458	-0.1874	1	
<b>Org_size</b>	-0.0066	-0.0037	-0.0459	-0.0502	1

Table 2 Constructs, Measures, Reliability and Convergent Validity

		Indicator	Loading	t-value	CR	AVE
<b>EHRMP</b>	We use e-HRM for formal grievances & complaints	EHRMP1	0.669	14.604	0.875	0.503
	e-HRM is used for performance appraisal in our organisation	EHRMP2	0.659	18.892		
	Our organisation uses e-HRM for managing employee benefits	EHRMP3	0.581	11.608		
	Our organisation uses e-HRM to receive formal information about a wide range of issues relevant to the branch and its operation	EHRMP4	0.774	21.912		
	E-HRM is used for assessment of training needs	EHRMP5	0.857	40.003		
	E-HRM is used for posting and transfer	EHRMP6	0.690	14.714		
	We use e-HRM for online training and learning	EHRMP7	0.705	17.630		
<b>Trust</b>	I receive assistance with technical problems whenever I need it (IT1).	Trust 1	0.902	59.965	0.926	0.759
	There are work practices in my organisation that help us to overcome exceptional situations. (IT2).	Trust 2	0.901	80.746		
	Top management never put their success ahead of that of the employees (IT3).	Trust 3	0.773	17.599		
	Information I get in my organisation is up to date (IT4)	Trust 4	0.904	75.502		
<b>EP</b>	Compared with other establishments in the same industry how you would assess your employee productivity?	EP1	0.669	21.744	0.920	0.698
	Average absentee rates are reduced in last 12 months as compared to other organisations.	EP2	0.659	49.815		
	Change in employee productivity over the last 12 months.	EP3	0.581	82.159		
	Change in employee productivity over the last 2 years.	EP4	0.774	32.862		
	Change in employee productivity over the last 3 years.	EP5	0.857	27.965		

Note. EHRMP=e-HRM practices; Trust=impersonal trust; EP=Employee productivity; Org age=Organisational age; Org size=Organisational size; (CR=composite reliability; AVE=average variance extracted.



Table 3 Cross-loading of latent variable items

	<b>EHRMP</b>	<b>Trust</b>	<b>EP</b>	<b>Org_age</b>	<b>Org_size</b>
EHRMP1	<b>0.669476</b>	0.342500	0.307744	-0.241496	0.046851
EHRMP2	<b>0.658753</b>	0.303654	0.277460	-0.066898	-0.005098
EHRMP3	<b>0.580813</b>	0.124941	0.270796	0.063432	-0.041777
EHRMP4	<b>0.774012</b>	0.476033	0.539905	-0.024846	-0.053989
EHRMP5	<b>0.857391</b>	0.455804	0.523592	-0.142086	0.030071
EHRMP6	<b>0.689535</b>	0.397046	0.330898	-0.107513	0.021512
EHRMP7	<b>0.704966</b>	0.532484	0.329917	-0.099434	-0.030509
Trust1	0.430200	<b>0.772886</b>	0.567890	-0.124029	-0.077460
Trust2	0.536468	<b>0.903557</b>	0.561325	-0.131078	0.070628
Trust3	0.502076	<b>0.901701</b>	0.439042	-0.094201	0.000094
Trust4	0.481690	<b>0.900879</b>	0.405257	-0.158947	-0.01444
EP1	0.309818	0.372779	<b>0.753504</b>	-0.094156	-0.013829
EP2	0.530031	0.510192	<b>0.851165</b>	-0.244644	-0.031314
EP3	0.574659	0.480313	<b>0.901401</b>	-0.134603	-0.037935
EP4	0.447786	0.562281	<b>0.839696</b>	-0.136102	-0.071259
EP5	0.342729	0.438857	<b>0.824713</b>	-0.153850	-0.028566
Org_age (single item)	-0.132071	-0.145805	-0.187413	<b>1.000000</b>	-0.050189
Org_size (single item)	-0.006608	-0.003686	-0.045891	-0.050189	<b>1.000000</b>

Note. EHRMP= e-HRM practices; Trust=impersonal trust; EP=Employee productivity;

Org age= Organisational age; Org size=branch size.

Table 4 Fornell-Larker Criterion

Variable	EHRMP	Trust	EP
EHRMP	<b>0.709</b>		
Trust	0.562	<b>0.871</b>	
EP	0.543	0.573	<b>0.835</b>

Table 5 Hypothesis testing

Hypotheses	t-value	$\beta$	Significant hypothesised relation	Decision
H1	4.935	0.316	EHRMP-> EP	Accepted
H2	11.927	0.562	EHRMP-> Trust	Accepted
H3	6.067	0.382	Trust> EP	Accepted
Predictor variable	Endogenous variable	R <sup>2</sup>	Q <sup>2</sup>	
EHRMP	Trust	.316	.7597	
EHRMP, Trust, org_size, org_age	EP	.410	.5447	

Note: EHRMP = e-HRM practices' use; QHRS=HR service quality; EP=Employee productivity

Table 6 Testing Mediating Effect of Impersonal Trust

Hypothesis	Indirect relation	t-value	Indirect effect (a*b)	Total effect	VAF	Status
H4	EHRMP-> Trust	11.927	$\beta_2 = 0.214$	$\beta_1 = 0.530$	0.404	Partial mediation