AN EMPIRICAL INVESTIGATION OF SUB DIMENSIONS OF HIGH PERFORMANCE WORK SYSTEMS THAT PREDICT ORGANIZATIONAL INNOVATION

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ABSTRACT

Driven by calls for empirical research, this paper aims to contribute to a deeper understanding of the specific sub-dimensions of high performance work systems (HPWS) that drive organizational innovation. To this end, data were gathered from a sample of 240 motel establishments in the USA. In sum, the paper found empirical evidence indicating that only two out of three sub-dimensions of HPWS predicted organizational innovation. Specifically, these two sub-dimensions relate to "Administrative HR" practices and "Merit-Based HR Evaluation" sub-dimensions. Finally, the academic and managerial significance of the study's outcome are presented.

JEL: MOO, M1, M2

KEYWORD: Hierarchical regression, Organizational innovation, High performance work systems

INTRODUCTION

It is well documented that there is a positive link between a firm's human resource practices subsumed under the rubrics of high performance work system (HPWS) practices, and various organizational outcomes (Huselid, 1995; Warech & Tracey, 2004) including organizational innovation (Messersmith & Guthrie, 2010; Carldon, Upton & Seaman, 2006; Soutaris, 2002; Hostager et al., 1998), productivity (MacDuffie, 1995; Guthrie, 2001, employee turnover (Way, 2002; Guthrie, 2001; Arthur, 1995), and financial performance (Huselid, 1995; Lee & Miller, 1995).

With specific focus on organizational innovation, evidently managers (Moosa & Panurach, 2008) and academics (Messersmith & Guthrie, 2010) are passionately interested in the predictors of organizational innovation, and that is why research employs various model specification of high performance work systems to predict organizational innovation (Messersmith & Guthrie, 2010; Guthrie, 2001). Evidently, even though previous research has sharpened scholarly understanding of the impact of high performance work system (HPWS) on organizational innovation (OI), research gaps still remain especially in the hospitality industry where scholars attest to serious research gaps on hospitality innovation (Rogers, 2007; Chan et al., 1998). For example, Chang, Gong and Shum (2011: 813) observed that "although there is some support for the importance of HRM in promoting hospitality innovation, as mentioned above, rigorous and systematic investigation is lacking." In addition, they stated that "…little empirical research has been conducted of the effects of HRM practices on hospitality innovation." Evidently, this is a critical research void.

However, the present study focuses on yet another specific research gap in the extant literature related to the observation that previous research has assumed that all the sub-dimensions of the HPWS construct can predict organizational outcomes (Martin-Tapia, Aragon-Correa & Guthrie, 2009; Messersmith & Guthrie, 2010). Evidently, because this assumption is questionable (Werner, 2011), it has become a critical research gap to be filled (Werner, 2011); namely: researchers should empirically investigate the

sub-dimensions of HPWS that predict organizational outcomes such as organizational innovation. To this end, Werner (2011:920) vehemently stated that:

> *Clearly some sub-dimensions of the HPWS are more important than others…future studies should not only focus on refining the construct, but also delve into the sub-dimensions and their effects…*

In response to Werner's (2011: 920) call for research, the purpose of our study was to empirically uncover the specific sub-dimensions of the HPWS construct that would predict organizational innovation (both incremental and radical innovation). Hence, our research objective is to seek answers to the following two sequential research questions posed by (Werner, 2011: 920):

Research Question 1: How many sub-dimensions underlie the HPWS construct?

Research Question 2: How many of the sub-dimensions of HPWS can predict organizational innovation?

The remainder of this paper is structured as follows. The literature review section discusses the salient conceptual and primarily empirical literature linking the extant high performance work practices systems (HPWS) to organizational innovations, thereby building a theoretical platform for the study. Following this, the methodology section presents the data sources and variable measurement issues of the study. Next, the results of the study are compactly articulately presented. Finally, a concluding section wraps up the discussion of the study with the academic and managerial significance compactly presented.

