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Measuring the Extent of a High Performance Work System: A Mixed Methodology Approach

B. Nicole Rasool (Corresponding author)
PhD Scholar, Institute of Management Sciences, Peshawar, Pakistan
E-mail: nicole@peakvalley.com

Muhammad Nouman
Institute of Management Sciences, Peshawar, Pakistan
E-mail: muhammad.nouman@imsciences.edu.pk

Abstract

High performance work systems (HPWS) and their effect on firm performance is examined using a single holistic case study design in which the Total Strategic Resource Approach (TSRA) is used to measure the extent of HPWS implementation in a private Pakistani hospital. Using a mixed methodology case approach, it is discovered that Pakistan Hospital & Medical College (PHMC) has begun to implement aspects of an HPWS. Profound weaker human resource areas include information sharing and compensation although improvement is needed in all 12 HR practice areas. Firm performance was measured using perceptual measures of the organization's employees, and it was determined that the HPWS does have a significantly positive effect on firm performance. The study was also designed to test the reliability of the TSRA for the Pakistani context given its unique cultural setting, and it was confirmed that the TSRA is a reliable model that future researchers can use in order to measure the extent of HPWS implementation in other Pakistani organizations.

Keywords: high performance work system (HPWS); firm performance; total strategic resource approach (TSRA); resource-based view; organizational performance.

1. Introduction

High performance work systems (HPWS) have become quite popular in literature that explores a systems' effect of an HPWS on firm performance; however, the extent to which hospitals implement HPWS's is an unexplored area especially in the developing world of Pakistan. The hospital industry has a highly skilled workforce and is labor intensive; therefore, implementation of an HPWS should be quite successful (Young et al. 2010). However, in Pakistan, HPWS's have yet to find their calling in any industry. Khilji (2003) states that Pakistani companies are still in an infant stage of development as in her study of 15 different organizations only three organizations had implemented systematic HR systems, while the other 12 had implemented only installments of HR practices over time, not fully realizing the full strength a complete HPWS can create.

Measurement of an HPWS, however, is something that is highly debated in the literature (Becker & Gerhart, 1996). Also, the cultural context in which an HPWS is measured also

needs to be considered. As Mendoca (2000) states, HR practices adopted in the Western World cannot be unilaterally adopted in all countries, especially developing countries. The organizational norms of business must be examined when considering the adoption of an HPWS in order to ensure effective implementation. Also, due to a great variance among studies in measuring an HPWS, it is difficult to compare findings among different studies in order to come to an understanding of the true impact of human resources on firm performance.

1.1 *Objectives of the Study*

Therefore, in this study we aim to explore the extent of HPWS implementation in a private Pakistani hospital in order to measure the HPWS and its effect on firm performance. More specifically, we want to shed light on the importance of human resources (HR) in the Pakistani business context by emphasizing how HR can affect firm performance. This will encourage more businesses to adopt HPWS's and thus improve firm performance. Second, we want to empirically test the reliability of a new model termed the *Total Strategic Resource Approach (TSRA)* that measures HPWS's so that the TSRA can be used in future Pakistani studies that measure an HPWS. This will help standardize findings across studies in Pakistan so results can easily be compared. Finally, we want to analyze the extent of HPWS implementation in a Pakistani hospital. Understanding how hospitals currently implement HPWS's will help businesses recognize HR system deficiencies and thus create a pathway for future improvement.

In order to accomplish these objectives, a mixed methodology approach is used that incorporates both quantitative and qualitative data. Following Yin (2003), a single holistic case study design is employed in investigating HPWS implementation at Pakistan Hospital & Medical College (PHMC, i.e pseudo name of the organization), a privately-owned hospital and medical school. Following is the theoretical framework and the methodology, which is divided into the two respective research methods that were employed in this study.

2. Review of the Literature

In this study, we develop a new model that is based on three different theories due to the predominance of these three theories in the current literature. Therefore, in this review of literature section, we will discuss these three theories and their implications in the role of HR in organizations. The three theories include the universalistic, contingent and resource-based view. Authors of HPWS / firm performance studies typically use one of these theories or a combination of these theories in order to build their measurement model for an HPWS.

The universalistic theory is defined as a set of core HR practices from which all firms can benefit in order to create the best HPWS system (Huselid, 1995). Certain HR practices are a given, or universal, and every organization must implement them for success. This is the most commonly referred to theory in HPWS / firm performance studies as used by many authors (Huselid, 1995; Delery & Doty, 1996).

The contingency theory states that a firm should implement HR practices in their organization that are consistent with the organization's business strategy (Delery & Doty, 1996). For example, if a business follows a cost leadership strategy implementing HR practices that fully explore career opportunities for employees may be ineffective for a workforce that has high turn**o**ver and a low skill-level.

Finally, the resource-based view, in terms of HPWS's, states that firms will endeavor to create HR practices that are rare, valuable, inimitable and non-substitutable in order to create a competitive advantage (Barney, 1991). Every business looks for a competitive advantage that can set them apart. In today's world, HR fills this role. Therefore, each business must strive to create HR practices that are firm-specific that cannot be copied if they hope to outdo their competitors.

