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Impact of Innovation-Oriented Human Resource on Small and Medium Enterprises' Performance

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Abstract: This research paper aims to examine the impact of innovative HRM practices, including employee participation, performance appraisal, reward and compensation, recruitment and selection, and redeployment–retraining on firm performance. For this purpose, four different models are utilized to examine the impact of innovative HRM department practices on the performance of small and medium enterprises (SMEs) in a country. The dependent variable, firm performance, is proxified by different variables such as labor productivity, product innovation, process innovation, and marketing innovation. For empirical analysis, primary data are collected using a questionnaire. Estimation is conducted using ordinary least squares (OLS) and logit regression techniques. The estimated results indicate that most innovative HRM practices have a statistically significant impact on firm performance in terms of labor productivity, product, process, and marketing innovations. These results imply that SMEs in a country may observe the benefits of devoting greater attention to innovative HRM practices to achieve their future growth potential.

Keywords: human resource management; human factors; small and medium enterprises; innovation

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1. Introduction

For sustainability, the most valuable commodity for a firm is its labor force to obtain a competitive edge. Managing human resources is a highly difficult task compared to managing capital or technology. A successful human resource management (HRM) system is necessary for any business organization to manage its human resources effectively. Robust and creative HRM practices should support the business organization's HRM system. Business activities used to manage a group of human resources and ensure that those resources contribute to the attainment of organizational goals are alluded to as HRM practices.

HRM practices signify the business practices directed at managing the group of human resources and confirming that the resources are working towards the achievement of business objectives. Strong and innovative HRM practices should support the HRM system of the business organization. The fundamental objective of this paper is to examine the contribution of innovative HRM practices, including employee participation, performance appraisal, compensation, selection, training, and redeployment–retraining on firm performance.

In order to retain, attract, and add to shareholder value, the implementation of innovative HRM practices is needed. Productive staff retention issues continue to place stress on SME business organizations. Furthermore, turnover costs, i.e., costs related to recruitment and training have become a pressing management concern. Comprehensive research is required to identify key innovative HRM practices that can boost firm performance and employee satisfaction.

Innovation and well-organized human resources (HR) are the fundamental driving forces of growth in terms of productivity and sales performance of a business organization [1,2]. Schumpeter's research (1934, 1942) first examined the relationship between innovation and business success, and it remains an important theoretical and conceptual topic that has captivated the interest of researchers for many years. Turnover was affected by human resource management practices [3]. Another study reported a significant association between HR practices such as recruitment, training, participation, performance appraisal, and remuneration and firm performance [4]. Researchers spent considerable time studying this topic due to the importance of the policy-making process. However, a closer look at the literature reveals that the impact of innovations on firm performance is still inconclusive [5,6]. It is challenging to extrapolate the relationship between innovation and human resources across contexts and businesses due to its complicated and unique nature. In light of this, the present study examines this link using a special-survey-based dataset from a developing nation.

Innovation plays a critical role in the performance of firms, as it enables them to adapt to changing market conditions, respond to customer needs, and stay ahead of competitors. Sustainable innovation, in particular, can have a positive impact on a firm's performance by reducing costs, improving efficiency, and enhancing brand reputation. Several studies have shown that sustainable innovation positively affects a firm's financial performance. For example, a study by Alshehhi and colleagues [7] explores the impact of corporate sustainability on corporate financial performance. Similarly, a study by Sun and colleagues [8] investigates the impact of intelligent manufacturing (IM) on environmental, social, and governance (ESG) performance using data from 2149 listed manufacturing firms in China from 2009 to 2021. Moreover, sustainable innovation can also have a positive impact on a firm's non-financial performance measures, such as its brand reputation and employee satisfaction. For example, a study by Xu and colleagues [9] found that firms that implemented sustainable innovation practices had a stronger brand reputation and were more attractive to potential employees. In summary, innovation, particularly sustainable innovation, is critical to the performance of firms [10,11].

The HR-performance nexus has been the subject of extensive research in the field of human resource management, leading to the development of various theories and approaches. Some of the most prominent theories include the resource-based view (RBV), which emphasizes the role of human resources in creating and sustaining competitive advantage, and the human capital theory, which focuses on the importance of investing in employee development to enhance their skills and knowledge. In recent years, there has been a growing interest in the role of HR in driving innovation performance. This has led to the emergence of various approaches, such as the High-Performance Work System (HPWS), which aims to promote employee engagement and empowerment through the use of innovative HR practices such as performance management, training, and career development. The HPWS approach is grounded in the belief that by creating a work environment that encourages creativity and innovation, organizations can enhance their competitive advantage and achieve superior performance.

HR can contribute to innovation performance in several ways. First, by recruiting and selecting employees with the right skills and experience, organizations can build a talented and diverse workforce that is capable of generating new ideas and solutions. Second, by providing training and development opportunities, HR can help employees acquire the skills and knowledge necessary to innovate and create value. Third, by fostering a culture of collaboration and teamwork, HR can encourage employees to share their ideas and work

together to solve complex problems. Finally, by implementing performance management systems that reward innovation and creativity, HR can incentivize employees to contribute to the organization's innovation performance. Overall, the HR-performance nexus has led to a better understanding of the role of human resources in driving organizational performance, including innovation performance. By adopting innovative HR practices and approaches, organizations can build a workforce that is capable of generating new ideas, creating value, and sustaining a competitive advantage in today's rapidly changing business environment.

There is a sizable body of research on the effect of HRM practices on business performance HRM practices and innovation relationship in firms is growing as many researchers have inspected this area [12–16]. However, to the best of our knowledge, there is not much literature found in this direction. This research work tries to fill this gap by using the latest data. Additionally, the emphasis of the previous literature has been on addressing the problems of larger business organizations. However, the present study deals will small and medium enterprises. This study attempts to fill this research gap by providing empirical evidence of the impact of innovative HRM practices on SMEs' performance in Pakistan. Additionally, this study touches on several new, innovative HRM-related areas, such as innovative hiring practices, innovative retraining and redeployment practices, and innovative performance review practices. Simply put, this study attempts to determine whether specific innovative HRM practices bear a significant and stronger effect than others and whether synergies among such practices can improve organizational performance. This study is based on the following research objectives:

- To analyze the association between HRM department practices and firm performance.
- To investigate the impact of innovative recruitment practices, performance appraisal, and redeployment– retraining in improving the financial performance of SME firms.
- To observe the impact of reward and compensation practices of a given HRM department in the improvement of the retention rate of employees.

Business innovation and its impact on firm performance have been widely discussed topics over the last couple of decades. Researchers have employed different research models and statistical tools to examine this association from different perspectives. To the best of our knowledge, not many works and efforts are made which inspect the association between innovation-led HR policy and innovation-led strategy and innovation performance with suitable empirical evidence. This research work aims at filling this research gap by providing empirical evidence of innovative HRM practices' impact on SMEs' performance.

