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

DOI:
10.1108/MRR-02-2018-0094

Document Version
Accepted author manuscript

Link to publication record in Manchester Research Explorer

Citation for published version (APA):

Published in:
Management Research Review

Citing this paper
Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

General rights
Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Takedown policy
If you believe that this document breaches copyright please refer to the University of Manchester’s Takedown Procedures [http://man.ac.uk/04Y6Bo] or contact uml.scholarlycommunications@manchester.ac.uk providing relevant details, so we can investigate your claim.
Unveiling the Relationship between e-HRM, Impersonal Trust and Employee Productivity

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

http://mc.manuscriptcentral.com/mrr
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 (Tzafrir 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
HRM which is labour-intensive, towards a more technology-intensive, standardised, and efficient approach to HRM (Bondarouk, Harms, & Lepak, 2016; Iqbal et al., 2018; Parry & Tyson, 2011). e-HRM may, therefore, affect organisational trust because it affects employees and managers (Bissola and Imperatori, 2014), and can help to improve the relationship between employees and the HRM department (Bissola & Imperatori, 2014). The HRM literature suggests that impersonal trust has a positive effect on productivity and organisational performance (Katou, 2015; Vanhala & Dietz, 2015; Vanhala and Ritala, 2011). Although firms are increasingly using e-HRM, no studies have examined how e-HRM impacts employee productivity both directly and through its effect on organisational trust.

e-HRM is not just the ‘digitalisation’ of the HRM system. Studies that draw on social exchange theory argue that HRM practices influence employee attitudes; in particular, employees’ trust in the organisation is likely to be positively associated with their perceptions of the fairness of the HRM system. Therefore, trust is an important value-creating factor in the potential causal relationship between e-HRM and organisational outcomes, suggesting a mediating effect of organisational trust between e-HRM and employee productivity. However, there is a lack of empirical evidence whether e-HRM does actually influence impersonal trust. Therefore, this study contributes by examining the role, if any, of e-HRM in enhancing impersonal trust. Some recent e-HRM studies have stressed the importance of intervening variables to link e-HRM to various organisational outcomes (Bellou, 2016; Wahyudi and Park, 2014), including a potential mediating role for e-HRM (Vanhala and Ritala, 2016). We build on this work to assess any mediating role that impersonal trust may play between e-HRM and employee productivity. This paper, therefore, examines how e-HRM and impersonal trust influence strategic outcomes and
tries to un-lock the black box of HRM by identifying a theoretically and empirically compelling path through which e-HRM delivers value to the organisation via the mediator of impersonal trust.

**Literature Review**

*e-HRM definition*

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

*e-HRM and traditional HRM*

Bissola & Imperatori (2010) argued that e-HRM improves traditional HRM processes. Research suggests that e-HRM improves HR service quality (Bondarouk, Harms, & Lepak, 2016; Iqbal et al., 2018). e-HRM marks a shift from traditional labour-intensive practices to technology-
supported ones in which employees, using HRM software rather than HRM staff, perform a majority of operational HR activities (Parry and Tyson, 2011). It represents a potential shift towards a more strategic, unambiguous and integrated approach to HRM (Bondarouk, Harms, et al., 2017).

In the traditional HRM approach, HR department employees largely deliver and manage most HR services, while e-HRM enables the organisation to deliver HR services through information technology, enabling firms to involve line managers in HR activities to a greater extent and freeing HR professionals from administrative overload to focus on strategic activities (Bondarouk et al., 2017; Marler and Fisher, 2013). The primary changes brought by e-HRM may have significant implications that go far beyond operational efficiencies and extend to relational and transformational outcomes (Lengnick-Hall and Moritz, 2003), by, for instance, supporting internal customers’ personal and work life and by enhancing procedural justice (Bissola and Imperatori, 2014).