In terms of empirical research of HPWS / firm performance, there have been a considerable number of studies that have investigated the effect of an HPWS on firm performance; however, there have not been any studies looking at this phenomenon in Pakistan. Therefore, this study will be one of the first that evaluate this relationship based on the Pakistani context. This leads to the theoretical framework next.

3. Theoretical Framework

In order to evaluate the relationships of an HPWS on firm performance, it is necessary to develop an appropriate model that would effectively measure an HPWS in the Pakistani context. Therefore, in this study, we develop our own model based on previous research that can effectively measure an HPWS. This new model is termed the *Total Strategic Resource Approach.*

3.1 *The Total Strategic Resource Approach*

The *Total Strategic Resource Approach* (TSRA) measures an HPWS and is based on the three previously mentioned theories: the universalistic theory, contingency theory, and the resource-based view. Every company must have given HR practices, such as training and recruitment, for example. However, the strategy of a business will also influence HR practices. Also, every company does things a bit differently, and it is this difference that can often create a competitive advantage; therefore, the resource-based view should also be included in a complete model. Combining all three theories together in one model can most effectively measure each and every HR practice that may be included or excluded in an HPWS thus more effectively measuring an organization's HPWS.

In this study, universal practices are based the mostly commonly included HR practices from 29 different studies from 1994 to 2012 (See Table 8 in the appendix) and include the following HR practices: training, compensation, extensive recruiting, employee participation, performance management, promotions, teams, formal grievance procedures, information sharing and job design (See Table 1 for a summary table of HR practices.). Also, this is consistent with Naqvi and Nadeem (2011), a recent Pakistani study that examined 13 different high performance work practices in their HPWS with the exception of employment security, employee ownership and measurement of HR practices. The understanding of this part of the model is that every firm should have at least these 10 HR practices effectively implemented in their organization in order to achieve firm success.

Table 1: HPWS Prevalent HR Practices (29 studies from 1994 to 2012)

HR Practices	Percentage
General & Extensive Training	17.9%
Compensation	14.2%
Extensive Recruiting	9.9%
Employee Participation	8.5%
Performance Appraisal	6.6%
Promotion	5.7%
Teams	4.7%
Formal Grievance Procedures	4.7%
Information Sharing	4.2%
Job Design	3.8%

Second, in measuring the HPWS for this study, we follow the contingency theory and measure differentiation HR practices opposed to the other two choices of *cost leadership* HR practices or *innovation* HR practices (Porter, 1980; Gupta, 2008).

Finally, following the resource-based view, we measure firm-specific HR practices, the third component of the TSRA model, by focusing on HR practices that are rare, valuable, non substitutable and inimitable. Wright, McMahan, and McWilliams (1994) discuss how human resources can create a competitive advantage by specifically defining how HR practices can be rare, valuable, non substitutable and inimitable. Employee knowledge, skills, abilities and discretionary effort can create valuable human resources as long as employees exert discretionary effort (Wright, McMahan, McWilliams, 1994). One way to create rare human resources is by focusing on cognitive ability, which is normally distributed in the population; therefore, a workforce with high cognitive ability is defined as 'rare'. A focus on inducting employees with high cognitive ability could lead to rare human resources. Inimitable human resources can be created by implementing programs, processes and cultures that have causal ambiguity and social complexity (Wright, McMahan, McWilliams, 1994). Causal ambiguity refers to how it is unclear to competitors how a certain process, program or practice is implemented in a firm. If a competitor is unable to identify the cause of a certain practice, process, program, etc., they will not be able to replicate it. Second, social complexity refers to the interactions among stakeholders in an organization that are complex and difficult to replicate. Over time, a firm will develop different relationships with stakeholders. The dynamics of these different relationships have certain norms that cannot be explained or replicated by competitors. Thus, this makes up an important characteristic of creating a sustainable competitive advantage with human resources. Finally, a firm must ensure their human resources are non-substitutable. This means that a firm's practices, programs and people cannot be substituted for another more effective production method (Wright, McMahan, McWilliams, 1994). A non-substitutable workforce will be able to cope up with technological changes effectively, whether it be a new technological process or a new piece of equipment. Non-substitutable human resources are able to effectively deal with such changes. Thus, the firm-specific component of the TSRA measures how a company creates human resources that are a competitive advantage. The TSRA model can be seen in the following Figure.