LITERATURE REVIEW

Arguably, organizational innovation is the chief among the drivers of corporate performance, especially in the hospitality industry (e.g., Chang, Gong & Shum, 2011; Ottenbacher & Gnoth, 2005, 2007; Moosa & Panurach, 2008; Ottenbacher & Harrington, 2007; Subramaniam & Youndt, 2005; Lloren-Montes et al. 2005; 2004). As a key strategy variable driving firm performance, organizational innovation enables hospitality managers to perform a wide range of functional operations that allow them to outperform their competitors at a profit (Ottenbacher & Gnoth, 2005; Sharma & Raj, 2003). Clearly then, both radical and incremental innovation are organizational capabilities in that these are business processes that allow a firm's strategic initiatives to be implemented (Amit & Shoemaker, 1993). Compactly stated, by radical innovation we mean breakthrough innovation. Similarly, by incremental innovation we mean discontinuous innovation (Koen et al. 2010). However, as important as innovation is to managers and practitioners, it remains surprising that "hospitality innovation is an understudied area" (Chang, Gong & Shum, 2011: 812), and its predictors are not well understood and researched (Sharma & Raj, 2003). As a consequence of this, hospitality industry managers lean on their hunch for matters that relate to corporate innovation strategic decisions (Ottenbacher & Gnoth, 2005). Thus, in the hospitality industry (Chang, Gong and Shum, 2011), managers (Moosa & Panurach, 2008) and academics (Messersmith & Guthrie, 2010; Tajeddini, 2010) keep searching for the predictors of organizational innovation.

Consequently, the search for the predictors of organizational innovation began to focus on developing conceptual and empirical models of high performance work systems (HPWS) practices on the assumption that HPWS would predict organizational outcomes including innovation (Rogers, 2007). As a system of work practices that are designed to operate holistically rather than individually (Huselid, 1995), HPWS directly impact organizational innovation (Zahra et al., 2000; Hayton, 2005). In reality, however, because HPWS is a multi-dimensional construct (Martin-Tapia, Aragon-Correa & Guthrie, 2009; Huselid, 1995), it should not be expected that all the sub-dimensions of HPWS would have predictive effects on organizational innovation. Given this expectation, calls for empirical research to investigate which sub-

dimensions of HPWS can really predict organizational innovation---started to emerge (Werner, 2011) as indicated in the introduction section of the present study.

It is noteworthy that even though the notion of R&D is well established in the product market (Schumpeter, 1934; Soutaris, 2002), in the service industry R&D takes a different form because of the simultaneous production and consumption of services---whereby, the service consumer is a co-producer of services (Ottenbacher & Harrington, 2007). Specifically, in the hospitality industry as an example, frontline customer contact employees such as waiters and waitresses---are the R&D personnel actively involved in service innovation of the motels. That is, these frontline customer-contact employees interact with customers and receive feedbacks from those customers regarding service gaps. Then, these customer feedbacks become input data for new service development as well as service innovation for the hotel (Moosa & Panurach, 2008).

In this notion of service industry R&D, we note that because the customer-contact employees are dispersed within the hotel in different departments where they provide services to the customers, it then means that the notion of R&D itself is dispersed within the boundaries of the service organization. This phenomenon has been dubbed decentralized R&D by Moosa and Panurach (2008), which is distinct from the notion of centralized R&D of tangible goods (Moosa & Panurach, 2008). Then, the question arises: what is the bottom line of this notion of decentralized R&D? The bottom line demands that decentralized R&D be a strategic priority of managers to identify, articulate, and leverage the bundle of HR practices related to selection, training, performance management, compensation of employees involved in decentralized R&D under the rubrics of the high performance work systems (HPWS) practices. This way, the HR practices subsumed under HPWS will strategically benefit organizational innovation and predict it. Here again, our analysis bumps head-on into our key research question stated above; namely, which sub-dimensions of HPWS will predict organizational innovation (Werner, 2011)?