The rest of the paper is organized as follows. Section 2 provides the literature review related to this study. Section 3 describes the adopted methodology. Results are explained in Section 4, while the final section concludes this paper.

2. Literature Review

The empirical literature has sparked scholarly discussions on innovation and business performance, which appear to point in several directions [17]. Although Schumpeter's earlier research suggested that start-ups and small businesses were important sources of innovation [18], their later book Capitalism, Socialism, and Democracy, published in 1942, changed the focus to the competitive advantage of large firms over start-ups [19]. Numerous studies contend that development and change are essential for business growth in today's cutthroat markets. It is essential to comprehend innovation with respect to human resources in order to comprehend the theoretical underpinnings of research and development. Moreover, other researchers stated that good HR practices foster improved company performance and bring about high profitability [20,21]. According to The Oslo Manual, innovation is based on four types; product, process, marketing, and organization innovation. However, this study considers the product, process, and marketing innovation [22]. Furthermore, the impact of innovation activities on the firm performance is also discussed in the Oslo Manual [22]. The positive relationship between firm-level innovation and firm performance rests on the Schumpeter theory of innovation (1934) [18,19].

HRM practices have a significant impact on the business performance of small- and medium-sized enterprises (SMEs), as demonstrated by Pratibha and Katyayani [2]. The research by Bakator et al. [3] suggested a beneficial relationship between HRM practices and overall firm performance. Most of the articles published at the time suggest that there is unquestionably a connection between effective, innovative HRM practices and other firm performance metrics. A vast amount of research suggests that development and change are essential for business growth in today's increasingly competitive markets. It is essential to comprehend innovation in the context of human resources in order to comprehend the theoretical underpinnings of research and development.

Additionally, research conducted on the effects of innovation on the performance of Malaysian manufacturing SMEs found that process and product innovation positively impact firm performance [4]. Research has also shown that innovation significantly and favorably affects business or firm performance [5]. In addition, the study demonstrated how SMEs can boost their performance through increased product and process innovation. According to Calisken, Kehoe, and Wright, effective HR procedures boost business performance and lead to significant profitability [20,21]. Rousseau studied the relationship between innovation and company performance and concluded that combining product and process innovation results in better performance gains than product innovation alone [6]. Another interesting work by [23] presented findings that most manufacturing SMEs in Klang Valley have adopted eco-management innovation and eco-logistic innovation as crucial capabilities for their businesses during the pandemic. However, due to the challenges faced by these SMEs during the pandemic, eco-product innovation was found to have an insignificant relationship with sustainable business performance. Aljuboori and colleagues [24] employed a stratified sampling method wherein 262 participants' responses from the focused manufacturing firms were obtained and analyzed via the structural equation model (SEM) and resource-based view (RBV). The results show that the relationship between intellectual capital and firm performance is strengthened due to the mediation of innovation capability, thereby gaining higher competitive advantages. It was asserted that the present comprehensive analyses may offer useful information and guidance to the academics, owners/managers, and policymakers involving the impact of intellectual capital development towards improving the Malaysian SMEs performance.

Performance, compensation, and rewards at a company are all positively correlated [17]. Product innovation has a substantial and positive impact on annual sales growth, whereas process innovation is likely to have a significant negative impact on the annual sales growth or profitability of firms in Vietnam, Malaysia, and Indonesia. The findings show that introducing new products can improve a company's performance, but adopting new or improved methods can have a significant effect. Furthermore, compared to low- or medium-tech businesses, high-tech industries benefit more from product innovation in terms of business success. Process innovation may be detrimental to businesses engaged in low- or medium-tech sectors. The introduction of new products positively affects the firm's performance, according to Varis and Littunen [25]. Process innovation, as demonstrated by Murat and Baki, has positive effects on firm performance [26], including firm growth [27], firm productivity [28,29], as well as industrial development [30]. It was determined that compensation and rewards aid in the smooth and efficient operation of organizations, helping them achieve their objectives and boost business performance [18]. An attractive and good compensation package is important to motivate employees to increase their performance, resulting in increased organizational productivity/firm performance. Work was conducted on the connection between HRM practices and employee performance and the results report that the HRM practices such as reward and compensation, performance appraisal, employee involvement, training, and career planning have a positive impact on employee performance that will ultimately increase firm performance [19].

The componential theory of creativity, according to Amabile, is a thorough picture of the social and psychological components necessary for a person to generate creative work [31]. The argument is based on the definition of creativity as devising innovative

concepts or outcomes that are appropriate for a certain goal. This theory states that any creative response needs four components, three of which are internal to the individual (domain-relevant skills, creativity-relevant processes, and intrinsic task motivation), and one of which is external to the individual (the social environment in which the individual operates). Managers of organizations rely on the tools and techniques developed from this theory to stimulate innovation and creativity in their organizations Amabile claims that innovation is creativity plus implementation. Moreover, creativity is the production of novel ideas by individuals and innovation to the successful implementation of those ideas.

On the other hand, servant leadership theory is a leadership philosophy in which the leader's primary goal is to serve. In fact, it is a leadership exercise grounded on the credence that workers should be held as equals and have a say in the organization they work for [2,32]. Servant leadership is a leadership style that emphasizes serving others and prioritizing their needs, growth, and development. The concept of servant leadership was first introduced by Robert K. Greenleaf in 1970 [33], and has gained increasing attention in recent years as a viable approach to effective leadership. In terms of innovation and business performance, servant leadership has been shown to have a positive impact. When leaders prioritize the needs of their employees and focus on their growth and development, a more innovative and collaborative culture can be created. This can lead to increased creativity, improved problem-solving skills, and a greater willingness to take risks and experiment with new ideas.

The literature review showed that servant leadership can have a positive impact on HR innovation performance. For example, a study by Nathan et al. [34] found that servant leadership positively influenced HR innovation by fostering employee creativity, providing support for innovation, and promoting a positive organizational culture. Similarly, a study by Liden et al. [35] found that servant leadership is positively associated with employee innovation behavior and creativity.

Overall, the role of servant leadership in promoting HR innovation performance appears to be related to the ways in which it supports and empowers employees to contribute their unique skills and knowledge to the organization. By creating a culture of collaboration and trust, servant leadership can encourage employees to take risks, experiment with new ideas, and develop innovative approaches to HR practices and processes. Therefore, it can be argued that servant leadership plays a crucial role in facilitating HR innovation performance by empowering and engaging employees and creating a positive organizational culture that supports innovation. Several other studies [36–38] provide further evidence for the positive relationship between servant leadership and HR innovation performance and shed light on the underlying mechanisms and boundary conditions of this relationship.

Furthermore, when employees feel valued and supported, they are more likely to be engaged and motivated in their work, which can lead to improved performance and productivity. This, in turn, can lead to better business outcomes, such as increased revenue, profitability, and customer satisfaction. The servant leadership theory suggests that by prioritizing the needs of employees, leaders can create a more innovative, engaged, and productive workforce, which can ultimately lead to improved business performance.