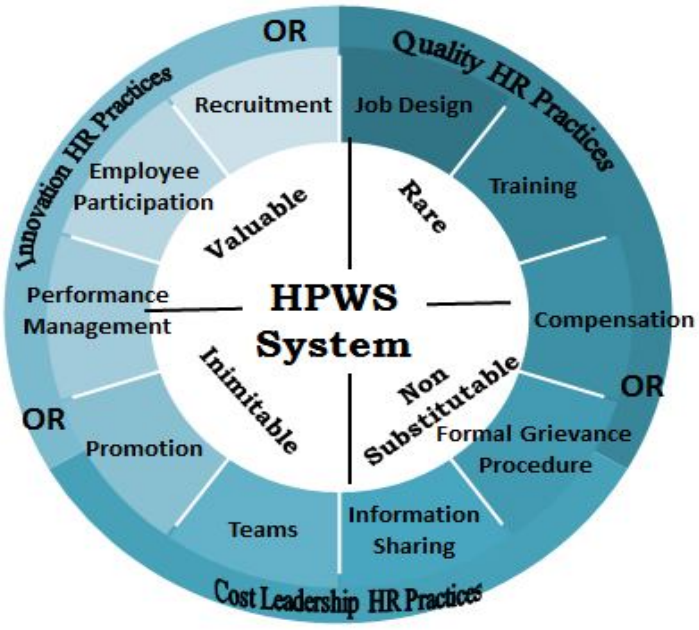

Figure 1: The Total Strategic Resource Approach

Due to the fact that PHMC is following a differentiation strategy, we measure differentiation HR practices for this study. Table 2 outlines the type of differentiation HR practices that are measured.

Table 2 Differentiation HR Practices

No.	Differentiation
1	Fixed and detailed job descriptions (Gupta, 2008)
2	Employee participation in decision making (Gupta, 2008; Bae & Lawler, 2000)
3	A mix of group and individual performance appraisals (Gupta, 2008)
4	Extensive and continuous training focused on supporting total quality and customer care (Armstrong, 2003)
5	Develop and implement knowledge management processes (Armstrong, 2003)
6	Recruiting and retaining highly skilled labor (Sims, 2002)
7	Reward of employees for quality of work and/or customer satisfaction focused short term rewards (Sims, 2002)

3.2 *Research Questions*

This leads to the following research questions and hypotheses for this study:

- How is HR implemented in a private Pakistani hospital?
- Is the TSRA appropriate for the cultural context of Pakistan?
- Based on the TSRA, to what extent has PHMC implemented a high performance work system?
- Is the TSRA a reliable model to measure an HPWS in Pakistan?
- Does an HPWS have a significant effect on firm performance at PHMC?

3.3 Hypotheses

Hypothesis 1: PHMC will be on the average to low side of a high performance work system scale.

Hypothesis 2: The Total Strategic Resource Approach is a reliable model to measure an HPWS in Pakistan.

Hypothesis 3: A high performance work system will have a positive impact on firm performance at PHMC.

Thus, the following regression equation models will be used to test the effect of an HPWS on firm performance:

$$FP = \beta_0 + \beta_{HPWS} + \varepsilon \quad \text{and} \quad FP = \beta_{0+} \beta_{Uni} + \beta_{Diff} + \beta_{FS} + \varepsilon$$

In the first equation, FP stands for the dependent variable of firm performance and HPWS is for the independent variable HPWS index. β_0 stands for the constant and ε stands for the error term. This equation will be used to examine the effect of the HPWS index on firm performance. The second equation also examines the effect of the HPWS on firm performance; however, it breaks it up into the three different HR practice areas. Therefore, the following independent variables are included in the second equation: *Uni* is for universalistic HR practices, *Diff* is for differentiated HR practices, and *FS* is for firm specific HR practices.

4. Methodology

The methodology used for this case study is a mixed methods approach utilizing both quantitative and qualitative data. Following Yin's (2003) advice for a single case study holistic design, an organization, otherwise known as Pak Hospital and Medical School (PHMC) for confidentiality purposes, was chosen as the unit of analysis and the following proposition guided the data collection process:

The Total Strategic Resource Approach is an effective model that incorporates the full effect of human resources on firm performance; therefore, this model will be tested empirically and be used to explore the human resources of PHMC.

Data were gathered over a three month period through various approaches including collection of archival materials, semi-structured interviews and a focus group. To answer the research questions, interviews, focus groups, and collection of archival materials are the main sources used to obtain data; however, to also ensure the *credibility* of the study, a third source of a quantitative survey was also used. Multiple sources of data collection ensure *triangulation* and thus convergence of the data (Yin, 2003). The survey will be further discussed in the quantitative section. Following this, the specific methodologies are discussed in detail separately.

4.1 *Qualitative Research*

In order to ensure *construct validity*, the TSRA guided the researcher in designing the case study (Yin, 2003). Semi-structured interviews were conducted with the assistant HR manager and two HR officers using a semi-structured interview approach with questions matched to the *Total Strategic Resource Approach.* Questionnaire items were validated by three separate HR professors who all agreed the questions should effectively measure high performance work practices. After, the researcher then returned on another day to conduct a focus group interview with nine employees from various positions including two HR officers, one nurse coordinator, one head of security, one manager of marketing and panel affairs, one administration manager of the medical college, one coordinator of biomedical engineering, one supply chain officer, and one manager of nutritional food services. The interview was facilitated by the researcher and an additional research assistant attended the meeting in order to take detailed notes of the respondents' answers. In addition, the meeting was video recorded as well to help in analysis of the data afterwards. The focus group interview followed the same interview questionnaire; however, the researcher was focused on comparing data previously garnered from the HR assistant manager interview and HR clerk interviews in order to verify the findings with the views of employees. Information from all interviews and the focus group was then reviewed and coded into categories, as separated into the 12 different HR practice areas of the TSRA, following the suggested method of Miles and Huberman (1994).

