

# **IMPACTS OF HUMAN RESOURCES MANAGEMENT INNOVATIONS ON PRODUCTIVITY AND EFFECTIVENESS IN A MEDIUM-SIZE NON-PROFIT ORGANIZATION**

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## **ABSTRACT**

*The purpose of this research is to conduct an empirical study on how human resources management (HRM) can positively affect productivity and effectiveness while investing in employee health and wellness, lowering employee turnover, implementing technology, and maintaining autonomy. Many studies examine productivity and effectiveness in the work place, but none as of yet have investigated the impacts of HRM innovations on productivity and effectiveness in a non-profit organization. This paper will fill the gap in the HRM literature involving productivity and effectiveness. To accomplish this goal, a survey of employees in the non-profit organization was conducted to collect sample data by the means of a questionnaire. A multivariate statistical analysis was performed to develop a regression model on productivity and effectiveness. Results show statistical significances in the overall models of productivity and effectiveness. The results also show that autonomy, technology, and health and wellness are factors in the relationship to employee productivity and effectiveness.*

## **INTRODUCTION**

Elements of human resource management (HRM) change constantly. Management is continually trying to find new innovations to increase productivity and effectiveness within the workplace. More innovations mean HRM has more choices and more responsibility. With a wide selection of options, management must choose those which will work the best to increase productivity and effectiveness. Many have conducted studies regarding the various innovations in HRM. These studies have shown that autonomy largely contributes to the creation of a satisfactory job atmosphere. When employees experience a good work environment, turnover decreases since employees are content. Higher employee satisfaction then results in higher productivity and effectiveness (Oum, Waters II & Yu, 1999). Likewise, health and wellness has also proven to affect productivity. Because healthy employees have fewer absences and perform their jobs more often, a company with healthy employees generally has higher productivity. Technology has also proven to be a factor in affecting productivity (Brynjolfsson & Yang, 1993; Bharadwaj, Bharadwaj & Konsynski, 1999).

This research attempts to build a strong case for these HRM innovations—autonomy, turnover, health, and technology—in terms of productivity and effectiveness in the workplace. Using empirical data, this study will show that these HRM innovations have a positive significant relationship on productivity and effectiveness. A sample from a medium-sized, non-profit organization was gathered through an in-person questionnaire survey. Of this company's approximately 400 employees, 110 were sampled in a 16-question door-to-door survey. Section 2 of this research paper reviews prior studies on HRM and productivity and effectiveness while Section 3 presents the methodology of this survey. Following this, section 4 examines the statistical results of the regression model pertaining to productivity and effectiveness. Section 5 discusses the results and managerial implications of this research paper as a whole. Section 6 then concludes this study on HRM innovations regarding productivity and effectiveness.

## LITERATURE REVIEW

Bloom and Van Reenen (2010) found that HRM practices such as pay incentives, hiring and firing, teams, and autonomy affects productivity. Bloom and Van Reenen researched various methodologies and journals in order to composite their ideas into one paper. They concluded from this process that in certain instances productivity increased with HRM practices. They also concluded that studies of smaller firms and groups have been more successful in identifying a positive relationship between HRM and productivity.

Lazear (2000) reported that individual incentive pay resulted in higher productivity. Through using the Safelite Glass Company as the subject of his study, he found that the company replaced employee flat rate pay with pay-per-piece. For every windshield properly installed, the employee then receives a set amount of pay for that piece. Lazear looked 19 months before and after the implementation of the pay-per-piece incentive and found that productivity increased by 44% after the implementation. Half of this was due to individuals changing their working behaviors. The other half was contributed to selection effects. Fewer productive workers left and more productive workers were attracted to the job because of the high incentives.

Huselid (1995) found that effective Human Resource Management significantly related to productivity and financial performance. He found that investment in HRM effective practices, such as recruiting employees and training managers to manage staff effectively, financially benefitted the company. This one time investment in HRM practices results in higher profits for the company since it increases productivity and lowers employee turnover. Company performance increases overall when companies use effective HRM practices.

Tomer (2001) reported that the implementation of high performance work systems (HPWS) by management increases productivity as well. High performance work systems use employee involvement and skill training to create better employee morale, which in turn creates self-actualization and motivates employees. Motivation creates harder working employees who do their absolute best in their job performance and who together increase the productivity of the

company as a whole. This study concluded that implementing HPWS helps motivate employees and thus encourages productivity to flourish.