Yet, from the perspective of the extant global economies characterized by dynamically competitive environments, organizational innovation has become the epicenter of corporate strategy for achieving sustainable competitive advantage (Nonaka, 2007; Spender, 1996) as well as the key for corporate survival (Hurley & Hult, 1998). Undoubtedly, absent organizational knowledge base embedded in employees within the decentralized corporate R&D, organizational innovation will be nonexistent (Cohen & Levinthal, 1990; Nonaka & Takeuchi, 1995). Likewise, absent organizational learning, organizational knowledge base will be nonexistent (Grant, 1996). Then, here again---absent organizational employees embedded in HR practices under the HPWS construct, organizational learning will varnish. Here, we underscore the critical link with high performance work systems (HPWS) practices as a dynamic capability embedded in employees (Huselid, 1995).

Therefore, corporate innovation strategies are embedded in employees and driven by employee knowledge, expertise and commitments as the drivers of value creation and new ideas (Ottenbacher & Harrington, 2007). Accordingly therefore, it should be expected that some sub-dimensions of the HPWS construct will predict organizational innovation but the exact number of HPWS sub-dimensions that can predict organizational innovation remains a black box (Werner, 2011). As such, a two-pronged analytical strategy was employed to answer the research questions of this study. First, a data reduction algorithm specifically principal component analysis (PCA), was used to determine the number of sub-dimensions of HPWS underlying our raw data. Second, the resultant sub-dimensions of HPWS were then entered in the organizational innovation prediction equation, after controlling for other potential predictor of organizational innovation as shown in the methodology section.

METHODOLOGY

Data Collection

Indeed, this study is a part of a large project in which data were gathered on selected marketing and management constructs. By December 2011, one of the authors of this study requested and generously received a database of 1, 503 hotels classified as "motels" from the Center for Business and Economics Research, the University of Alabama, Tuscaloosa, Alabama. By this process, motels were our sampling unit and thus the unit of analysis of this study. Then, a random sample of 599 motels was drawn from this list of 1, 503 motel. These 599 motels had the following pieces of information: motel names and physical address, the executives first and last names, phone numbers and website (if available).

Using the phone numbers on this list, we contacted some of the executives designated as owner/manager, president, director, and other such designees---prior to mailing out our questionnaires to them. The call served a dual purpose. First, it allowed us to confirm the currency and reliability of information on each of the 599 motels. Second, it allowed the confirmation of the potential respondents for the questionnaires as some motels had more than one executive. For example, some had presidents and directors concurrently, yet these were different individuals. Hence, we asked that only one executive should fill out the questionnaire on behalf of each motel. Again this process confirms that the unit of analysis for the study is the motel, not the executive representing the motel.

Consequently, using a first class mail, we sent the following to the potential executive respondent: (1) the questionnaire survey, (2) a cover letter explaining the purpose of the study and its benefits to the motel sector in the State of Alabama, (3) a pre-paid self-addressed envelope to return the completed questionnaire. Then, two weeks later, we had 200 completed and returned questionnaires on hand. At this juncture, we made more calls and sent *Thank You cards* to both those who responded and those who did not yet respond. Because we observed that most of the respondents were of India origin, we gave them post cards that reflect their rich Indian heritage in the hope that this strategy would increase the response rate. Surprisingly, we received additional 59 completed and returned questionnaires. Altogether, at this stage, we had 259 questionnaires. Of this number, 19 were not useable due to errors, omissions, and the like. Thus, we had 240 usable questionnaires---a response rate of 40% (240/599) which may be ascribed to the steps described above. Finally, using some demographic variable along with some questionnaire items of the study variables, a t-test suggested no statistically significant differences between the first and the second waves of responses to the survey.

Finally, a recurrent problem of postal surveys particularly in the hospitality industry is low and non-response rates. Research by Keegan and Lucas (2005) examined this issue and offered suggestions. Therefore, we juxtaposed Keegan and Lucas (2005) with other works including Newby, Watson, and Woodliffe (2003), to maximize response rate for this study in the following ways: (1) a binding anonymity contract was established between the respondents and us by agreeing that their names and the names of their establishment were not on the questionnaire, nor revealed to a third party, (2) the questionnaire contained no sensitive information (dollar amounts of sales, yearly ROI, etc), (3) the support of the local chapter of the American Hotel & Lodging Association, was obtained confidentially, and (4) benefits of the study to the hotel industry in the State of Alabama, were underscored.