4.2 *Quantitative Research*

A quantitative method of using a survey is also used in this study in order to gain a statistical understanding of the extent of HPWS implementation in PHMC and to further support qualitative findings. A survey based on the *Total Strategic Resource Approach* divided questions into the three areas of: universal HR practices, differentiated HR practices, and firm specific HR practices. Again, the same three HR professors also verified the questionnaire items for the quantitative survey as well. A total of 54 questions were included in the survey, and the survey was distributed to a random sample of approximately 260 employees, first through email and then personally delivered and picked up. Based on a population of approximately 1500 employees of PHMC, an alpha value of .10, and a t-value of 1.65, sample size was calculated to be 79 (Bartlett, Kotrlik, & Higgins, 2001). Ninety questionnaires were received of which 86 were complete indicating a 33% response rate, which is consistent with Young et al. (2010) who states 25 to 30% response rates are typical and acceptable in social science research. This number is also above the minimum required 79 responses. Respondents to the survey include employees in several different positions, some of which include nurses, doctors, administrative staff, lecturers, etc. Most position groups comprise of only 1% to 7% of total respondents. The two largest position groups of respondents include lecturers (6.7%) and pharmacists (8.9%). There were a total of 30 different positions represented by the survey respondents. In terms of education, survey respondents were mostly educated within the range of 14 to 18 years of education, with 14.1 to 16 years making up 20.0% of respondents and 16.1 to 18 years making up 22.2% of the respondents.

4.2.1 HPWS Index.

The high performance work system index consists of 12 different HR practice areas based on the *Total Strategic Resource Approach*: 10 universalistic HR practice areas, a

differentiated HR practice area, and a firm specific HR practice area. The ten universalistic practices include: training, compensation, extensive recruiting, employee participation, performance management, promotions, teams, formal grievance procedures, information sharing and job design. An example of a universal HR practice question includes: *Training is a systematically structured process in this organization.* An example of a differentiation HR practice question includes: *Your organization has a values system or culture intended to promote knowledge sharing.* Finally, a firm-specific HR practice question includes: *The knowledge, skills, abilities and unique efforts demonstrated by employees in your organization creates a competitive advantage for your organization that other competitors cannot copy.*

All three HR practice areas were measured using seven point Likert scale questions ranging from strongly disagree to strongly agree based on Chicchetti, Shoinralter, and Tyrer's (1985) suggestion that reliability steadily increases with a Likert scale as it moves from one option towards seven options. After seven, no further increase in reliability is seen.

Survey questions were modified through support from the following studies: Guthrie et al. (2009), Gurbuz and Mert (2011), Huselid (1995), Datta (2005) and Bae & Lawler (2000). Consistent with Becker and Gerhart (1996), the researcher combines the means of each of the 12 HR practice areas by averaging all HR practices into one HPWS index.

4.2.2 Firm Performance Index.

Firm performance was measured by using employee satisfaction and employee perception of quality and performance as proxies for firm performance. This is consistent with several studies that have also used perceptual measures of firm performance in HPWS studies (Bae and Lawler, 2000; Delaney and Huselid, 1996; Guest and Conway, 2011; Gurbuz and Mert, 2011). All were combined together to create one firm performance index. Questions were created based on the work of Treacy (2009) who explored the organizational commitment of nurses in an acute care hospital setting. Although her measures of firm performance and quality were extensive, only 11 different questions were included due to fact that the number of questions had to be limited in the questionnaire. An example question is *I get support and guidance from my supervisor.* Cronbach's alpha was run on the data to verify the reliability of the scale, which was .682, which indicates a fairly reliable scale (Nunally, 1978).

5. Results

5.1 Background of Pakistan Hospital and Medical College

PHMC was established in 2001 and is a premiere facility of the area being one of the first establishments of its kind offering medical services of an international standard. PHMC has a 300 bed hospital along with a medical school (established in 2010), a nursing school (established in 2008), and Allied Health Services school (established in 2012). PHMC also consistently invests in new technologies and includes state of the art equipment including a CT Scanner, angiography machine, dialysis machines, MRI machine, color Doppler and a new 128 slice CT scanning machine. In terms of HR, PHMC has embarked on a new path and is aggressively pursuing effective implementation of HR practices and has gone from a staff of only four HR employees to 21 within the past year. Currently, the organization is also undergoing the ISO certification process (as developed by the International Organization for Standardization).

Some changes are obvious in the results of the study, while others have yet to show an effect on operations.

5.2 Comparison to the TSRA

In Table 3, a summary of the qualitative data including the 12 HR practices of the HPWS is presented along with the mean score for each HR practice area. Since 4.0 is the median of the Likert scale, any HR practice whose mean was five or above was considered to demonstrate an above average practice. Any mean value below 5.0 was further examined. Although this evaluation criterion is inferential, it does provide some guidance in combination with the qualitative data.