Ichniowski (1990) found that companies using HRM practices, such as flexible job design, effective workplace communication, and formal training, have the highest level of economic productivity. In contrast businesses that use Human Resource Management practices, such as grievance procedures, seniority-based promotions, and a standard non-flexible work schedule had substantially lower productivity. It seems that the “old style” of HRM practices are less productive in today’s business world.

Pfeffer (1998) reviewed studies on the auto, steel, and oil industries and reported that flexible and progressive Human Resources Management practices resulted in higher productivity. In the auto industry, flexible production methods that focused on team and employee involvement generated higher quality work and higher productivity compared to mass production methods. In the steel industry, more progressive HRM practices proved to have significant lower costs and higher proportions of productivity than traditional practices. Last, in the oil industry, HRM practices with multi-skilled trained and committed employees helped to lower maintenance costs and to raise refinery utilization standards.

MacDuffie (1995) studied Human Resource “bundles” in the auto industry. Through this, he found that Human Resources bundles associated with job rotation, suggestions, greater use of teams, workers performing quality tasks, and high commitment policies had high productivity. Plants that used bundles that consisted of mass production practices and low commitment policies also had high productivity. MacDuffie concluded that the innovate bundles that HRM used positively related to production and quality.

Hater, Schmidt, and Keyes (2002) reported that organizations that provide opportunities for employee fulfillment and growth have better success. The data indicated that workplaces with engaged employees generally have better customer service, are more productive and make higher profits. This study identified workplace well-being as a dependent component of a more profitable and productive organization.

Joo (1998) found that companies with employees who are financially stable and have a high sense of their own overall well-being showed better performance ratings and less absenteeism. Additionally, these employees used less work time for financial matters. Considered together, these factors correlated with better company productivity. The results of the study determined that for a company to increase its productivity it should offer financial education programs such as retirement plans, credit management, and better use of employee benefits to reduce the financial stress level of its employee.

Sims also reported that employee health and wellness affects productivity. Absenteeism often poses a high cost for companies. When employees miss work due to health issues, production does not reach the levels it could if those employees were present. This study showed that companies that promote employee health and wellbeing have 2.5 times higher productivity than their competitors.

Baicker, Cutler, and Song (2010) found that companies using Human Resources Management that focuses on employee wellness programs have higher productivity. Employers reduce their medical costs by having an employee wellness program. This also reduces absenteeism, which can also provide higher productivity. This wellness program benefits the company by lowering replacement costs of employees, attracting future employees, and providing a lower turnover rate.

Berry, Mirabito, and Baun (2010) reported that absenteeism lowered production in a company. However, presenteeism could also cause low productivity. Presenteeism is when an employee comes to work, but underperforms due to sickness or stress. This study reports that costs to employers from health-related productivity losses exceed those that employers spend on health insurance. Employers can increase productivity by implementing wellness programs, wellness education, and health insurance.

Neely (1999) found that employee morale significantly relates to productivity. Companies boosted their productivity by implementing programs in which management would engage in activities such as listening to employees, honoring their contributions, and providing feedback. Companies in which management implemented these types of programs had higher productivity than those that did not.

Kling (1995) reviewed articles and reported that HRM can increase productivity in an organization by implementing practices such as training, incentive pay, and employee involvement. The study shows that these HRM practices and productivity significantly correlate when implemented together.

Glewwe, Elias, and Kremer (2003) found that when schools in Kenya implemented pay incentives students performed better on standardized tests. Schools that produced the highest test scores received a monetary reward to disburse to teaching staff. This incentive motivated teachers to improve their quality of teaching and, thus, raised scores. The incentive motivation shows that employees respond positively to pay incentives by raising productivity.

Bailey (1993) reported that HRM practices could influence productivity through provisions of organizational structure. Such provisions encourage participation among employees and allow them to provide input for improvements regarding their jobs. Examples of these structural provisions would include job rotations, quality circles, and cross-functional teams.

Bartel (1994) found that the HRM implementation of a training program boosts productivity. Firms with lower productivity in 1983 implemented employee- training programs. Those firms showed a significant increase in productivity when measured again 1986.

Cutcher-Gershenfeld (1991) reported that firms that adopt labor relations emphasizing cooperation and dispute resolution have higher productivity. The study also reports that they have lower costs, less scrap, and greater return to direct labor hours. The study compared these firms to those that implemented the “traditional” adversarial labor relations practices.