Variable Measurement

Organizational Innovation (OI): As discussed above, the dependent variable of this study was organizational innovation (OI) with dual components; namely, incremental and radical innovation. These were measured using item developed by Subramaniam and Youndt (2005) as recently used by Chang, Gong and Shum (2011, 814, 818). On this instrument, respondents were asked to compare their

companies with their competitors on each of the statements on incremental and radical innovation. Each of those six five-point Likert items were anchored as follows: "1" represents 0-20% for strongly disagree, "2" represents 21-40% for disagree, "3" 41-60% for neutral, "4" 61-80% for agree, and "5" represents 81-100% for strongly agree. Of course, this form of measurement is not new to empirical research in management as can be found elsewhere (Martin-Tapia, Aragon-Correa & Guthrie, 2009).

High Performance Work Systems (HPWS) Practices : In this study, we conceptualized and then measured high performance work systems (HPWS) practices by drawing from some past landmark research on it (e.g., Huselid, 1995; Martin-Tapia et al., 2009; Wright et al., 2005; Shih, Chiang & Hsu, 2006). This way, the present study joins other works that have endorsed this aggregation approach to HR practices tied to HPWS (Huselid, 1995; Martin-Tapia et al., 2009; Wright et al. 2001). Concurring with this approach, Messersmith and Guthrie (2010: 242) measured HPWS practices as "a set or bundle of human resource management practices related to selection, training, performance management, compensation, and information sharing that are designed to attract, retain, and motivate employees."

Control Variables: To rule out the potential confounding effects of some variables that may have predictive effects on organizational variables (OI), some theoretically suggested control variables were directly entered into the estimation model: firm size and firm age. Focusing on firm size in a particular industry, the amount of resources small firms deploy towards organizational innovation may not be proportionate to their size as they may deploy more resources relative to their size (Rosen, 1991). Second, even though large firms may deploy more resources to R&D, production equipment, and marketing campaigns relative to small firms, they typically do so by selecting less risky projects that may entail less radical innovation (Rosen, 1991). Therefore, logarithmic function of total employees was the index of firm size used this study (Blonigen & Taylor, 2000). Likewise, firm age was measured by the natural logarithm of the number of years a firm has been in business. Our theoretical justification follows previous works suggesting that younger firms typically pursue more radical innovations than older firms (Huergo & Jaumandreu, 2004; van Geenhuizen & Gonzalez, 2007).

Statistical Analysis

Principal Component Analysis of HPWS: As was explicitly discussed in the research objective of this study, it was imperative to first ascertain the number of sub-dimensions underlying the HPWS construct. Once this number is ascertained, each HPWS sub-dimension was then regressed on organizational innovation (OI) and then tested for its statistical significance as a predictor of OI, as called by Werner (2011: 920). Therefore, a principal components analysis (PCA) was conducted to determine how many sub-dimensions or components were underlying the High Performance Work Systems (HPWS) practices data set. However, prior to the PCA, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.814) and Bartlett's Test of Sphericity (X^2=3585.2/78, p<0.000), suggested that the HPWS data set was not an identity matrix, and should then be subjected to PCA. As reported in Table 2, guided by Varimax rotation and Eigenvalue >1 criteria, a three-factor solution that explained 83.13% of the variance in the HPWS data set (α =0.88), emerged from the PCA.