Table 3: TSRA Summary of Qualitative Data with Mean Scores

HR Practice	Mean	Major Findings	Comment by Employee if available
Training	4.52	Lack of new employee orientation and systematic training.	*"I had no guidance whatsoever. For three, four months I didn't even know what departments existed in PHMC".*
Compensation	3.31	Inequitable pay, low salary compared to competitors, no contingent pay	*"Setting the wage upon hiring is a bargain, and you bargain with what you have."*
Recruitment & Selection	4.54	Evidence of best practices such as panel interviews, large candidate pools, an online job portal and hiring based on job descriptions and specifications.	
Employee Participation & Empowerment	3.79	Teamwork culture exists, but there's a lack of employee participation in decision-making.	*"I've experienced even the CEO changing his decision based on my recommendation."*
Performance Management	4.22	Employees do not see performance evaluations, not used to enhance performance	*"I never saw my appraisal form. I never signed it. I don't know what they've written on it, and it's at year end in December, and if my manager is in a bad mood, then I will not be getting any good increments even though I've worked very good the last 11 months."*

Promotions	4.02	Internal promotion usually not done, ineffective career development of current employees.	A nurse left and then asked to come back with a pay increase after she had already left.
Teams	5.06	Departmental teamwork evident, cross-functional teams not used.	
Formal Grievance Procedures	4.21	Formal grievance procedure not existent although HR dept filling this unpublicized role.	
Information Sharing	3.58	Information sharing discouraged	'*Everything is on a need to know basis'*.
Job Design	5.14	Job descriptions developed and communicated; employees fully aware of their duties and responsibilities	
Differentiation HR Practices	4.21	Knowledge sharing exists with doctors only, not in departments. Egalitarian treatment non- existent.	
Firm-Specific HR Practices	4.72	Large range of services for customers, tuition assistance for employees, comprehensive benefit package, investment in new technologies, employees used to change.	

5.3 Research Question Results

Five research questions were formulated for this study. The first question regarding how HR is implemented in a private Pakistani hospital has been presented above. The second question asks:

Is the TSRA appropriate for the cultural context of Pakistan?

To examine this question, it is necessary to look at the mean scores for individual HR practices as well as consider the qualitative data as well. In Table 4, descriptive statistics are presented. Three HR practice areas are below 4.0 including *compensation, information sharing* and *egalitarian treatment,* which is one component of the *differentiation HR* practice area. Since the scores are so low regarding these areas, it must be considered if culture plays a role in these variables. In terms of compensation, it seems employees are unhappy with wage levels and compensation pay. This is not related to culture but related to the management of PHMC. If employees feel well compensated, they will exert more discretionary effort which can make a difference in firm performance. Information sharing has only a 3.58 mean and data collection shows a strong affinity from management of keeping things private. Based on personal knowledge and discussion with colleagues, in Pakistan, keeping financial, organizational, and

strategic information confidential is typically the norm inbred in the culture, so it is not surprising to note PHMC's lower score in this area. However, although this is an area that seems to be consistent throughout Pakistan, this is not necessarily related to the culture of Pakistan. This is more so related to the business context in general and many firms across the world consider this same issue and share a similar mindset as PHMC. Finally, egalitarian treatment, which is part of the differentiated HR practice area, has a mean of only 3.39. This indicates that in PHMC there are vast differences between how different employees are treated. This is consistent with Khilji (2003) who states that Pakistan has been influenced by the British dominion, which created what she calls an elite culture in which salary differentials between executives and entry-level employees may be as high as 800%. This is consistent with the previously mentioned compensation information as well. Although equal treatment of employees breeds cooperation and commitment from employees, a culture that is so accustomed to otherwise, cannot reap such benefits. Therefore, it is suggested that egalitarian treatment be excluded from the TSRA in order to measure HPWS's in Pakistan.

Table 4: Descriptive Statistics of HR Practices

Variable	Number	Mean	Standard Deviation
Training	90	4.5244	1.36621
Recruitment	90	4.5417	.83317
Compensation	90	3.3093	1.02757
Performance Management	90	4.2241	1.23006
Promotion	89	4.0225	1.49983
Information Sharing	90	3.5778	1.17139
Job Design	86	5.1395	1.89217
Teams	89	5.0562	1.12168
Participation & Empowerment	89	3.7876	.95117
Formal Grievance	86	4.2093	1.65292
Differentiation	89	4.2058	.96483
Firm Specific	90	4.7185	1.15190

Next, the following research question is addressed:

> *Based on the TSRA, to what extent has PHMC implemented a high performance work system?*

To answer this question, the full HPWS index has been used; however, given the answer to the research question above about culture, egalitarian treatment has been removed from the HPWS index. The mean score therefore is 4.2791. To look at a percentage of this same number, we can convert it to 61%; however, this percentage is higher than the actual HPWS index score because when you convert to a percentage the result is actually scaled up.