Brynjolfsson and Yang (1993) found that, even though past studies found either a lack of evidence or an insignificant correlation that related technology to productivity, recent studies have found the opposite. With new methodologies available, various researchers have found that

productivity improves when technology is present. Analyzing studies on productivity and technology shows a significantly relation between technology and productivity. Companies that use technology in the business process generally have an increase in not only productivity, but also consumer surplus and economic growth.

Bharadwaj et al. (1999) reported that, when controlling a variety of industry factors and firm-specific variables, data from a five-year period shows that information technology significantly relates to firm performance and productivity. Research on the strategic flexibility and intangible value of technology proved significant in regards to future performance and productivity. This research shows a significant relationship between technology and productivity increases.

Katz, Kochan, and Gobeille (1983) and Schuster (1983) both reported that when employee quality of work life (QWL) was respectable productivity increased. QWL refers to the work environment as well as the job at hand. When the quality of work life is satisfactory to employees, they want to stay at their company and produce prime output. When labor management teams also increased quality circles productivity significantly increased. QWL not only increases productivity, but it also lowers turnover.

Oum et al. (1999) found that in the railroad industry managerial autonomy increased productivity and effectiveness. The use of new innovated methodologies determined the impacts which autonomy had on productivity and effectiveness. A review of various European studies showed that the autonomy of managerial employees in the railroad industry proved to have a positively significant effect on productivity and effectiveness.

Many studies consider the need for HRM to improve their health and wellness plans. Many more studies consider HRM programs as a whole and how they may impact work performance. Many of these show that autonomy increases productivity and effectiveness; however, no study was found to encompass all four variables into productivity and effectiveness. This study proposes a framework for HRM innovations in which an organizational culture strives for a balance of four factors: autonomy, technology, limited turnover, and health and wellness. Thus, this paper hypothesizes that HRM innovations will increase productivity and organizational effectiveness.

## METHODOLOGY

Autonomy is a factor that affects both productivity and effectiveness. A review of European studies in the railroad industry showed that autonomy in managerial positions improved productivity and effectiveness. New innovated methodologies have also proven the significance of autonomy on productivity and effectiveness (Oum et al., 1999; Bloom & Van Reenen, 2010).

*H1      Autonomy is a significant factor in productivity and effectiveness.*

Technology also affects productivity. Past studies have shown no significance between technology and productivity; however, researchers have been able to find a significant relationship using new methodologies. Companies that implement technology into their business processes

have shown an increase in productivity, consumer surplus and economic growth. (Brynjolfsson & Yang, 1993; Bharadwaj et al., 1999)

*H2 Technology significantly relates to productivity and organizational effectiveness.*

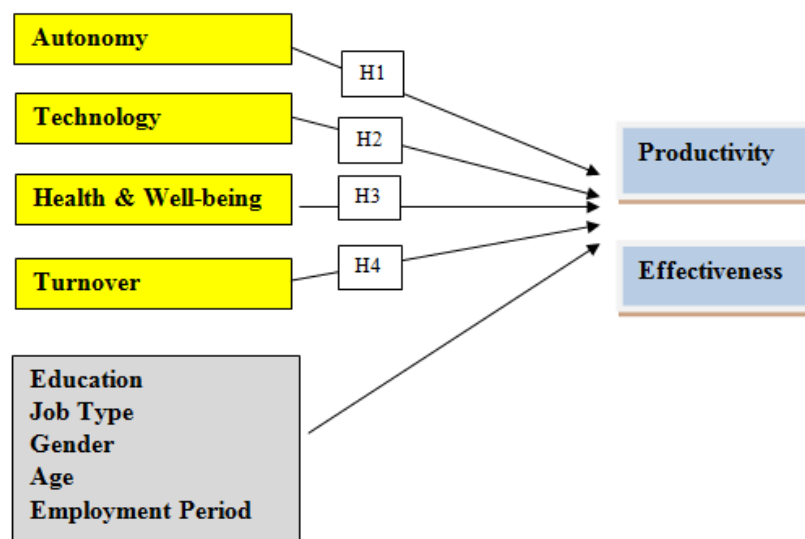
Health and wellness is a factor of productivity. Research has proven that financially stable employees have fewer stressors in their lives and are more productive. This financial stability also prevents employees from using work time to address financial matters. Additionally, physically healthy employees tend to have fewer absences from work. In return, their presence in full health boosts productivity in the work place. (Baicker et al., 2010; Berry et al., 2010)