**Hypothesis Development**

HRM can play a vital role in improving firm performance (Jiang et al., 2012; Vanhala and Dietz, 2015). Moreover, e-HRM offers various value-creating opportunities to improve productivity (Bellou, 2016; Bondarouk, Harms, et al., 2017; Marler and Parry, 2016; Obeidat, 2016; Wahyudi and Park, 2014). Reputation and a trust-based employment relationship are imperative for an organisation to compete in developing economies (Bissola and Imperatori, 2014).
**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 (Vanhalal 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
trust in the organisation. Indeed, the perception of the clarity and openness of the HRM system, including key elements, such as performance and the appraisal system, directly influences impersonal trust because employees perceive that the firm has an accurate, reliable and transparent performance recognition system in place (Bissola and Imperatori, 2014).

By boosting the fair treatment of employees, e-HRM can lead to trust in organisational processes that, in turn, can enhance impersonal trust and improve organisational outcomes (Katou, 2013; Sankowska, 2013; Searle et al., 2011; Searle and Dietz, 2012). The increased use of technology, in general, enables employees to trust organisational procedures and systems (impersonal trust); more specifically, e-HRM can make HR procedures even clearer and more transparent as they can be made readily available on a digital repository to all employees (Bondarouk, Harms, et al., 2017). Bissola & Imperatori (2014) suggested that e-HRM influences procedural justice and employees’ trust in the HRM department. Based on AST theory, e-HRM is seen as a way to develop and maintain impersonal trust. Drawing on this material, we put forward our first hypothesis:

H1: There is a positive relationship between the use of e-HRM practices and impersonal trust.

Impersonal trust and employee productivity

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

**H2: There is a positive relationship between impersonal trust and employee productivity**

**e-HRM and perceived employee productivity**

Increases in productivity are often the chief motivation for companies to introduce information technology (Swierczek and Shrestha, 2003; Black and Lynch, 2001; Brynjolfsson and Young, 1996; Jalava and Pohjola, 2007; Qutaishat et al., 2012; Subriadi et al., 2013). Organisations invest in HRM systems to make effective use of their human capital and, thereby, to enhance employee productivity (Datta et al., 2005; Liao, Toya, Lepak, & Hong, 2009). Indeed, many

The AST theory provides a theoretical foundation for examining the impact of e-HRM on employee productivity. e-HRM systems offer employees opportunities to enhance their capabilities and contribute to the organisation’s success (Bissola and Imperatori, 2013; Bonaruk and Ruel, 2013; Marler and Fisher, 2013; Panos & Bellou, 2016; Snell and Dean, 1992). e-HRM also increases productivity through automation and replacing low-value administrative tasks with high value-added tasks (Marler and Parry, 2016). In other words, non-HRM employees can perform some routine HRM transactions themselves, such as changing their personal information and registering for training opportunities, without having to ‘go through’ a HR employee.

Research shows that the use of e-HRM practices can improve employee productivity (Lengnick-Hall, and Moritz, 2003; Foster, 2009). In comparison to traditional HRM approaches, e-HRM can help to streamline transactional HRM activities; speed up HR processes; improve communication; reduce the HR headcount; and capture, create and transfer some HR knowledge more accurately and speedily. These advantages can help to increase employee productivity (Foster, 2010; CedarCrestone, 2010, 2014; Lengnick-Hall and Moritz 2003; Marler and Parry, 2016; Martin, Reddington and Alexander, 2008; Parry, 2011). More broadly, e-HRM, by increasing transparency and clarity over HR policies, may help to improve employee satisfaction with HR and, in turn, lead to greater employee productivity. Indeed, improving employee
productivity is one of the main reasons why organisations introduce e-HRM (CedarCrestone, 2008). Thus, we hypothesise:

**H3. There is a positive relationship between e-HRM and employee productivity.**

**Intermediate effect of impersonal trust between e-HRM and employee productivity**

Impersonal trust may influence the relationship between e-HRM practices and various outcomes. The links between impersonal trust and HRM may be examined in multiple ways. For example, trust can be examined as a consequence of HRM practices (Vanhala and Ahteela, 2011) or trust can be used as antecedent to improved HRM and organisational outcomes (Aryee et al., 2002; Katou, 2013, 2015; Shockley-Zalabak et al., 2000). Social exchange theory argues that 1) high levels of trust between employees and firms have benefits for companies and 2) HR activities need to focus on the development of trust to enhance firms’ outcomes (Whitener, 1999). Impersonal trust also has been recognised as a key mediator between HRM and organisational outcomes. For example, Vanhala and Ritala (2016) recognised impersonal trust as a mediator between HRM and organisational outcomes. Based on social exchange theory, employees reciprocate the introduction of e-HRM, which often improves transparency and clarity, by demonstrating high levels of trust in their organisation and may become more productive.