In order to determine if this score is low, average or high, we refer to Becker and Gerhart's (1996) discussion when they discuss how much a company 'gets into the game', or how much they implement HR practices (p.788). They state firms in the 0 to 20^{th} percentile range are moving from HR being an obstacle impeding increased firm performance to more of a neutral ground. Firms in the 20 to 60% range implement best

HR practices; however, these improvements in HR are not enough to sustain a competitive advantage and affect firm performance. Firms in the 60 to 100% range arguably have implemented most if not all best HR practices, and more importantly they have intertwined them into their organization's system and therefore have created a competitive advantage with their HR system that significantly affects firm performance. Although this theory presented by Becker and Gerhart (1996) is inferential, it provides some benchmark to follow in this study. Therefore, a percentile score of 0 to 20% would be considered low. A score of 20 to 60% would be considered average and a score from 60 to 100% would be considered high. Thus, the HPWS index score of 4.2791 or 61% would actually be considered an average to high HPWS score. Therefore *hypothesis 1* is rejected. However, although PHMC has taken proactive steps and is currently implementing some aspects of an effective HPWS, there still is room for growth. In order to obtain maximum benefit from HR practices, PHMC needs to be on the higher side of the index rather than on the average to high side.

The next question is:

Is the TSRA a reliable model to measure an HPWS in Pakistan?

Cronbach's alpha was checked on the HPWS index data and was .916. According to Nunnally (1978), any value above .70 could be taken as an acceptable reliability level. Also, the three separate components that make up the HPWS index, universalistic, differentiation, and firm-specific HR areas, all had acceptable reliability levels of .834, .771, and .795 respectively. This indicates that *hypothesis 2* is accepted as the HPWS scale is reliable to use to measure an HPWS in Pakistan.

The last research question is:

Does an HPWS have a significant effect on firm performance?

SPSS 16.0 was used to analyze the data. Table 5 provides the means, standard deviations and correlations between the three separate areas of the HPWS as well as firm performance and the HPWS index. In this analysis, it can be seen that all HR practice areas are significantly correlated with firm performance. Convergent validity of the HPWS scale is also shown as each area of the HPWS scale, i.e. universalistic, differentiation and firm-specific all have correlations of .641 or above. Tables 6 and 7 present regression analysis of each of the HR areas measured separately on firm performance in models 1, 2, and 3, and then measured altogether in one model in model 4. Before running regression analysis, the data were checked for linear regression assumptions. Independence was determined by the Durbin-Watson statistic of 1.636. Linearity of the data was shown with a plot of the observed verses the predicted values, and all points were symmetrically distributed along the diagonal line. The data were normal as suggested by the probability plot of the residuals in which all points fell close to the diagonal line, and heteroskedasticity was also not present due to the plot of the residuals verses predicted values, which showed no apparent pattern. Multicollinearity was also ruled out with a VIF of 1.0. R-squared for universalistic and differentiated HR practices were similar with a value of .506 and .447 respectively. However, in model 3, firm-specific HR practices, the R-squared value was much lower at .356. The R-squared value of all three HR practices combined together in model 4 is .542, which shows a change in R-squared of .036, .095, and .186 from the universalistic, differentiation and firm-specific models respectively. This result supports the fact that HR practices

combined in a system work together synergistically to affect firm performance (Becker & Huselid 1998; Datta, Guthrie and Wright 2005; Huselid 1995; Youndt et al. 1996). Model 5 essentially is the same measurement; however, it is the combination of the three different HR areas into the one HPWS index, which is then regressed on firm performance. The R squared value is .526 with p<.000, which shows that the HPWS index is a good predictor of firm performance. This result further supports *hypothesis 3* that states an HPWS does have a positive impact on firm performance at PHMC.

Table 5: Means, Standard Deviations and Correlations

Variable	**Mean**	**S.D.**	**1**	**2**	**3**	**4**
1. Firm Performance	4.4625	.79882				
2. Universalistic HR	4.2379	.81268	.712*			
3. Differentiation HR	4.2508	.91810	.669*	.793*		
4. Firm Specific HR	4.7185	1.15190	.597*	.735*	.641*	
5. HPWS Index	4.2791	.81229	.725*	.994*	.830*	.791*

* Correlation is significant at the .01 level. N=86

Table 6: Results of Regression Analysis for TSRA Components Individually Regressed on Firm Performance

	Model 1		**Model 2**		**Model 3**	
Variable	**Beta**	**S.E.**	**Beta**	**S.E.**	**Beta**	**S.E.**
Constant	1.509	.318	1.989	.302	2.513	.289
Universalistic	.698*	.074				
Differentiation			.582*	.069		
Firm Specific HPWS Index					.412*	.059
R^2	.506		.447		.356	
N	86		86		86	

* P <.000 ** P < .05

Table 7: Results of Regression Analysis for TSRA Components together and HPWS on Firm Performance

	Model 4		Model 5	
Variable	**Beta**	**S.E.**	**Beta**	**S.E.**
Constant	1.380	.314	1.426	.315
Universalistic	.404*	.137		
Differentiation	.231**	.106	.582*	.069
Firm Specific	.083	.077		
HPWS Index			.711	.072
R^2	.542		.526	
ΔR^2	.036, .095, .186		.526 .02, .079, .17	
N	86		86	

* P <.000 ** P < .05

6. Discussion

Through qualitative and quantitative means, data were collected regarding the extent of HPWS implementation at PHMC. The triangulation of data was conclusive and provided several notable findings. First, in terms of implementing a complete HPWS, PHMC still needs improvement as weaknesses exist in each practice area of the TSRA. Teams and job design are the only variables which are above a 5.0 mean. Profound weaker areas include compensation, employee participation and information sharing; however, all areas of the HPWS index do need improvement. In terms of empirically testing the HPWS index, it was proven through a reliability rating of .916 that the HPWS scale is reliable to test an HPWS in the Pakistani context. This, however, includes the exclusion of *egalitarian treatment* from the differentiation portion of the HPWS index as this variable is not appropriate for the Pakistani cultural context. In future studies, the TSRA should be effective in measuring Pakistani HPWS's.