*H3 Employee health and wellness makes a significant impact on productivity and organizational effectiveness.*

Employee turnover also affects productivity. When an employee has a respectable quality of work life (QWL) that employee does not feel the need to find another job. This ultimately lowers employee turnover. QWL consists of a healthy work environment and high employee morale. High employee morale commonly comes from encouraging employee input and giving employees attainable tasks. (Katz, Kochan, and Gobeille, 1983; Schuster, 1983)

*H4 Employee turnover significantly relates to productivity and organizational effectiveness.*

A main hypothesis for this research states that improved employee health and wellness, lower employee turnover, and the implementation of technology increases productivity and effectiveness in the workplace. Autonomy not only improves productivity, but also effectiveness. The framework surrounding this research is presented in Figure 1.



**Figure 1**

To conduct hypothesis testing, a multiple regression model was produced. The multivariate statistical model uses employee productivity ( $Y_1$ ) and effectiveness ( $Y_2$ ) as a representation for the dependent variable. Four factors describing HRM strategies serve as independent variables: autonomy, turnover, health and wellness, and technology. Each factor is measured in terms of productivity and effectiveness.

For measuring the impacts on productivity, four variables are created as autonomy ( $X_2$ ), turnover ( $X_4$ ), health and wellness ( $X_6$ ), and technology ( $X_8$ ). For measuring the impacts on effectiveness, additional four variables are created as autonomy ( $X_1$ ), turnover ( $X_3$ ), health and wellness ( $X_5$ ), and technology ( $X_7$ ).

To enhance the regression model reliability, the statistical model includes pertinent variables such as job type ( $X_{11-1}$ ; 0=non-manager, 1=manager), gender ( $X_{12}$ ; 0=male, 1= female), education ( $X_{13-1}$ ; 0=non-graduate school, 1= graduate degree), age ( $X_{14-1}$ ), and HRM evaluation ( $X_{16}$ ; 0=non-satisfactory HRM, 1=satisfactory HRM).

We propose two models: (1) productivity model (2) effectiveness model. The productivity model is expressed as following:

$$Y_1 = \beta_0 + \beta_2 X_2 + \beta_4 X_4 + \beta_6 X_6 + \beta_8 X_8 + \beta_{11-1} X_{11-1} + \beta_{12} X_{12} + \beta_{13-1} X_{13-1} + \beta_{14-1} X_{14-1} + \beta_{16} X_{16}$$

The effectiveness model is described as follows:

$$Y_2 = \beta_0 + \beta_1 X_1 + \beta_3 X_3 + \beta_5 X_5 + \beta_7 X_7 + \beta_{11-1} X_{11-1} + \beta_{12} X_{12} + \beta_{13-1} X_{13-1} + \beta_{14-1} X_{14-1} + \beta_{16} X_{16}$$

Research hypotheses provide the basis of the survey questionnaire. A survey was conducted at a medium size non-profit organization in the Midwest with an annual operating budget of about 36 million dollars. The survey questionnaires were sent to all 413 full-time employees.

## RESULTS

Out of 413 employees, 110 returned questionnaires in the first survey request. This results in 26.6% response rate. Descriptive statistics show that out of the 110 responses, 24 employees occupied managerial positions (21.8%) and 86 non-managerial positions (78.2%). Of those non-managerial positions held, 27 were classified as technical (24.5%), 31 as clerical (28.2%), and 28 as student workers (25.5%). Two employees had only a high school diploma (1.8%), 52 had some form of college (47.3%), 31 had a Bachelor's degree (28.2%), 16 had a Master's degree (14.5%), and 8 had a Doctorate degree (7.3%). Of the 110 employees, 84 were female (76.4%) and 26 male (23.6%). The age groups of the employees were as follows: three under the age of 20 (2.7%), 40 between the ages of 20-30 (36.4%), 20 between the ages of 31 and 40 (18.2%), 16 between the ages of 41-50 (14.5%), 22 between the ages of 51-60 (20.0%), seven between the ages of 61-70 (6.4%), and only one employee over the age of 70 (.9%). The employees were also surveyed on

whether Human Resources were doing a satisfying or dissatisfying job. Of the 110 responses 55 believe that HR was doing a satisfactory job (50.5%) and 54 believed HR was unsatisfactory (49.5%).