Some recent e-HRM studies have stressed the importance of intervening variables to link e-HRM to various organisational outcomes (Panos & Bellou, 2016; Wahyudi and Park, 2014). Other research suggests that contingent variables are needed to explain the relationship between e-HRM and various organisational outcomes (Bondarouk and Ruel, 2013; Marler and Parry, 2016).
This study hypothesises that impersonal trust mediates rather than moderates the relationship between e-HRM and employee productivity.

\textit{H4: Impersonal trust mediates the relationship between e-HRM and employee productivity.}

Figure 1 combines this paper’s four hypotheses to provide the theoretical framework for this study.

\textbf{Methodology}

\textit{Context}

The context of the Pakistani banking sector is appropriate for this study. This sector has been characterised over the last few decades by de-regulation, technological changes and increases in competition. It comprises local and foreign-owned banks as well as privatised banks. Banking organisations of Pakistan represent 95 per cent of the country’s financial sector (World Economic Forum, 2009). The history of the banking sector of Pakistan can be categorised into pre-nationalisation, nationalisation, and privatisation stages. Privatisation increased the number of banks and state bank reforms have facilitated the entry of new banks into the sector and, hence, increased competition. As a result, banks started to emphasise more heavily their HRM practices to improve employees’ organisational trust and productivity in order to ensure they remained competitive. Research buttresses the view that HRM can, by improving organisational
trust, enhance employee performance in Pakistan (Ahmad et al., 2015; Khilji & Wang, 2006; Mahmood et al., 2014).

Economic crises in Pakistan have encouraged some firms to enhance their management practices (to try) to improve organisational performance, leading to the use of e-HRM both for relational and transformational outcomes. For instance, Iqbal and Mansoor (2016) noted that banking organisations in Pakistan have increased their use of e-HRM practices. Nasreen et al. (2016) argued that e-HRM in Pakistan is used to minimise recruitment costs. Iqbal et al. (2018a) found that firms in Pakistan have increasingly used e-HRM in an attempt to improve HR service quality and to make employees more productive. Moreover, Iqbal et al. (2018b) found a positive and significant relationship between e-HRM and employee productivity. Therefore, banking organisations in Pakistan have turned to e-HRM to boost productivity and maintain/improve their strengths in a more competitive market. There is some evidence to indicate that e-HRM has helped them to achieve their goals; however, how e-HRM enables them to improve their productivity remains unclear.

Sample

In order to benefit from single sector analysis, we decided to select our sample from the banking sector in Pakistan. Conducting research in multiple sectors with different competitive environments may, in some cases, lead to inappropriate findings, as companies in one industry may stress market-share, while those in another may prioritise profits, suggesting that single-industry studies are more appropriate and valid than multiple-industry ones for examining the
link between e-HRM and performance indicators, such as employee productivity (Khilji and Wang, 2006).

Our population consists of all the branch establishments of 17 private and privatised commercial banks that have been using e-HRM for at least the last two years. Our unit of analysis is the branch of the relevant banking organisation, as we seek to explore the links between e-HRM, impersonal trust and employee productivity. Keenoy (1999) and Khilji et al. (2006) support the assertion that the truth (about HRM) lies outside the HRM department. HR activities, including e-HRM, are delivered through HRM professionals, line managers, branch managers and information technology (Obeidat, 2016; Parry, 2011; Iqbal et al., 2018; Strohmeier, 2007). Therefore, we need to ensure that our data contain information from different groups and not just those within the HRM department (Ruël et al., 2004; p 365).