All HR areas need improvement; however, a few areas stand out that are consistent with other Pakistani companies and should be addressed. Performance appraisal (4.22 mean) is one area that needs improvement. Currently, the organization is not using performance appraisal as a means to improve performance but only to monitor acceptable performance. Although this is consistent with many other Pakistani companies, this does not warrant its exclusion from the HPWS scale as a focus on performance appraisal can improve firm performance. Compensation and training are other areas that need improvement. However, PHMC has taken proactive steps in the last year to improve these areas. Information sharing is a concept that receives extreme opposition in the Pakistani environment and in the developed world as well. However, high performing firms are beginning to recognize that information sharing can have a tremendous impact

on the bottom line. Pfeffer (1998) states information sharing is important for two reasons: to show employees you trust them and to help employees make appropriate decisions for the benefit of the company. The developed world has also seen a lot of opposition to information sharing; however, many companies have effectively incorporated information sharing in their HR systems (Pfeffer, 1998). Recruitment, promotion, employee participation and formal grievance procedures also all need improvement. Recruitment seems to be on the right track as employees believe that the company hires skilled and knowledgeable employees (mean 5.17). However, they should still focus on increasing their candidate pool as much as possible as larger pools will help enhance labor productivity and better match employee skills with the job requirements (Qingxiong & McElroy, 2010). Promotions are typically filled from outside in PHMC. However, the company should consider developing their training program more and incorporating a career development program that could help the organization better build effective employees on the inside that could then be promoted to higher positions. This would then lead to improved employee morale and commitment. In terms of employee participation, although employees have moments in which their opinions are valued, they are rarely left on the front lines to make decisions on their own. Involving employees more fully in different improvement processes and delegating more authority to employees can improve job morale and employee commitment. Finally, the implementation of a formal grievance procedures system could enable employees to objectively voice their concerns, which then could eliminate problems that also lower morale and employee commitment.

In terms of examining the extent of HPWS implementation and its effect on firm performance, the data conclusively proved that PHMC is implementing a high performance work system to some extent. Breaking the HPWS index into its three respective areas also proved that each area in and of itself makes its own contribution; however, it was apparent that although firm-specific HR practices were correlated with firm performance, this correlation was weaker than the other two areas. This may be attributed to the nature of the questions of this area. As can be seen by the 1.15 standard deviation, it is clear that there was a wider variance of responses regarding firm specific HR practices. Despite this weaker correlation, when all three areas are combined together into one HPWS index, it is clear that the HPWS index has a positive effect on firm performance. With a one standard deviation increase in the HPWS, an increase of .725 is seen in firm performance. This shows PHMC that with further focus on improving high performance work practices in their organization, they can improve firm performance.

In future studies, the empirical data from this study can help researchers in assessing their HPWS systems. Although we cannot generalize the findings of an HPWS having an impact on firm performance to all hospitals in Pakistan due to the fact that this study was based only on one organization, we can, however, still reap scientific benefit from the data gleaned from this study. First, the HPWS was shown to have a good reliability of .916. Therefore, one major contribution of this study is the model that was created to measure an HPWS. This model can be applied in future empirical studies that measure an HPWS's effect on firm performance. Furthermore, the study brings to light many HR issues that are common in the Pakistani context, which helps businesses in planning human resource functions and helps researchers in future studies investigating the role of HR. To further research in this area, it is suggested that researchers endeavor to implement large scale empirical studies that use the TSRA to measure the effect of an

HPWS on firm performance in the Pakistani context. Although the TSRA was used specifically for a hospital environment, its use should be appropriate in multiple industries in Pakistan; therefore, future studies in other industries are also suggested.

7. Conclusion

PHMC has taken steps to ensure best practices in their organization and have implemented, to some degree, a high performance work system. Through data collection, it was shown that PHMC still has much room for improvement, especially in regard to compensation, empowerment, training and performance appraisal. As far as the TSRA is concerned, it was proven that it is definitely an appropriate model to measure firm performance in Pakistan; however, it was suggested that the egalitarian treatment of differentiated HR practices be removed from the HPWS scale. In terms of showing how an HPWS affects firm performance, it was clearly shown that the HPWS at PHMC positively and significantly affects firm performance. Although the findings of HR affecting firm performance cannot be generalized to other similar organizations due to the limitation that this was a single case study on one organization, the findings can be generalized to the theory that supports the study, i.e. the TSRA (Yin, 2003). In the future, researchers can use the TSRA to measure human resources in studies examining HR's effect on firm performance in the Pakistani context.