Hierarchical Multiple Regression (HMR) Models: In the framework of this sequential statistical model estimation, once the PCA indicated that our HPWS data set has three sub-dimensions, the next step was to fit three hierarchical multiple regression (HMR) analysis models, so that each of the three HPWS sub-dimensions is tested for its specific statistical power to predict organizational innovation (IO), after controlling for firm size and firm age as potential rivalry predictors of OI, as discussed above. The three hierarchical multiple regression models fitted were as follows.

$$I = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 HPWS_1 + e_i \quad (1)$$

$$I = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 HPWS_2 + e_i \quad (2)$$

$$I = \beta_0 + \beta_1 FS + \beta_2 FA + \beta_3 HPWS_3 + e_i \quad (3)$$

where β_0 is the intercept, I is organizational innovation, *FS* is firm size, *FA* is firm age, *HPWS* is high performance work systems construct subscripted 1, 2, and 3 corresponding to HPWS sub-dimensions 1, 2, and 3, respectively, and $e_i, i = 1,2 \ldots N(240)$, is white noise error term. Hierarchically, the estimation proceeded as follows. In each of these three HMR models fitted, the variance accounted-for by firm size and firm age was controlled by entering them as a block in step 1 of the analysis, and then main effect (that is the i-th sub-dimension of HPWS) was entered in step 2 of respective models, as shown in Table 3.

EMPIRICAL RESULTS

The demographic characteristics of the respondents are reported in Table 1, 59 % (males) and 41% (females), and their age ranged from 18 years to 61 and above. About 65% are married. In terms of education, about 48% have bachelor's degree, 21% (Master's), and so on.

Table 1 Demographic Characteristics of the Respondents (N=240)

Gender		**%**
Male		59.0
Female		41.0
Age	18-30	30.19
	31-40	31.00
	41-50	16.39
51-60		20.92
61 and above		1.50
Marital Status		
	Married	64.59
	Single	35.41
Education		
	High School or below	14.31
	University/College Adult Student	12.20
Bachelor's Degree		48.03
	Masters/Doctorate	24.1
	Doctorate	1.36

The demographic characteristics of the respondents are reported in Table 1, 59 % (males) and 41% (females), and their age ranged from 18 years to 61 and above. About 65% are married and about 35% are single. In terms of education, about 14% of the respondents had higher school or less than that, about 12% were college adult students, about 48% had bachelor's degree, 21% (Master's), and only 1.36 % had a doctorate degree.

As reported in Table 2, the rotated components of the HPWS data set revealed that the HPWS has three sub-dimensions (components). To save space, the specific human resource practices of each sub-dimension is clearly stated in Table 2, and thus not catalogued here. Instead, the labels we ascribed to each sub-dimension were discussed. The results of the three hierarchical multiple regression (HMR) models are reported in Table 3. These results are encouraging for the following reasons. First, only two out of the three sub-dimensions of HPWS predict organizational innovation (OI). This result is underscored as it lends solid support to the central objective of this study based on the call for research by Werner (2011); namely, it should be expected (and now empirically shown in this study) that not all sub-dimensions of the HPWS construct predict organizational outcomes (OI in this study). Specifically, of the three sub-dimensions uncovered in this study, only two sub-dimensions predicted organizational innovation after we have accounted for the predictive effects the control variables. We now discuss the statistical significance of each of the three sub-dimensions

Table 2: HPWS Data Set: Rotated Component Matrix: alpha=0.88

HPWS Variables	**Principal Components**		
	1	2	3
1) What percentage of employees gets a promotion giving more importance to their performance than to other factors such as seniority, qualifications, skills, etc.?	0.839		
2) What percentage of employees has joined your firm during the last two years?	0.923		
3) What percentage of the total number of employees hired by your firm in one year receives formal training during their first year in your organization?	0.812		
4) What percentage of employees receives formal training after the first year working for your organization?			0.962
5) What percentage of employees is subject to a formal evaluation of their working performance?			0.967
6) What percentage of employees receives a pay rise linked to the evaluation of their performance?	0.907		
7) What percentage of employees has jobs where performance evaluation is made using an objective measure (e.g. sales volume, number of requests attended objective fulfillment, etc.)?	0.926		
8) What percentage of employees have available incentive plans linked to the organization's profits?	0.800		
9) What percentage of employees own shares or stocks of your company?	0.895		
10) What percentage of employees receives formal information (for example, through an information bulletin or regular meetings) about a wide range of issues relevant for the firm and its operations?	0.881		
11) What percentage of employees regularly has to answer a questionnaire about work climate, attitude or satisfaction?		0.814	
12) What percentage of employees has jobs which are subject to a formal analysis of the workplace and its characteristics?		0.937	
13) What percentage of employees is included in some system or program (e.g. quality circle) in order to be able to participate in the firm's decision-making processes?		0.890	
Eigenvalues	**6.670**	**2.308**	**1.844**
% variance	**47.532**	**20.809**	**14.908**
Cum. Explanation	**47.532**	**68.340**	**83.248**