We collected the data using a self-administered questionnaire from branch managers and operational managers in bank branches. Using a random sampling approach, the study invited managers, both branch and operational managers, from 772 bank branches to participate in the research. Overall, we received completed and usable responses from 323 branches of commercial banks, resulting in a response rate of 42 per cent. Questionnaires were sent to each branch; therefore, the unit of analysis is the branch establishment. Only those organisations have been selected that used e-HRM for at least two years within and outside the HRM department for HRM activities. Studies suggest that two years of maturity creates an appropriate zone for e-HRM research, as respondents have a good understanding of e-HRM (Bondarouk, Harms, et al., 2017; Ruël et al., 2004). The majority of the respondents in the sampled banks have been
working in Pakistan for at least 20 years. On average, the branches in our sample had 11-20 employees. A simple majority of our respondents had a formal business education (48%), suggesting that our respondents will understand HRM policies and practices. Table 1 shows the correlations between our variables.

Table 1 about here

**Common method variance**

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

**Measures**

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

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

Mediating variable: impersonal trust

The study defines impersonal trust as an employee’s trust in ‘impersonal organizational 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, Puumalainen and Blomqvist, 2011: 486). Higher levels of impersonal trust are likely to reduce workplace conflict between employees and their organisation and to strengthen employee-employer relationships. Impersonal trust was measured through Vanhala et al.’s (2011) scale. This scale was specifically designed to assess impersonal phenomena of organisational trust and was developed through a systematic
review of the trust literature and an inductive examination of employee and employer perception regarding trust in firms. The participants were asked to report their perception regarding impersonal trust in their branches on a five-point Likert scale. Our measure of impersonal trust draws on Vanhala et al.’s (2011) scale. We did not retain all of the dimensions and items in that scale, as we focused on those dimensions most pertinent to the objectives of our study (organizing activities, technological reliability, fairness in HRM, and communication). Within these dimensions, we did not use all of the items due to low factor loading and cross-loading.

**Dependent variable**

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

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

**Empirical Results**

**Measurement model**

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

**Construct reliability**

The first criterion to evaluate our reflective outer model is *internal consistency* i.e. each set is supposed to be homogeneous as well as uni-dimensional (Hair et al., 2014; Vinzi et al., 2010). We do not use Cronbach $\alpha$ to estimate internal consistency because of its limitations. Instead, to assess internal consistency, we use composite reliability (CR) that reveals the degree to which indicators represent a common latent-construct (Hair et al., 2014). Table 2 shows that the composite reliability ranged from 0.846 to 0.920 for our proposed model, surpassing the proposed acceptable limit of CR > 0.70 (Hair et al., 2014; Sarstedt et al., 2014).
**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 (β)’, ‘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
productivity in private commercial banks in Pakistan. Table 5 demonstrates that the relationship between e-HRM and employee productivity was positive and significant ($\beta = 0.316; t = 4.935, p = ***$). It implies that e-HRM practices have a positive and direct impact on employee productivity. Thus, hypothesis 1 was confirmed.

H2 hypothesises that the greater use of e-HRM practices will lead to enhanced impersonal trust among internal customers of the firm. The hypothesised relationship between e-HRM practices and impersonal trust was significant ($\beta = 0.562; t = 11.927; p = ***$), indicating that e-HRM has a direct impact on increasing impersonal trust (IPT) in the organisation. Therefore, H2 is confirmed. H3 proposes that high impersonal trust (IPT) has a positive effect on employee productivity. Table 5 demonstrates a positive, significant and direct association between impersonal trust (IPT) and employee productivity ($\beta = 0.382; t = 6.067; p = ***$). Thus, H3 is accepted.

**Evaluating Mediating Relationship**

The study followed Hair et al. (2017) to examine the mediating effect of impersonal trust between e-HRM and employee productivity. By following Hair et al. (2017), the bootstrapping results demonstrate that the relationship between e-HRM practices and impersonal trust (mediator) was significant ($t=11.927$) and the relationship between impersonal trust and employee productivity ($t=6.067$) indicates that the indirect path is significant. Mediation exists when the coefficient of the independent variable is reduced or the independent variable becomes insignificant when the mediator is added to the model. The coefficient for the relationship
between e-HRM and employee productivity is reduced from .539 to .316, indicating that impersonal trust mediates the relationship between e-HRM and employee productivity.

