EXPLORING EMPLOYEE CONSCIOUSNESS OF HPWS AND COMMITMENT IN JAPANESE ORGANIZATIONS – AN EMPIRICAL APPROACH

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ABSTRACT

This paper explores the linkages between employee consciousness of the High Performance Work System (HPWS) and their commitment through a matrix approach. The impact of individual human resource practices in HPWS on employee outcomes is also investigated. The data collected came from the enquiry responses of non-managerial Japanese employees in sixteen companies in the Kanto region of Japan from around October 2008 to February 2009. The average response rate was 52% (n=227). Discriminant analysis reveals that HPWS, affective commitment and occupational commitment were the most important discriminant variables in the four predicted groups of HPWS-Commitment linkages. Hierarchical Ordinary Least Squares (OLS) regression indicates an increase in teamwork, employee participatory programs, and the sharing of company information with employees as human resource practices in HPWS that could increase employee commitment and reduce stress, though some practices could also increase job intensity. The research findings contribute to the extant literature in HPWS and employee psychology. The practical implications of the findings are also discussed.

INTRODUCTION

Past research has shown how strategic Human Resource Management (HRM) can be used to design a set or bundle of Human Resource (HR) practices (staffing, training, workplace flexibility, compensation, employee influence, performance evaluation) to improve organizational performances (Guest, 1999; Pfeffer, 1994) and increase employee commitment (Appelbaum, Bailey, Berg, & Kalleberg, 2000). Such HRM practices, supposed to be the best, are known as the High Performances Work System (HPWS) (Ramsay, Scholarios, & Harley, 2000) and are implemented in different economies in the world (Lawler, Chen, & Bae, 2000). However, increasing evidences of incorporating HR practices under HPWS, as performance appraisal and performance based pay systems in Japanese organizations, are said to have induced low levels of satisfaction and motivation in Japanese employees and have been linked to severe work pressures and strain on the permanent employees. Do these issues influence employee commitment of Japanese employees? There is a dearth of research producing empirical studies of employee consciousness of HPWS practices and its effect on employee outcomes in Japanese organizations. This paper attempts to fill this gap by investigating empirically how employee consciousness of HPWS and employee commitment are related in Japanese workplaces.

Consciousness is defined in this paper as employee cognition or perception of the organizational environment of the company's policies and practices (Burke, Borucki, & Hurley, 1992) which eventually goes on to shape employee behavior in the organization (Ostroff, Kinicki, & Tamkins, 2003) and influences employee job satisfaction (James & James, 1989). A survey targeting the non-managerial employees was conducted in sixteen Japanese companies around the Kanto region of Japan and the responses of 227 (52% response rate) were collected and analyzed for this purpose. This paper hypothesizes that the employee consciousness of HPWS and their commitment varies across the predicted four groups of non-managerial employees in Japanese organizations. It is important to identify these four groups and study their behavior to explore the employee consciousness of Japanese employees. If the discriminating variables between the groups and their inter-linkages could be identified, we could control them with appropriate HRM practices. The principal objectives of this study are: (i) to investigate the differences between the groups; (ii) to discriminate effectively between groups; (iii) to identify important 'discriminant' variables; and finally (iv) to detect which individual HRM practices in the HPWS have a significant relationship with the different forms of employee commitment and other behavioral outcomes. Statistical results show the employee consciousness of HPWS and commitment was correctly classified into four groups with 90.07% of the original group cases as per the author's prediction. As the paper unfolds, arguments regarding such linkages have been theorized and several statistical tools have been used to analyze the problem and to provide support to the hypotheses. In the end, a discussion on the findings with limitations is drawn to justify both academic and managerial implications of this paper.

HPWS

There are considerable arguments about which HRM practices actually constitute HPWS (Chaudhuri, 2009a; 2009b). This paper adapts a working definition of HPWS as a group or bundle of HRM practices that can incite employee commitment and thereby improve organizational performance. In the wake of an extensive literature survey of HPWS by the present author (Chaudhuri, 2009a; 2009b; Chaudhuri, 2010), the most widely referred HR practices were selected to the construct HPWS bundle in this study. They are: (i) selective recruitment; (ii) formal and continuous training; (iii) internal promotions or selections to fill vacant positions from within the organization; (iv) merit based promotions; (v) teams as a fundamental unit of organization; (vi) employee participation programs; (vii) performance based pay systems; (viii) formal performance appraisals (360°); (ix) development appraisals; (x) formal communication programs to keep employees informed about the firm; and (xi) regular use of employee attitudes survey.