Table 2 reports the results of a principal components analysis (PCA) conducted to ascertain the number of sub-dimensions or components were underlying the High Performance Work Systems (HPWS) practices data set. Prior to the PCA, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.814) and Bartlett's Test of Sphericity (x^2=3585.2/78, p<0.000), suggested that the HPWS data set was not an identity matrix, and should then be subjected to PCA. As reported in Table 2, guided by Varimax rotation and Eigenvalue >1 criteria, a three-factor solution that explained 83.13% of the variance in the HPWS data set (α=0.88), emerged from the PCA.

Sub-Dimension 1

As reported in Model 1 of Table 3, sub-dimension 1 of HPWS (which is the same as component 1of Table 2), predicted organizational innovation in the framework of hierarchical multiple regression (HMR) analysis. Specifically, hierarchically we entered the control variables as a block in step 1, and then we entered HPWS sub-dimension 1 as the only independent variable of interest in step 2, as detailed in Table 3. As reported in Table 3, notice that by adding HPWS sub-dimension 1 to the estimation model equation, the variance in Organization innovation (OI) accounted-for solely by sub-dimension 1, was highly statistically significant $\Delta R^2 = 0.025;\ \Delta F_{1,236} = 39.8; p < 0.05$. In addition, no variance inflation factor (VIF) reached a value of 2 and above suggested by Neter et al. (1990) at which multicollinearity problems occur in such statistical analysis, and this conclusion applies to sub-dimensions 2 and 3 for models 2 and 3, respectively in Table 3. What then is the substantive meaning of the statistical significance of HPWS sub-dimension 1? As reported in Table 2, we found that this sub-dimension 1 encompassed some typical HR practices such as promotion, formal training, and performance-based incentives. Previous research (Martin-Tapia et al., 2009) labeled this sub-dimension "Administrative HR" practices. Thus, by holding constant the differences in countries of origin and industry types, we followed Martin-Tapia and his colleagues to label this sub-dimension 1 "Administrative HR" practices.

Sub-Dimension 2

As reported in Model 2 of Table 3, HPWS sub-dimension 2 which is the same as component 2 of Table 2, failed to predict organizational innovation (OI). Specifically, in the framework of our hierarchical multiple regression (HMR) analysis, we entered the control variables as a block in step 1 of the analysis. Then, in step 2 of the analysis we entered HPWS sub-dimension 2 and we observed that it failed to predict OI after the variance in OI accounted-for by the set of control variables, were controlled $\Delta R^2 = 0.025;\ \Delta F = 0.210; p > 0.05 = 0.647$. Of course, the t-statistics on HPWS sub-dimension 2 (t=0.458), draws the same conclusion that HPWS sub-dimension 2 failed to predict OI even when the variance of OI accounted-for by HPWS sub-dimension 2, was controlled.

As reported in Table 2, the HR practices subsumed in HPWS sub-dimension 2 are the HR practices related to what we labeled "Work Environment HR" practices such as employee perception of work climate and employee decision-making autonomy. Substantively, we would infer that the failure of sub-dimension 2 to predict OI can be interpreted to mean that managers should strategically avoid or minimize resource deployment related to HPWS sub-dimension 2 which we labeled "Work Environment HR" practices. By this inference, it appears that those Work Environment HR practices may not be among the HR factors that promote OI.

Sub-Dimension 3

As reported in Model 3 of Table 3, sub-dimension 3 (which is the same as component 3 of Table 2), predicted organizational innovation in the framework of hierarchical multiple regression (HMR) analysis.