Organizational Innovation [22] involves applying new methods to the organization's internal and external business practices. Varis and Littunen [25] claim that the success of a company is positively impacted by the launch of new items. Along with firm growth [26], firm productivity [28,29], and industrial development [30], process innovation genuinely has a positive effect on firm performance. According to Huselid, HRM practices positively affect firm performance by affecting work attachment, firm financial performance, and productivity. The paper made a significant contribution to the field of human resource management with its groundbreaking research on the link between HR practices and organizational performance. The findings of Huselid's seminal study continue to be cited as evidence of the importance of strategic HR practices in improving firm performance. According to Huselid, the adoption of high-performance work practices can have a significant impact on employee attitudes and behavior, ultimately leading to improved

organizational performance. His research challenged the prevailing view that HR practices were merely a cost center, demonstrating instead that they could generate significant returns for organizations that invest in them.

Most approaches presented in the literature focus on examining the input (HRM practices) and output (company performance) of HR systems, without necessarily understanding the underlying mechanisms that link the two. There are some standard dilemmas faced while studying the impact of HRM practices on company performance which are not covered in the literature very well.

Regarding the first dilemma of whether the impact of HRM practices is additive or configurational, research has shown that the impact of HRM practices is likely to be configurational, meaning that the effectiveness of HRM practices depends on their fit with other practices and the broader organizational context. For example, the impact of employee participation on performance may depend on whether other HRM practices, such as training and development, are also in place [39].

Regarding the second dilemma of whether the impact of HRM practices is universal or situational, research has shown that the effectiveness of HRM practices is likely to depend on the specific organizational context and business strategy. For example, a study by Huselid [40] found that the impact of HRM practices on performance varied depending on the industry and the level of competition.

Regarding the third dilemma of how to measure severity correctly and which practices considering and why, research has shown that there is no single "best" way to measure the impact of HRM practices on performance and that the specific measures used may depend on the research question and the organizational context. For example, measures of employee turnover may be appropriate for certain research questions, while measures of productivity or financial performance may be more appropriate for others [41].

Generally, firm performance is defined by sales per worker, innovative goods and services production, and different profitability ratios. While depending on the data availability, the performances of employees are defined by some Likert scale variables or a special kind of statistical index consisting of the number of errors, absents, and failures to meet deadlines [42]. All these studies show that the innovation-led-HR policy and strategy are vital in boosting the firm performance. These studies are either related to developed economies or other developing economies. No thoughtful effort has yet been made from the standpoint of Pakistan. This study contributes to the literature in numerous ways. For instance, it will confirm whether similar patterns exist in Pakistan as found in the existing literature for other countries. Furthermore, this study will generate a new dataset through a questionnaire-based comprehensive survey in the federal area and Rawalpindi city, Pakistan.

3. Research Methodology and Design

3.1. The Model

The impact of innovative HRM practices on business performance is seen as an independent variable in this study. The dependent variable in this study is firm performance. Productivity at work, sales per worker, product innovation, process innovation, and marketing innovation are some examples of proxy variables for firm success. In the study, control variables such as the firm's age and size are based on demographic parameters. Surveys (using a five-point Likert scale) and other factors are used to measure the bulk of the variables. Examples of quantitative factors are sales per employee, firm age, and business size. According to [43], organization innovation involves new practices, strategies, and marketing to the organization. Schumpeter (1934) [18,19], describes innovation as a new product, new markets, new production methods, and new system of organizing businesses. Changing the traditional management methods, practices and policies lead to improving the performance of the management [44].

Figure 1 provides a visual display of the research block of this study. It highlights that innovative HRM practices which include the innovative role of the human resource

department, innovative practices for recruitment, innovative practices for redeployment retraining, innovative practices for performance appraisals, innovative practices for reward and compensation, and types of business innovation impact on the firm performance in terms of labor productivity, product innovation, process innovation, and marketing innovation. These parameters were concluded after examining the related literature and were made on the basis of the hypotheses proposed later. The innovative role of the HRM department has been described by [45–49]. The innovative recruitment practices are explained by [50]. Further, the innovative redeployment–retraining practices are mentioned in [48,51]. Moreover, the literature that gives details about the innovative performance appraisal practices includes [52] and the innovative compensation and reward practices are deliberated by the research paper of [53]. The references related to labor productivity are [50,54] whereas those related to product innovation include [55,56]. For the process innovation, papers are [55,57–59], whereas for the marketing innovation, related literature includes [60–62].

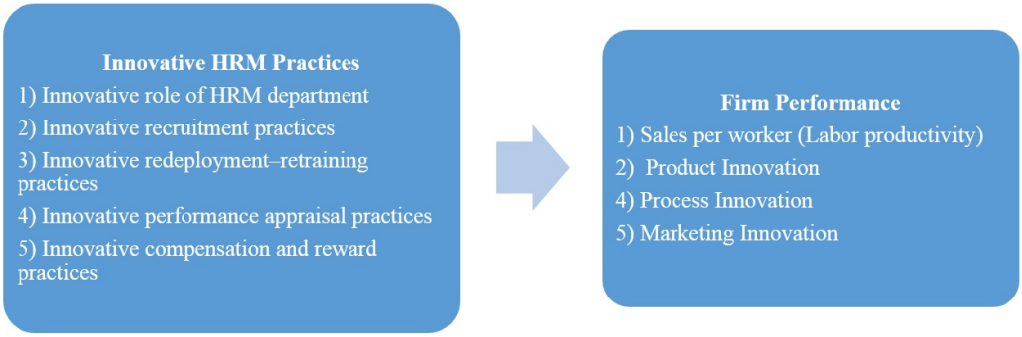

Figure 1. Block chart of proposed research parameters.

Traditional HR practices are often associated with conventional approaches to managing employees and include standard procedures for recruitment, selection, training, and compensation. Traditional HR practices are typically focused on ensuring compliance with policies and regulations and maintaining order and stability within the organization. These practices are often rigid and do not take into account the unique needs and aspirations of individual employees.

On the other hand, innovative HR practices are characterized by a more flexible and dynamic approach that emphasizes employee empowerment, engagement, and continuous learning and development. Innovative HR practices are designed to be responsive to changing organizational needs, including the need for greater agility, creativity, and innovation. This involves adopting more sophisticated recruitment and selection methods that take into account a broader range of factors, such as diversity and cultural fit, as well as the use of advanced technologies to facilitate communication, collaboration, and performance management.

Overall, the main difference between traditional and innovative HR practices lies in their underlying philosophy and approach to managing people. Traditional HR practices focus on control and compliance, whereas innovative HR practices prioritize employee engagement, empowerment, and continuous learning and development.