Although some previous research has tested for a mediating effect, it has some limitations, such as failing to estimate the magnitude of the indirect effect in total effect as well as missing ‘some true mediation effect; i.e. type II errors’ (Hair et al., 2014; Zhao et al., 2010; Mackinnon et al., 2007). In this context, the VAF estimate is suggested by Hair et al. (2014, 2017) and Iqbal et al. (2018) for PLS-SEM. Therefore, the study used the VAF to assess the magnitude of indirect effect. Table 6 demonstrates that impersonal trust partially mediates the relationship between e-HRM and employee productivity as VAF is greater than 0.20. Thus H4 was accepted.

Table 6 about here

**Discussion and Conclusion**

The latest e-HRM review by Bondarouk et al., (2017) argued that e-HRM may enhance human resource effectiveness and contribute to the achievement of organisational goals. This study explored the role of e-HRM for impersonal trust and employee productivity. We developed four hypotheses to examine the roles of e-HRM and impersonal trust in influencing employee productivity.

The results of this study demonstrate that e-HRM positively and significantly influences impersonal trust. Various authors have argued that there is a deep connection between HRM practices and this form of trust. Research based on social exchange theory suggested that HRM
practices and employees’ perception of the HRM system influence employees’ attitudes. e-HRM practices would appear to have a positive role in developing and increasing organisational trust. This study, by analysing the data of the banking sector of Pakistan, validates the notion that e-HRM can act as a trust-building mechanism for organisations.

Many scholars from different disciplines seem to believe that trust offers several benefits to the firm. Building on this, we formulated H3 to examine whether impersonal trust influences employee productivity. Our results reveal that impersonal trust is positively associated with employee productivity.

In line with recent trend in HRM, this study theoretically and empirically developed the relationship between e-HRM and employee productivity through impersonal trust. The results of this study illustrate that the indirect relationship between relational e-HRM and employee productivity is statistically significant, suggesting that impersonal trust mediates the relationship between relational e-HRM and employee productivity; this is in line with social exchange theory. Hypothesis H4 was accepted and supports existing studies that demonstrate that impersonal phenomena of organisational trust mediate the relationship between HRM and organisational outcomes (Vanhala and Dietz, 2015; Vanhala and Ritala, 2016).

This study reveals that employees’ impersonal trust may be increased by using e-HRM practices because it is associated with a perception among employees that top management and HR managers will not do anything that is harmful for them. Believing that, employees do not resist the changes in the organisation but also accept changes and learn new technology and skills
resulting in improved employee productivity. It is one of the pioneer studies that has used impersonal phenomena of organisational trust in an e-HRM context. The findings of the study demonstrate an association between e-HRM and impersonal trust that suggests that relational e-HRM is a key way to potentially improve organisational trust.

This study tried to unlock the black box of HRM by identifying theoretically and empirically the path through which e-HRM may deliver value to the organisation via the mediator of impersonal trust. Various studies examine the mediating role of impersonal trust in a HRM context. For instance, Vanhala & Ritala (2016) empirically examined whether impersonal trust mediates the relationship between HRM practices and organisational innovativeness. However, the mediating effect of impersonal trust between e-HRM and employee productivity has not been tested before. This study, therefore, contributes to the HRM and growing e-HRM literature by establishing the relationship between impersonal trust and employee productivity.

**Theoretical contribution**

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

Practical implications

The results of the study suggest that employees in high-trust firms are more productive than those in low-trust ones. This study also provides evidence to HR practitioners that e-HRM may help to increase employees’ trust in organisational procedures and systems and thus can help to encourage higher productivity. Such value is hard to intimate and may act as a potential source of competitive advantage (Barney and Hansen, 1994; Vanhala & Dietz, 2015). e-HRM can enable HRM policies to become more transparent and credible to employees; this is likely to be especially important in Pakistan as some decisions by managers in organisations may not be aligned to company policies, potentially leading to dissatisfaction amongst employees (Ahmad and Allen, 2015). e-HRM can, therefore, represent a commitment by managers to providing unambiguous policies and decisions within the workplace, enhancing levels of trust.