REFRENCES

Armstrong, M. (2003). *Human Resource Management Practice*. (9th Ed.). Sterling, VA: Stylus Publishing.

Bae, J. and Lawler, J. (2000). Organizational and HRM strategies in Korea: Impact on firm performance in an emerging economy. *Academy of Management Journal* 43(3), 502-517.

Barney, J.B. (1991). Firm resources and sustainable competitive advantage. *Journal of Management*, 17, 99-120.

Bartlett, J., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research appropriate sample size in survey research. *Information technology, learning, and performance journal*, *19*(1), 43-50.

Becker, B. and Gerhart, B. (1996). The Impact of Human Resources on Organizational Performance: Progress and Prospects. *Academy of Management Journal*, 39(4), 779-801.

Becker, B. and Huselid, M. (1998). High performance work systems and firm performance: A synthesis of research and managerial applications. *Research in Personnel and Human Resource Management*, 16, 53-101.

Cicchetti, D. V., Shoinralter, D. and Tyrer, P. J. (1985). The effect of number of rating scale categories on levels of interrater reliability : A Monte Carlo investigation. *Applied Psychological Measurement*, *9*(1), 31-36.

Datta, D., Guthrie, J. and Wright, P. (2005). HRM and Firm Productivity: Does Industry Matter?. *Academy of Management Journal*, 48(1), 135-146.

Delaney, J. and Huselid, M. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal,* 39(4), 949-969.

Delery, J. and Doty, D. (1996). Modes of theorizing in strategic human resource management: tests of universalistic, contingency and configurational performance predictions. *Academy Management Journal,* 39(4), 802-835.

Guest, D. and Conway, N. (2011). The impact of HR practices, HR effectiveness and a 'strong HR system' on organisational outcomes: a stakeholder perspective. *International Journal of Human Resource Management,* 22(8), 1686–1702.

Gupta, S. (2008). HR Practices that distinguish successful firms. *Advanced Human Resource Management: Strategic Perspective.* New Delhi, India: Abe Books.

Gurbuz, S. and Mert, I. (2011). Impact of the strategic human resource management on

organizational performance: evidence from Turkey. *International Journal of Human Resource Management,* 22(8), 1803-1822.

Guthrie, J., Flood, P., Liu, W. and MacCurtain, S. (2009). High performance work systems in Ireland: human resource and organizational outcomes. *International Journal of Human Resource Management,* 20(1), 112-125.

Huselid, M. (1995). The impact of human resource practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal,* 38(3), 635-872.

Jackson, S. and Schuler, R. (1995). Understanding human resource management in the context of organizations and their environments. In J. T. Spence, J. M. Darley, and J. Foss (Eds.), *Annual Review of Psychology,* 46, 237–264.

Khilji, S. (2003). Adapt or not to Adapt: Exploring the role of national culture in HRM: A study of Pakistan. *International Journal of Cross Cultural Management,* 3(1), 109-132.

Mendonca, M. (2000). Human Resource Management in the Emerging Countries. *Regional Encyclopedia of Business and Management: Management in the Emerging Countries.* London: Thomson Learning Business Press, 86–94.

Miles, B.M. and Huberman, M.A. (1994). *An expanded sourcebook: Qualitative data analysis,* (2nd Ed.). Thousand Oaks, CA., Sage Publications.

Naqvi, S. and Nadeem, S. (2011). Impact of high performance work practices system on

motivation. *The Interdisciplinary Journal of Contemporary Research in Business* 3(8), 197-210.

Nunnally, J.C. (1978). *Psychometric Theory,* (2nd Ed.).New York, Mc Graw Hill.

Pfeffer, J. (1998). *The Human Equation: Building Profits by Putting People First,* Boston, MA, Harvard Business School Press.

Porter, M. (1980). *Competitive Strategy: Techniques for analyzing industries and competitors,* New York, NY, The Free Press.

Qingxiong, W. and McElroy, J. (2010). HR environment and regional attraction: An empirical study of industrial clusters in China. *Australian Journal of Management,* 35(3), 245-263.

Sims, R. (2002). *Organizational Success through Effective Human Resource Management. Westport,* CT, Greenwood Publishing Group.

Treacy, C. B. (2010). *Organizational commitment of nurses in an acute-care hospital setting.* Webster University. [UnpublishedTheses].

Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: A resource-based perspective. *The International Journal of Human Resource management,* 5, 301-326.

Yin, R. (2003). *Case Study Research: Design and methods,* (3 Ed.). Thousand Oaks: Sage Publications.

Youndt. M., Snell, S., Dean, J. and Lepak, D. (1996). Human resource management,

manufacturing strategy, and firm performance. *Academy of Management Journal,* 39(4), 836-866.

Young, S., Bartram, T., Stanton, P. and Leggat, S. (2010). High performance work systems and employee well-being: A two stage study of a rural Australian hospital. *Journal of Health Organization and Management,* 24(2), 182-99.