Traditional HR practices are often associated with a bureaucratic and hierarchical approach to managing people, with a focus on control and compliance. This approach typically involves rigid job descriptions, standardized performance metrics, and top-down decision-making processes. In traditional HR practices, employees are viewed as a means to an end, and their value is primarily based on their ability to perform their assigned tasks efficiently and effectively. In contrast, innovative HR practices are characterized by a more flexible and dynamic approach to managing people, with a focus on employee engagement, empowerment, and continuous learning and development. Innovative HR practices typically involve the use of cross-functional teams, open communication channels,

and collaborative decision-making processes. In this approach, employees are seen as valuable resources with unique skills and perspectives that can contribute to the overall success of the organization.

Several studies have shown that innovative HR practices can lead to improved employee engagement, job satisfaction, and performance. For example, a meta-analysis of 59 studies by [63] found that innovative HR practices are positively related to employee creativity, job satisfaction, and organizational commitment. A detailed work by Guest et al. [64] claims that organizations that emphasized employee engagement and development had higher levels of organizational performance and innovation.

In summary, the shift from traditional to innovative HR practices reflects a changing philosophy and approach to managing people that prioritizes employee engagement, empowerment, and continuous learning and development. This approach has been shown to lead to better organizational outcomes and can help organizations stay competitive in an increasingly complex and dynamic business environment.

Moreover, several studies [39–41,65,66] offer further insight into the philosophy and approach of traditional versus innovative HR practices, and the impact they can have on employee well-being, turnover, productivity, and financial performance.

3.2. Research Hypothesis

The research hypothesis of this study can be described as follows

Hypothesis 1. *Innovative HRM department practices have a significantly positive impact on the firm performance of SMEs in twin cities [4].*

Hypothesis 2. *Innovative recruitment practices have a significantly positive impact on the firm performance of SMEs in twin cities [50,67].*

Hypothesis 3. *Innovative redeployment–retraining practices have a significantly positive impact on the firm performance of SMEs in twin cities [68].*

Hypothesis 4. *Innovative performance appraisal has a significantly positive impact on the firm performance of SMEs in twin cities [69].*

Hypothesis 5. *Innovative compensation and reward practices are positively correlated with the firm performance of SMEs in twin cities [70,71].*

3.3. Methods and Materials

The analysis of this research is based on a deductive approach. Owners and employees of small and medium enterprises business organizations located in the twin cities are the units of analysis in this study. The Small & Medium Enterprise Development Authority (SMEDA) directory, RCCI, personal contacts, and colleagues help us to identify the SMEs in the twin cities. The selection of the firms is based on the convenience sampling technique as well as snowball technique was used for access to SMEs in twin cities. A sample size of 348 respondents was targeted through a simple sample size calculator where the level of confidence was 95%, the margin of error was 5% and the total population extracted from the list of SMEs of twin cities was 3650. To improve the response rate and decrease the margin of unanswered responses, the link of the questionnaire was forwarded to 410 employees of SMEs in twin cities with a response rate of 85%. To check the validity of the research hypothesis and find the answers to research questions, we used a statistical package called STATA. In total, three kinds of analyses were conducted: descriptive statistical analysis, correlation analysis, and regression analysis to handle the issue.

4. Results

4.1. Preliminary Statistics

As mentioned earlier, this study is based on the primary data in which questionnaires are distributed among selected SMEs and the responses are collected. For the purpose of simplicity of analysis and ease of response, the questionnaire survey is divided into five different segments

- Innovative role of the human resource department,
- Innovative practices for recruitment,
- Innovative practices for redeployment–retraining,
- Innovative practices for performance appraisals, and
- Innovative practices for reward and compensation and types of business innovation.

Table 1 provides the summary statistics of the questionnaire used in this study. For a more comprehensive picture, it provides the summary statistics of all questions individually where statistics include a number of observations, mean, standard deviation, minimum value, and maximum value of the responses. We asked seven questions from the respondents to define the innovative role of human resource management. Similarly, to define the innovative practices for recruitment, we asked three relevant questions from the respondents. Further, three questions were asked of the respondents to define innovative practices for redeployment–retraining. To define innovative practices for performance appraisals, we asked five relevant questions from the SME respondents. Likewise, innovative practices for reward and compensation are defined with the help of the answers received from the respondents on three different questions. Lastly, firm-level innovation is defined with the help of binary response questions. In this study, following Schumpeter's definition of innovation, we are defining firm-level innovation from three different perspectives

1. Product innovation,
2. Process innovation, and
3. Marketing innovation.

Product innovation is a binary variable that is equal to 1 if the firm introduced a new product the previous year, otherwise zero. Process innovation is also a binary variable which is equal to 1 if the firm introduced a new method of production the previous year, otherwise zero. Similarly, marketing innovation is also a binary variable which is equal to 1 if the firm introduced new packing or logo, or advertisement of the product the previous year, otherwise zero. Table 1 reports that a total of 348 responses from different SMEs were received by the researcher where some questions were asked in terms of Likert-scale response (i.e., responses ranged from 1 to 5) while others were asked in terms of Yes/No or binary response (i.e., responses ranked in terms of 0 or 1).

Table 1 provides information on the human resource management (HRM) practices that we considered in the empirical analysis of this study. After a keen evaluation of the existing studies and considering the suggested definitions and concepts of innovative HRM practices, this study takes into account the role of performance appraisal, retaining and redeployment, reward, and compensation, recruitment, and HRM department as important variables. Following earlier research, various Likert-scale type questions were asked of the respondents to quantify the above-mentioned HRM practices. To calculate the firm's score on the index of each variable, the rating of all questions was aggregated and averaged across the respondents from the SMEs.

Table 1. Summary of the questionnaire.

Items	Obs	Mean	Std. Dev.	Min.	Max.
Innovative role of the human resource department					
HRM department has played an important role in the success of this organization	348	4.1092	1.0435	1	5
HRM personnel in our organization are helpful and respected	348	3.5517	0.8657	1	5
HRM is proactive in this organization and anticipates changes and corporate dissatisfaction	348	3.4483	0.7744	1	5
HR managers are coaches rather than regulators	348	3.3879	0.8499	1	5
HRM is not about programs, it is about building an employee-employer relationship	348	3.6552	0.7679	1	5
HRM department benchmarks with global excellent practices	348	3.4167	0.8928	1	5
Overall, the HRM policies of the organization are fair	348	3.1839	1.0161	1	5
Innovative practices for recruitment					
Most of the persons recruited for supervisory and managerial levels are those with professional training and professional qualification such as an MBA	348	3.5057	0.8088	1	5
Information about job vacancies is easily available within the organization	348	3.4971	0.8870	1	5
In this organization, there is a formal induction, orientation, and familiarization process designed to help the new managerial recruits understand the organization	348	3.3937	0.8968	1	5
Innovative practices for redeployment–retraining					
Personnel returning from training are encouraged to use what they have learned in their training program	348	3.4224	0.9156	1	5
Coaching by boss/line manager helps a lot in increasing skills in this organization	348	3.5086	0.8538	1	5
Selection to special project teams motivates personnel in our organization to learn more	348	3.4741	0.8702	1	5
Innovative practices for performance appraisals					
Managerial personnel are allowed to challenge or appeal appraisal decisions made by superiors	348	3.3736	0.9565	1	5
People management skills are important in performance appraisal	348	3.6178	0.8354	1	5
The personnel department has provided all staff a clear explanation of the policy and how it is implemented	348	3.3793	0.9721	1	5
Ranking/grading in performance appraisal directly relates to performance at work	348	3.4282	0.9470	1	5
The performance appraisal system has enhanced role clarity in the organization	348	3.4598	0.9180	1	5
Innovative practices for reward and compensation					
Usually, in this organization, there is flexibility to work flexible hours	348	3.3247	0.9903	1	5
The rewards received are directly related to the performance and contribution at work	348	3.4138	1.0135	1	5
This organization provides a clear explanation of the remuneration policy and how it is to be implemented	348	3.3448	0.9400	1	5
Types of business innovation					
Product Innovation	348	0.3621	0.4813	0	1
Process Innovation	348	0.3448	0.4760	0	1
Marketing Innovation	348	0.3391	0.4741	0	1