Table 1 shows the results of Pearson Correlation analysis in terms of productivity.

|                              | Q10 | Q2      | Q4      | Q6      | Q8      | Job   | EMP    | EDU     | Age     | Gen   | HR       |
|------------------------------|-----|---------|---------|---------|---------|-------|--------|---------|---------|-------|----------|
| Productivity (Q10)           | -   | .359*** | .246*** | .365*** | .384*** | -.026 | -.143  | -.114   | .047    | -.040 | .099     |
| Autonomy (Q2)                |     | -       | .420*** | .238**  | .304*** | .019  | .151   | .116    | .082    | .110  | .004     |
| Turnover (Q4)                |     |         | -       | .281*** | .359*** | .114  | .072   | -.004   | .021    | .014  | .065     |
| Wellness (Q6)                |     |         |         | -       | .365*** | .031  | -.072  | -.025   | -.057   | .124  | .144     |
| Technology (Q8)              |     |         |         |         | -       | .081  | -.011  | -.051   | -.042   | -.049 | .102     |
| Job                          |     |         |         |         |         | -     | .238** | .216**  | .280*** | .030  | -.198**  |
| Emp Period (EMP)             |     |         |         |         |         |       | -      | .325*** | .630*** | .069  | -.314*** |
| Education (EDU)              |     |         |         |         |         |       |        | -       | .474**  | .069  | -.438*** |
| Age                          |     |         |         |         |         |       |        |         | -       | .101  | -.387*** |
| Gender (GEN)                 |     |         |         |         |         |       |        |         |         | -     | -.081    |
| HR                           |     |         |         |         |         |       |        |         |         |       | -        |
| *p<0.10, **p<0.05, ***p<0.01 |     |         |         |         |         |       |        |         |         |       |          |

Table 2 shows the results of Pearson correlation analysis, in terms of organizational effectiveness.

|                              | Q9 | Q1      | Q3      | Q5      | Q7      | Job   | Q12    | EDU     | Age     | Gen   | HR       |
|------------------------------|----|---------|---------|---------|---------|-------|--------|---------|---------|-------|----------|
| Effectiveness (Q9)           | -  | .287*** | .235**  | .286**  | .342*** | -.127 | -.124  | -.130   | -.030   | -.043 | .116     |
| Autonomy (Q1)                |    | -       | .457*** | .082    | .293**  | -.026 | .130   | .111    | .053    | .034  | -.057    |
| Turnover (Q3)                |    |         | -       | .316*** | .417*** | .122  | .044   | -.021   | .043    | -.025 | -.024    |
| Wellness (Q5)                |    |         |         | -       | .303*** | .138  | .000   | .031    | .029    | .051  | -.005    |
| Technology (Q7)              |    |         |         |         | -       | .095  | .041   | -.061   | -.073   | -.109 | .136     |
| Job                          |    |         |         |         |         | -     | .238** | .216**  | .280*** | .030  | -.198**  |
| Emp. Period (Q12)            |    |         |         |         |         |       | -      | .325*** | .630*** | .069  | -.314*** |
| Education (EDU)              |    |         |         |         |         |       |        | -       | .474*** | .069  | -.438*** |
| Age                          |    |         |         |         |         |       |        |         | -       | .101  | -.387*** |
| Gender (GEN)                 |    |         |         |         |         |       |        |         |         | -     | -.081    |
| HR                           |    |         |         |         |         |       |        |         |         |       | -        |
| *p<0.10, **p<0.05, ***p<0.01 |    |         |         |         |         |       |        |         |         |       |          |

Results show statistical significance in the multiple regression model on employee productivity as described in the methodology portion of the report [ $R^2 = 0.505$ ,  $F(4,105) = 9.005$ ]. Variance inflation factors show that no serious multicollinearity is present in the model. All VIFs are less than five. Findings show that autonomy, health and wellness, and technology ( $p < 0.05$ ) significantly affect productivity, as shown in Table 3. But the turnover variable shows no significant relationship with the organizational productivity.