Table 3 Hierarchical Regression of Variables on Organizational Innovation (n=240)

Model 1					
	Beta (β)	t	Sig.	r^2	Δr^3
Step 1					
Constant	----	8.7	0.000		
Log FAge	0.158	2.45	0.015		
Log FSize	0.022	0.343	0.732		
Step 2					
HPWS Sub-dimension1	**0.377**	**6.314**	**0.000**	**0.025**	**0.025*****
Model 2					
	Beta (β)	t	Sig.	r^2	Δr^3
Step 1					
Constant	----	8.72	0.000		
Log FAge	0.158	2.45	0.015		
Log FSize	0.022	0.343	0.732		
Step 2					
HPWS Sub-dimension2	**0.030**	**0.458**	**0.647**	**0.025**	**0.025** ns
Model 3					
	Beta (β)	t	Sig.	r^2	Δr^3
Step 1					
Constant	----	8.7	0.000		
Log FAge	0.158	2.45	0.015		
Log FSize	0.022	0.343	0.732		
Step 2					
HPWS Sub-dimension3	**0**.030	**2.517**	**0.012**	**0.050**	**0.025** ***

*Table 3 reports the results of each of the three hierarchical regression models fitted for each of the three sub-dimensions of the HPWS construct. In that framework, each of the sub-dimensions was tested for its significance as a unique predictor of organizational innovation (OI). Overall, only two out of the three sub-dimensions of the HPWS appeared as significant predictors of OI. *,**, *** indicate significance at the 10, 5, 1 percent levels respectively, ns indicates non-significant. FAge is firm age, FSize is firm size.*

As shown in Table 3, hierarchically we entered the control variables as a block in step 1, and then we entered HPWS sub-dimension 3 as the only independent variable of interest in step 2. As reported in

Table 3, notice that by adding HPWS sub-dimension 3 to the estimation model equation, the variance in Organization innovation (OI) accounted-for solely by sub-dimension 3, was statistically significant $\Delta R^2 = 0.025;\ \Delta F_{1,236} = 6.3; p < 0.05$. Finally, as reported in Table 2, we found that this sub-dimension 3 was essentially related to "Merit-based HR Evaluation" and we labeled it as such "Merit-base HR Evaluation."

CONCLUSION

The study's concluding remarks are as follows. First, the goal of this study was to respond to the call for research by Werner (2011:290) asking management researchers to empirically ascertain those sub-dimensions of high performance work systems (HPWS) practices that could predict organizational outcomes including organizational innovation. Second, to this end, 240 motels were drawn from a random sample of 599 motels in a database of 1, 503 motels freely provided by the Center for Business and Economics Research, the University of Alabama, Tuscaloosa, Alabama. Obviously then, motels were the sampling unit of analysis of this study even though motel executives responded to the survey questionnaires used. Third, answers to the research questions were gleaned by subjecting the data to principal component analysis (PCA), and then to hierarchical multiple regression (HMR) analysis. Fourth, briefly stated---two of the three sub-dimensions of the high performance work systems (HPWS) practices, predicted organizational innovation (OI). Fifth, because this study is cross-sectional, there was the likelihood that it failed to capture dynamic shift in the population parameters of interest. This would not be the case if the study were longitudinal by design. In addition, to the extent that motels in the state of Alabama are unique, the results of this study cannot be generalized to motels outside the state of Alabama. Finally, future studies would aim to replicate this study using a sample of motels other than motels sampled in the state of Alabama. In doing so, such future efforts should consider the additional benefits ascribed to the use of longitudinal research design as suggested above.

Methodologically, our paper made a contribution by using a statistical approach that was capable of isolating the unique variations in organizational innovation due solely to the predictive effects of statistically significant sub-dimensions of HPWS. This way, our paper made a substantive contribution because academics now have a clue about the sub-dimensions of HPWS that drive variations in organizational innovation in response to Werner (2011) call for research. Managerially, the findings of our paper inform managers to strategically deploy their organizational assets to capture the benefits of those significant sub-dimensions of HPWS that would enhance their organizational competitive advantage, and more.

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