Table 2 provides the reliability test scores of the indices used in this study to define different HRM practices. As mentioned earlier, different questions are used to define a specific HRM practice. These questions are Likert-scale in nature. In other words, the questions were anonymously rated by the participants on a 5-point Likert scale where 5 represents strongly agree with the question and 1 represents strongly disagree with the particular question. Each rating was done in relation to the particular indicator of the HRM practice of the specific SMEs. According to basic statistics, a composite scale variable can be formed with the use of Likert-scale variables. As in our case, the statement in each question is assumed to represent an aspect of the particular HRM practice. We combined different questions to define a particular HRM practice. In other words, we construct composite scale HRM variables that include several Likert-scale items to form the index. To check the reliability or internal consistency of the composite index, Cronbach's alpha is the most common measure. It is extensively used by researchers when several Likert-scale questions in a survey form a scale and we wish to assess if the scale is reliable or not. The value of Cronbach's alpha ranges between 0 and 1. For example, the 'innovative role of human resource department' variable is defined with 7 questions all asking different things, but when combined as a composite it provides the overall picture of the variable.

Table 2 provides the Cronbach's alpha values of the composite scores of our HRM practice variables which is a convenient method to analyze the internal consistency or reliability of the composite score. Following Cronbach's Alpha interpretation table, 'innovative role of human resource department' Cronbach's alpha score is 0.77 which infers that the internal reliability is good. Similarly, the composite scale of 'Innovative practices for recruitment' reports that Cronbach's alpha score is 0.70 which infers that the internal reliability is acceptable. The composite scale of 'innovative practices for redeployment retaining' reports that Cronbach's alpha score is 0.70 which infers that internal reliability is also acceptable. The composite scale of 'innovative practices for performance appraisals' reports that Cronbach's alpha score is 0.79 which infers that the internal reliability is very good. Likewise, the composite scale of 'innovative practices for reward and compensation' reports that Cronbach's alpha score is 0.75 which infers that the internal reliability is good. To sum up, all composite scale variables of HRM practices in Table 2 report that there is no problem with the internal reliability of variables.

Table 2. Reliability tests.

Item	Number of Items in Scale	Cronbach's Alpha
Innovative role of the human resource department	7	0.77
Innovative practices for recruitment	3	0.70
Innovative practices for redeployment–retraining	3	0.70
Innovative practices for performance appraisals	5	0.79
Innovative practices for reward and compensation	3	0.75

Descriptive statistics is a convenient method that helps to describe and summarize the basic features of the dataset. We discuss two types of descriptive statistics here which include the measure of central tendency and the measure of dispersion. The measure of central tendency measures the average value of the variable which is denoted by the mean in Table 3, i.e., 'describes the sample with a single value that represents the center of the data'. While the measure of dispersion measures the diffusion or spreads in the data of a variable which is denoted by the standard deviation in Table 3. Additionally, the minimum and maximum values of all variables show the range of the variables.

Table 3. Descriptive statistics.

Items	Obs	Mean	Std. Dev.	Min.	Max.
Innovative role of Human Resource Department	348	3.5361	0.5739	1.571	5.000
Innovative practices for recruitment	348	3.4655	0.6558	1.000	5.000
Innovative practices for redeployment–retraining	348	3.4684	0.6953	1.000	5.000
Innovative practices for performance appraisals	348	3.4517	0.6779	1.000	4.800
Innovative practices for reward and compensation	348	3.3611	0.7960	1.000	5.000
Product Innovation	348	0.3621	0.4813	0.000	1.000
Process Innovation	348	0.4856	0.5005	0.000	1.000
Marketing Innovation	348	0.5057	0.5007	0.000	1.000
Labour Productivity	348	2.3188	0.3515	1.382	3.837
Age of the Firm	348	25.9684	11.0384	0.000	60.00
Size of the Firm (log)	348	3.0765	0.1630	2.699	3.299

According to Table 4, different study variables have different correlations with each other. The innovative role of the HR department and innovative practices for performance appraisals has a statistically significant and positive correlation with the labor productivity of an organization. However, the innovative practices for recruitment, innovative practices for redeployment–retraining, and innovative practices for reward and compensation also have a statistically significant but negative correlation with the labor productivity variable. Likewise, the product innovation variable has a positive and statistically significant correlation with innovative practices for recruitment, performance appraisals, and rewards and compensation. Process innovation has a negative association with the majority of innovation-related HR variables. The remaining variables show mixed correlation coefficients with one another.

According to Table 4, different variables of the study have different kinds of correlations with each other. The innovative role of the HR department and innovative practices for performance appraisals has a statistically significant and positive correlation with the labor productivity of an organization. However, the innovative practices for recruitment, innovative practices for redeployment–retraining, and innovative practices for reward and compensation also have a statistically significant but negative correlation with the labor productivity variable. Likewise, the product innovation variable has a positive and statistically significant correlation with innovative practices for recruitment, innovative practices for performance appraisals, and innovative practices for reward and compensation. Process innovation has a negative association with the majority of innovation-related HR variables. The remaining variables show mixed correlation coefficients with one another.

Table 4. Correlation matrix of different variables.