| <b>Table 3</b>  |                     |        |       |      |      |         |
|---|---------------------|--------|-------|------|------|---------|
| <b>PRODUCTIVITY MODEL</b>                               |                     |        |       |      |      |         |
| $R^2 = 0.505, F(4,105) = 9.005^{**}$                    |                     |        |       |      |      |         |
| $X_j$   | Acronym             | Source | $b_j$ | SE   | SRC  | t       |
| $X_2$   | Autonomy            | Q2     | .254  | .102 | .235 | 2.2484* |
| $X_4$   | Turnover            | Q4     | .001  | .114 | .001 | .009    |
| $X_6$   | Health and Wellness | Q6     | .187  | .077 | .225 | 2.441*  |
| $X_8$   | Technology          | Q8     | .228  | .095 | .230 | 2.412*  |
| * $p < .05$ , ** $p < .01$                              |                     |        |       |      |      |         |
| Source refers to # of the survey questionnaire.         |                     |        |       |      |      |         |
| $b_j$ = Unstandardized regression coefficient for $X_j$ |                     |        |       |      |      |         |
| SE = Standard error of unstandardized $b_j$             |                     |        |       |      |      |         |
| SRC = Standardized regression coefficient of $X_j$      |                     |        |       |      |      |         |

Evidence also shows that autonomy, health and wellness, and technology ( $p < .05$ ) all significantly affect effectiveness, as shown in Table 4. The turnover variable did not prove to be statistically significant in the effectiveness model.

| <b>Table 4</b>                      |                     |        |       |      |       |        |
|-------------------------------------|---------------------|--------|-------|------|-------|--------|
| <b>EFFECTIVENESS MODEL</b>          |                     |        |       |      |       |        |
| $R^2 = 0.439 F(4,105) = 6.274^{**}$ |                     |        |       |      |       |        |
| $X_j$                               | Acronym             | Source | $b_j$ | SE   | SRC   | t      |
| $X_1$                               | Autonomy            | Q1     | .245  | .114 | .215  | 2.147* |
| $X_3$                               | Turnover            | Q3     | -.027 | .132 | -.022 | -.208  |
| $X_5$                               | Health and Wellness | Q5     | .186  | .085 | .207  | 2.182* |
| $X_7$                               | Technology          | Q7     | .241  | .106 | .226  | 2.275* |
| * $p < .05$ ** $p < .01$            |                     |        |       |      |       |        |

## DISCUSSION

Evidence of this study supports the finding that the autonomy factor in the literature review significantly relates to productivity (Oum et al., 1999; Bloom & Van Reenen, 2010). The literature did not support the idea that this variable significantly relates to the effectiveness model, however. The literature review did support the evidence of health and wellness being significantly related to productivity (Baicker et al., 2010; Berry et al., 2010). Overall, the evidence shows that health and wellness of employees affect both the productivity and effectiveness model. While the literature review did not support the idea that health and wellness significantly relate to effectiveness, this research paper found a significant relationship. The evidence and the literature review both support the claim that technology impacts productivity (Brynjolfsson & Yang, 1993; Bharadwaj et al., 1999). Literature did not support the evidence found that suggested technology impacts effectiveness within the work place. However, the evidence shows no significance between turnover and productivity and effectiveness, a finding inconsistent with the literature review (Katz et al., 1983; Schuster 1983).

The results have important managerial implications. The findings of this study suggest that the factors of autonomy, technology, and health and wellness affect both productivity and effectiveness. Both the effectiveness model and the productivity model have shown significant

increases with these factors present in an organization. However, both the productivity and effectiveness model have shown no significance in the turnover rate impacting productivity and effectiveness. Evidence largely suggests that human resources management innovations can contribute to increasing productivity and organizational effectiveness. An organization can increase effectiveness and productivity by providing more technology, granting more autonomy, and offering more health and wellness programs to employees.

## CONCLUSION

This study has shown that the autonomy and health and wellness of employees as well as a company's use of technology affect both productivity and effectiveness in an organization. However, the factor of turnover rate has not shown to be significantly related to productivity and effectiveness. Other factors, such as age, gender, education, years employed with a company, and overall perspective of HR have effect on the variables of autonomy, health and wellness, and technology. Further studies on this subject matter should investigate the impacts of HRM innovations on productivity and effectiveness. Further studies could also expand the survey pool since this study's small sample size limited the implications this study could make on a grand scale. Additionally, one could further investigate HRM by sampling a for-profit organization, gathering a larger sample size, researching other sectors of the business world and investigating the relationships between turnover rate and productivity and effectiveness in the work place. This research provides a HRM literature review with empirical evidence regarding the importance of HRM innovations of productivity and effectiveness within a medium-size, non-profit organization. The evidence suggests that managers can achieve an increase in productivity and effectiveness by implementing HRM innovations that can result in organizational success for a company.

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