Our findings also demonstrate that e-HRM and impersonal trust are linked to improved employee productivity in the commercial banks of Pakistan. The study provides valuable information to the practitioner by suggesting that e-HRM is associated with improved employee productivity when it enables an organisation and its HRM department to develop and maintain impersonal trust. Both e-HRM and impersonal trust are key predictors for improving employee
productivity. For HR managers who wish to develop impersonal trust, relational e-HRM practices are important for achieving such goals; this work provides a valuable insight to managers and policy makers about relational e-HRM is a value proposition for the firm. This study provides evidence to HR practitioners that e-HRM can be used as a tool that is associated with increased employee trust in HRM systems and, thus, is associated with higher levels of procedural justice and higher productivity in the banking sector in Pakistan.

It provides valuable information for policy makers that they can consider e-HRM as a tool to improve relational outcome for banking organisations. Zak (2017) reported that trust can enhance productivity up to 50 per cent. Improving efficiency is important for banks in Pakistan as competition in the industry has increased significantly. It can also help to use valuable resources more efficiently, enabling banks to focus on their key role of acting as intermediaries between borrowers and those who require funds to invest. In other words, improving the efficiency of Pakistani banks could have wider benefits. One of the causes of relatively poor economic growth in Pakistan in recent years has been low labour productivity (Ahmad and Allen, 2015). If e-HRM can help to improve employee productivity, the social and working conditions of many Pakistanis could be improved, aiding policy makers to achieve one of their key objectives. The banking industry is one of the sectors that policy makers see as crucial to enhancing productivity and economic growth (Ahmad and Allen, 2015). e-HRM could help to do that.
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.

References


Alfes, K., Shantz, A., & Truss, C. (2012). The link between perceived HRM practices,


Appendix

Figure 1: Theoretical framework
Table 1 Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>EHRMP</th>
<th>Trust</th>
<th>EP</th>
<th>Org_age</th>
<th>Org_size</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHRMP</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUST</td>
<td>0.5623</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP</td>
<td>0.5430</td>
<td>0.5734</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Org_age</td>
<td>-0.1321</td>
<td>-0.1458</td>
<td>-0.1874</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Org_size</td>
<td>-0.0066</td>
<td>-0.0037</td>
<td>-0.0459</td>
<td>-0.0502</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2 Constructs, Measures, Reliability and Convergent Validity

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

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

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

Note. EHRMP = e-HRM practices; Trust = impersonal trust; EP = Employee productivity; Org age = Organisational age; Org size = branch size.
Table 4 Fornell-Larker Criterion

<table>
<thead>
<tr>
<th>Variable</th>
<th>EHRMP</th>
<th>Trust</th>
<th>EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHRMP</td>
<td>0.709</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>0.562</td>
<td>0.871</td>
<td></td>
</tr>
<tr>
<td>EP</td>
<td>0.543</td>
<td>0.573</td>
<td>0.835</td>
</tr>
</tbody>
</table>

Table 5 Hypothesis testing

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>t-value</th>
<th>β</th>
<th>Significant hypothesised relation</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>4.935</td>
<td>0.316</td>
<td>EHRMP-&gt; EP</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2</td>
<td>11.927</td>
<td>0.562</td>
<td>EHRMP-&gt; Trust</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3</td>
<td>6.067</td>
<td>0.382</td>
<td>Trust&gt; EP</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Predictor variable: EHRMP, Trust, org_size, org_age

Endogenous variable: EP

R2 = .316, Q2 = .7597

Note: EHRMP = e-HRM practices’ use; QHRS=HR service quality; EP=Employee productivity
Table 6 Testing Mediating Effect of Impersonal Trust

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Indirect relation</th>
<th>t-value</th>
<th>Indirect effect (a*b)</th>
<th>Total effect</th>
<th>VAF</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4</td>
<td>EHRMP-&gt; Trust</td>
<td>11.927</td>
<td>(\beta_2 = 0.214)</td>
<td>(\beta I =0.530)</td>
<td>0.404</td>
<td>Partial mediation</td>
</tr>
</tbody>
</table>