Variable Name	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Innovative role of Human Resource Department	1										
(2) Innovative practices for recruitment	0.6362 *	1									
(3) Innovative practices for redeployment–retraining	0.6306 *	0.6201 *	1								
(4) Innovative practices for performance appraisals	0.6633 *	0.5986 *	0.7000 *	1							
(5) Innovative practices for reward and compensation	0.5849 *	0.5180 *	0.5943 *	0.7002 *	1						
(6) Product Innovation	0.0643	0.1431 *	0.086	0.1244 *	0.1492 *	1					
(7) Process Innovation	0.019	−0.0498	−0.1393 *	−0.1320 *	−0.1232 *	−0.086	1				
(8) Marketing Innovation	−0.0638	0.0035	−0.1057 *	0.0110	0.0177	0.087	0.0061	1			
(9) Labour Productivity	0.2519 *	−0.1324 *	−0.2016 *	0.1350 *	−0.2236 *	0.0444	0.1676 *	−0.0146	1		
(10) Age of the Firm	0.1709 *	0.1801 *	0.1809 *	0.1893 *	0.2030 *	−0.0038	0.0654	−0.0315	0.1601 *	1	
(11) Size of the Firm (log)	−0.0339	−0.0219	−0.0784	−0.023	−0.0221	0.0913	−0.0025	0.0219	0.078	−0.0418	1

Note: * represents significant at 10% level of significance.

4.2. Survey Results & Key Technologies

Table 5 provides the results of our first econometrical setting which examines how innovation-related human resource department practices influence the labor productivity of SME organizations. The dependent variable of this specification is the labor productivity of the SMEs which is defined as the total sales of the firm divided by the total number of employees. The independent variables of the model include the five innovative HRM practices, while the control variables include the age of the firm and the size of the firm. The fundamental objective of this table is to analyze how different kinds of innovative practices of the HR department affect labor productivity after incorporating a number of control variables. From Model 1 to Model 7, we increase one variable at a time to check how the signs of coefficients react with the addition of another variable. Nowadays, this is a commonly used practice by researchers to add one variable at once to verify how robust and reliable results one can obtain. In other words, it verifies that the coefficient signs and significance are not obtained by chance. For conciseness and simplicity, we will interpret only model 7 here. Firm size and age can affect the relationship between HR performance and firm performance in several ways. First, larger firms tend to have more complex HR systems, with a greater emphasis on formal policies and procedures. This may make it more difficult to implement innovative HR practices that are necessary to drive performance, such as performance management systems that incentivize creativity and innovation. However, larger firms may also have more resources to invest in HR development and training, which can enhance employee skills and contribute to higher levels of innovation.

Second, younger firms may be more agile and adaptable, making it easier to implement innovative HR practices that can drive performance. These firms may also have a higher risk tolerance, which can facilitate experimentation and innovation. However, younger firms may also face resource constraints that limit their ability to invest in HR development and training. Third, the relationship between HR performance and firm performance may be influenced by the stage of the firm's life cycle. For example, in the early stages of a firm's life cycle, when the focus is on growth and innovation, HR practices that encourage creativity and innovation may be more critical. In later stages, when the focus is on consolidation and efficiency, HR practices that emphasize performance management and accountability may be more important.

Overall, the relationship between HR performance and firm performance is complex and can be influenced by a range of factors, including firm size, age, and stage of the life cycle. By understanding the unique challenges and opportunities associated with these factors, organizations can develop HR strategies that are tailored to their specific needs and objectives, and that contribute to a sustainable competitive advantage.

Model 7 in Table 5 reports that the composite scale 'innovative role of human resource department' has a statistically significant and positive impact on the labor productivity of SMEs. In other words, if the innovative role of the human resource department increases by 1 unit then the labor productivity of that SME will increase by 0.153. This finding is statistically significant at a 1% level of significance. Model 7 further reveals that the 'innovative practices for recruitment' variable have no statistically significant impact on the labor productivity of the SMEs. Additionally, results report that 'innovative practices for redeployment retraining' and 'innovative practices for reward and compensation' have a negative impact on the labor productivity of SMEs in Pakistan. These findings are in line with several earlier studies on the same subject. However, the composite variable 'innovative practices for performance appraisals' is found to have a statistically significant and positive impact on labor productivity. So, Table 5 reports that some innovative HRM practices have positive impacts on labor productivity while others have a negative impact. These findings are statistically significant at conventional levels of significance. As far as control variables are concerned, the age of the firm has a statistically significant and positive impact on the labor productivity of SMEs. This infers that the more experienced firms have higher output per worker due to a progressive enhancement of the managerial factors with

the passage of time. These results are in line with a number of existing studies [72–76]. Likewise, the size of the firm also has a statistically significant and positive impact on labor productivity. If firm size increases by 1 unit, then labor productivity increases by 0.152 units. This suggests that a higher number of employees plays an essential role in boosting the productivity of SME firms in the understudied area. Similar results are also reported by several researchers [77–79].

However, there is another issue referred to as Common method variance (CMV) which is the amount of spurious correlation between variables that are created by using the same method, often a survey, to measure each variable. CMV may lead to erroneous conclusions about relationships between variables by inflating or deflating findings. Findings suggest that common method variance, specifically single-source bias, resulted in the inability to identify hypothesized constructs statistically. Additional information is needed to identify valid instruments and an effective collection method for assessment. The best way to avoid or minimize any potential CMV bias is to collect measures for different constructs from different sources. Ideally, the dependent variable(s) are collected from a different source than the independent variables are collected from.

Table 5. Ordinary least squares estimation (dependent variable = labor productivity).

Variable Names	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Independent Variables							
Innovative role of Human Resource Department	0.1543 ***	0.1725 ***	0.1478 ***	0.1686 ***	0.1514 ***	0.1536 ***	0.1532 ***
	(0.0319)	(0.0413)	(0.0448)	(0.0473)	(0.0475)	(0.0463)	(0.0462)
Innovative practices for recruitment		0.0251	0.0451	0.0366	0.0421	0.0340	0.0327
		(0.0362)	(0.0388)	(0.0392)	(0.0390)	(0.0381)	(0.0381)
Innovative practices for redeployment–retraining			−0.0513 *	−0.0744 **	−0.0620 *	−0.0665 **	−0.0618 *
			(0.0364)	(0.0401)	(0.0401)	(0.0391)	(0.0392)
Innovative practices for performance appraisals				0.0570 *	0.1023 **	0.0988 **	0.0969 **
				(0.0417)	(0.0453)	(0.0442)	(0.0441)
Innovative practices for reward and compensation					−0.0817 **	−0.0928 ***	−0.0932 ***
					(0.0331)	(0.0324)	(0.0324)
Control Variables							
Age of the Firm						0.0071 ***	0.0071 ***
						(0.0016)	(0.0016)
Size of the Firm (log)							0.1515 *
							(0.1088)
Constant	2.8643 ***	2.8419 ***	2.8634 ***	2.8499 ***	2.8447 ***	2.7619 ***	2.2887 ***
	(0.1141)	(0.1187)	(0.1195)	(0.1198)	(0.1189)	(0.1176)	(0.3597)
Number of Observations	348	348	348	348	348	348	348
Adjusted R-Squared	0.070	0.070	0.0750	0.100	0.120	0.150	0.210

Note: Standard errors are in parentheses. *** represents significant at 1%, ** represents significant at 5%, and * represents significant at 10% level of significance.

As mentioned earlier, logistic regression is a suitable regression analysis to perform when the dependent variable of the model is binary or dichotomous in nature as described

by Hamel [80]. We opt for this technique in our next specification because the dependent variable is product innovation which is a binary variable. Table 6 reports the findings of our second econometrical setting which investigates how innovation-related HR department practices affect the product innovation of SME organizations. The dependent variable of this specification is the product innovation of the SMEs which is defined as a binary variable. It takes the value equal to 1 if the SMEs introduced any new product or significantly improved version of an existing product in the last 3 years, otherwise zero. Three years does not mean our data is time series in nature. Following existing practices reported in the literature, we asked the respondents for a three-year period because innovation is not a process that can happen instantaneously. It takes some time for an innovative product to adjust within a business. The independent variables of the model include the five innovative HRM practices, while the control variables include the age of the firm and the size of the firm. The prime goal of this specification is to analyze how different kinds of innovative practices of the HR department are affecting the product innovation of SMEs after controlling for a number of variables. Table 6 also provides results of 7 different models labeled as Model 8 to Model 14. Model 14 considers all variables at once to check the impact of innovative practices of the HR department on the product innovation of SMEs. From Model 8 to Model 14, we increase one variable at a time to check how the signs of our coefficients react with the inclusion of additional variables.

Table 6. Logit model estimation (dependent variable = labor productivity).

Variable Names	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Independent Variables							
Innovative role of Human Resource Department	0.2398	−0.1635	−0.1896	−0.3292	−0.4167 *	−0.4109 *	−0.4064 *
	(0.2006)	(0.2587)	(0.2796)	(0.2991)	(0.3086)	(0.3073)	(0.3072)
Innovative practices for recruitment		0.5801 **	0.5595 **	0.5123 **	0.4968 **	0.5058 **	0.5011 **
		(0.2346)	(0.2490)	(0.2546)	(0.2581)	(0.2578)	(0.2579)
Innovative practices for redeployment–retraining			0.0562	−0.1018	−0.1500	−0.1478	−0.1122
			(0.2276)	(0.2556)	(0.2610)	(0.2605)	(0.2609)
Innovative practices for performance appraisals				0.3835 *	0.1814	0.1837	0.1717
				(0.2689)	(0.2956)	(0.2946)	(0.2932)
Innovative practices for reward and compensation					0.3683 *	0.3776 *	0.3726 **
					(0.2158)	(0.2157)	(0.2152)
Control Variables							
Age of the Firm						−0.0073	−0.0067
						(0.0104)	(0.0105)
Size of the Firm (log)							1.2404 **
							(0.7257)
Constant	−1.417 **	−2.0148 ***	−2.0462 ***	−2.1699 ***	−2.1869 ***	−2.0954 ***	−5.9987 **
	(0.7229)	(0.7868)	(0.7992)	(0.8112)	(0.8200)	(0.8283)	(2.4413)
Number of Observations	348	348	348	348 348		348	348
Log likelihood	−227.07	−223.87	−223.84	−222.79	−221.29	−221.05	−219.56
Pseudo R2	0.32	0.20	0.47	0.40	0.24	0.30	0.37

Note: Standard errors are in parentheses. *** represents significant at 1%, ** represents significant at 5%, and * represents significant at 10% level of significance.

Table 6 reveals that innovative practices for recruitment have a statistically significant and positive impact on the production of novel and innovative products. The coefficient indicates that an increase in innovative practices for recruitment increases the likelihood of producing innovative products by 0.501. Results further report that the innovative role of the HR department has a negative impact on the SMEs' probability of product innovation. However, two important independent variables 'innovative practices for redeployment retraining' and 'innovative practices for performance appraisals' are found statistically insignificant which means both play no role in the production of innovative products. This research further empirically reports that innovative practices for reward and compensation play an essential role in product innovation because the coefficient of this variable is big and statistically significant at a 5% level of significance. From the set of control variables, Table 6 reports that the age of the firm is not playing any role in the product innovation process. However, we found that firm size has a significant impact on product innovation which is confirming the Schumpeterian Hypothesis *size of the firm plays a key role in the firm-level innovation. Larger firms have a greater propensity to engage in innovation and produce innovative products*. These findings can be verified by several of the existing studies on firm-level innovation [81–84].

Table 7 presents the findings of our third econometrical setting which examines how innovation-related HR department practices affect the process innovation of SME organizations. The dependent variable of this specification is the process innovation of the SMEs which is defined as a binary variable. It takes the value equal to 1 if the SMEs introduced any new or significantly improved method of production in the last 3 years, otherwise zero. Logistic regression is suitable to perform analysis when the dependent variable of the model is binary or dichotomous in nature. The independent variables of the model are 5 innovative HRM practices. While the control variables include the age of the firm and the size of the firm. The key aim of this specification is to analyze how different kinds of innovative practices of the HR department are affecting the process innovation of SMEs after controlling for a number of variables. Table 7 also provides results of 7 different models labeled as Model 15 to Model 21. Model 21 is considering all variables at once to check the impact of innovative practices of the HR department on the process innovation of SMEs. From Model 15 to Model 21, we increase one variable at a time to check how the signs of our coefficients react with the inclusion of additional variables.

The last specification of our study deals with the marketing innovation analysis. The dependent variable of this specification is the marketing innovation of the SMEs which is defined as a binary variable. It takes the value equal to 1 if the SMEs introduced a new marketing method involving significant changes in product design or packaging, product placement, product promotion, or pricing within the last three years, otherwise zero. The independent variables of the model include the 5 innovative HRM practices. While the control variables include the age of the firm and the size of the firm. The purpose of this description is to evaluate how different kinds of innovative practices of the HR department are affecting the marketing innovation of SMEs after controlling for a number of variables. Table 8 also provides results of 7 different models labeled as Model 22 to Model 28. Model 22 is showing the impact of 1st independent variable on the marketing innovation of SMEs. Model 28 is considering all variables at once to check the impact of innovative practices of the HR department on the marketing innovation of SMEs. From Model 22 to Model 28, we increase one variable at a time to check how the signs of our coefficients react with the inclusion of additional variables.

Table 7. Logit model estimation (dependent variable = process innovation).

Variable Names	Model 15	Model 16	Model 17	Model 18	Model 19	Model 20	Model 21
Independent Variables							
Innovative role of Human Resource Department	−0.0662	0.0749	0.4101 *	0.6282 *	0.6943 **	0.6771 **	0.7203 **
	(0.1872)	(0.2434)	(0.2772)	(0.3031)	(0.3116)	(0.3124)	(0.3139)
Innovative practices for recruitment		−0.1943	0.0612	0.1621	0.1826	0.1499	0.1306
		(0.2133)	(0.2357)	(0.2432)	(0.2446)	(0.2457)	(0.2475)
Innovative practices for redeployment–retraining			−0.6742 ***	−0.5195 **	−0.4980 **	−0.5017 **	−0.4592 **
			(0.2362)	(0.2530)	(0.2549)	(0.2556)	(0.2572)
Innovative practices for performance appraisals				−0.5079 **	−0.3918 *	−0.3873 *	−0.4448 *
				(0.2664)	(0.2862)	(0.2854)	(0.2876)
Innovative practices for reward and compensation					−0.2269	−0.2545	−0.2596
					(0.2041)	(0.2051)	(0.2060)
Control Variables							
Age of the Firm						0.0179 **	0.0188 **
						(0.0104)	(0.0105)
Size of the Firm (log)							−1.2738 **
							(0.6669)
Constant	0.1767	0.3507	0.6207	0.7201	0.7027	0.4988	4.3523 **
	(0.6705)	(0.6989)	(0.7235)	(0.7281)	(0.7307)	(0.7393)	(2.1520)
Number of Observations	348	348	348	348	348	348	348
Log likelihood	−241.01	−240.59	−236.13	−234.25	−233.63	−232.14	−230.30
Pseudo R2	0.03	0.20	0.21	0.29	0.31	0.38	0.47

Note: Standard errors are in parentheses. *** represents significant at 1%, ** represents significant at 5%, and * represents significant at 10% level of significance.

Results reported in Table 8 indicate that the innovative role of the HR department has a negative impact on the SMEs' probability of marketing innovation. It further highlights that the marketing innovation of SMEs is highly influenced by the two innovative practices of the HR department which include 'innovative practices for recruitment' and 'innovative practices for performance appraisals'. The coefficients of both variables indicate positive signs and are statistically significant at 10% and 5% levels of significance, respectively. It infers those innovative practices for performance appraisal and innovative recruitment practices play a vital role in producing marketing innovations in SMEs of a third-world country. However, the 'innovative practices for redeployment retraining' variable is found to have a statistically significant but negative impact on marketing innovation. This tells us that innovation in redeployment–retraining discourages SMEs to conduct marketing innovations. This study also reveals that 'innovative practices for reward and compensation' play no role in the marketing innovation of SMEs. Moreover, the age of the firm and the size of the firm also plays no role in the marketing innovation of SMEs. Some of these findings are in line with the existing literature.

Table 8. Logit model estimation (dependent variable = marketing innovation).

Variable Names	Model 22	Model 23	Model 24	Model 25	Model 26	Model 27	Model 28
Independent Variables							
Innovative role of Human Resource Department	−0.2241	−0.3923 *	−0.1677	−0.3814 *	−0.4258 *	−0.4246 *	−0.4244 *
	(0.1890)	(0.2472)	(0.2707)	(0.2869)	(0.2902)	(0.2905)	(0.2905)
Innovative practices for recruitment		0.2296	0.4163 **	0.3374 *	0.3246 *	0.3316 *	0.3310 *
		(0.2151)	(0.2356)	(0.2384)	(0.2388)	(0.2391)	(0.2392)
Innovative practices for redeployment–retraining			−0.4709 **	−0.6943 ***	−0.7285 ***	−0.7256 ***	−0.7236 ***
			(0.2267)	(0.2480)	(0.2510)	(0.2513)	(0.2522)
Innovative practices for performance appraisals				0.5518 **	0.4436 *	0.4469 **	0.4460 **
				(0.2565)	(0.2784)	(0.2785)	(0.2786)
Innovative practices for reward and compensation					0.2016	0.2111	0.2109
					(0.2013)	(0.2020)	(0.2020)
Control Variables							
Age of the Firm						−0.0057	−0.0057
						(0.0102)	(0.0102)
Size of the Firm (log)							0.0596
							(0.6744)
Constant	0.8158	0.6148	0.8080	0.7074	0.7231	0.7902	0.6045
	(0.6776)	(0.7028)	(0.7181)	(0.7300)	(0.7312)	(0.7417)	(2.2285)
Number of Observations	348	348	348	348	348	348	348
Log likelihood	−240.48	−239.91	−237.63	−235.26	−234.76	−234.60	−234.59
Pseudo R2	0.29	0.53	0.20	0.25	0.29	0.28	0.30

Note: Standard errors are in parentheses. *** represents significant at 1%, ** represents significant at 5%, and * represents significant at 10% level of significance.

4.3. Discussion

In summary, this research examines the correlation between human resource department practices and firm performance with special emphasis on innovative practices. A comprehensive survey is conducted in which the data are collected from the SMEs of twin cities. We run four different kinds of models in this research to examine how innovative HR department practices influence SMEs' performance. In all four econometrical specifications, we keep the independent and control variables the same but change the dependent variables. In the first specification, the firm performance dependent variable was labor productivity. In the second specification, the firm performance dependent variable was product innovation. In the third specification, the firm-performance-dependent variable was process innovation while in the final specification, the firm-performance-dependent variable is defined by proxy variables of the marketing innovation. In all specifications, different innovation-related HR practices have different impacts on SMEs' performance. It is found that innovative recruitment practices have a positive impact on firm performance. Similarly, redeployment and retraining have a negative impact on firm performance. Innovative HRM department, performance appraisal, and reward and compensation practices have mixed impacts on firm performance depending on the proxy used for firm performance. Innovative HRM department, performance appraisal, and reward and compensation practices reveal mixed impacts on firm performance depending on the proxy used for firm performance. It is found that innovative recruitment practices have a positive impact on firm performance. Similarly, redeployment and retraining have

a negative impact on firm performance. These findings have significant importance for policymakers and suggest some suitable policies in the area of firm-level innovation and human resource management in developing economies such as Pakistan. Research in this area for developing economies is found to be rare in the literature and no attempt has yet been made from the perspective of Pakistan. This study is the first of its nature in this direction which examines the data of SMEs located in twin cities.

4.4. Policy Implications

The prime implication of this study is that SMEs in Pakistan may observe the benefits of devoting greater attention to innovative HR practices to achieve future growth potential. Overall findings suggest several suitable policy implications. For instance, it tells us which type of innovative HR practice an SME firm should focus on based on these results to boost its labor productivity and generate different kinds of firm-level innovations such asproduct, process, and marketing innovation and what kind of practices may be improved and avoided. Based on these results, SMEs in twin cities must avoid redeployment and retraining practices in order to retain employees and improve firm performance. We believe that these results will equip policymakers with a thorough understanding of how firm-level HR department innovations influence firm performance.

5. Conclusions and Future Work

This research examines the impact of innovation on firm performance. It analyzes how the innovative human resource department practices of SMEs affect firm performance. In total, four different kinds of models are used to examine the impact of innovative HR department practices on the performance of SMEs. The results of this research provide mixed findings. It is found that innovative recruitment practices have a positive impact on firm performance, while redeployment and retraining have a negative impact on firm performance. Innovative HRM department, performance appraisal, and reward and compensation practices reveal mixed impacts on firm performance depending on the proxy used for firm performance. The majority of these findings are supported by previous studies; however, some are novel and do not follow the existing literature. This study was conducted using data from the two cities of Pakistan, which may be extended to other parts of the country.

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