HPWS AND EMPLOYEE COMMITMENT

Most authors believe HPWS can promote positive behavior in employees. The HRM practices, used in HPWS, have their sources in the soft Harvard model (Beer, Spector, Lawrence, Quinn-Mills, & Walton, 1984) organizational commitment as is found by Appelbaum et al. (2000), Takeuchi, Chen, and Lepak (2009), and Chaudhuri (2009b, 2009c). However, Godard (2004) and Ramsay et al. (2000) argued that HPWS can be exploitative and, if imposed upon workers, can also cause stress and strain, having a negative influence on the commitment levels of employees. Several authors have also argued that employee discretion can have effects which ultimately

intensify work and create stress, causing a split in the work/life balance and influencing employee affective commitment (Chaudhuri, 2009a; Chaudhuri & Oba, 2009). However, some stressors can also be exploited to increase employee affective and normative organizational commitment (Chaudhuri & Oba, 2009). Research has also shown stressors have a mediating role between HPWS and affective organizational commitment and occupational commitment (Chaudhuri, 2009b; 2009c).

THE SETTING OF THE STUDY IN JAPAN

Japanese management style now leans towards its American counterpart (like Management by Objectives (MBO)), in the weakening of seniority systems and the introduction of performance based evaluation systems for short-term goals, to name just two examples. However, researchers have doubted the transparency of the evaluation of employee performance in Japanese organizations and have linked this to low employee satisfaction and motivation (Nakamura, 2006; Tatsumichi & Morishima, 2007). An increase in workload per individual has occurred due to recent measures to reduce the workforce, and intensified competition among workers has resulted from the introduction of performance-based wage systems resulting in excessively long working hours (Japan Institute of Labor, 2003). Increased working hours have led to tiredness and depression amongst the Japanese employees (Ogura, 2006). Unpaid overtime or service overtime is very prevalent today and job burn out or *Kharoshi* is common in Japanese organizations (Genda, 2003). An official report released by the Ministry of Health, Labor and Welfare (2008), Government of Japan, suggests 61.8% of general employees suffer stress and anxiety in their work places, mostly due to issues of both the quality and quantity of work and human relations in the work place, among other reasons. Do these factors affect employee commitment? This makes the study of employee consciousness of HPWS and commitment in Japanese organizations relevant.

RESEARCH DESIGN

Previous authors such as Gerhart, Wright, McMahan, and Snell (2000), Macky and Boxall (2007), Purcell (1999), and Sparham and Sung (2007) have criticised the methodological approach to rely upon a single informant – the managers – to say which HR practices are being used in their organizations. Their opinions actually could be an anomaly from a reality in which the HPWS practices are actually followed in their workplaces. This fact is ignored by most of the authors leading to measurement error. Employee-level studies are also criticised as they tend to be occupational or organizational-specific or from employees of single firms, and are difficult to generalize the findings producing conflicting results (Godard, 2004). Questionnaires were thus targeted to the general, non-managerial employees in Japanese organizations to bridge this gap in the existing literature. Since Japanese culture still traditionally emphasize an interpersonal relationship (Hofstede, 1991) and a high context communication style (Hall, 1976), the author found it practical to consult with his research guide and faculty members to use their personal contacts to conduct the survey (Takeuchi, R., Lepak, Wang, & Takeuchi, K., 2007; Takeuchi, Chen, & Lepak, 2009). The author then took their personal letters of references along with a cover letter written in Japanese, to contact the officials in personnel departments (*Jinjika/jinjibu*) to seek an appointment for site visits and permissions to undertake this survey. Similarly, contacts were established with the Japanese trade and labor union officials for their cooperation

in this study. Responses from non-managerial employees were finally collected from multiple sources, including the HR heads of the companies and representatives belonging to the in-house (company) union members of RENGO (*Nihon Rodo Kumiai So Rengo Kai*), and affiliated organization *Soubu Chiiki Kyogikai*. The respondents were asked to fill out the questionnaires in most cases and collected from the survey sites. While in some other cases, the HR managers and the union officials were requested to follow up the matter with the willing participants and collect the answer sheet on our behalf (Lincoln & Kalleberg, 2003). The completed questionnaires were then asked to be returned to the author in prepaid self-addressed envelopes (provided by the author). There were no incentives and cash payments offered to any participants but as a part of Japanese custom, the author took small gifts (*omiyage*) as a token of gratitude to personnel managers of the companies and the union officials who assisted in the data collection process.

MEASURING INSTRUMENTS

As the target was native Japanese speakers, all the questions were translated into Japanese, initially by the author, following the general conventions of back translation as proposed by Brislin (1990) and then modified with the help of two academic guides of this author, Prof. H. Oba and Prof. C. Nakano. Both are native Japanese speakers and faculty members in Economics at Reitaku University. A 6 point Likert scale (very accurate = 6, accurate = 5, partially accurate = 4, partially inaccurate = 3, inaccurate = 2, and very inaccurate = 1) was applied to all measurement of all the variables used in the study. HPWS was measured by using 21 items (Cronbach α= .89) derived from Chaudhuri (2009a, 2009b). Stressors were measured adapting the 24 item scale (Cronbach α= .86) from Chaudhuri (2009b), Chaudhuri and Oba (2009). An employee commitment scale (Cronbach α= .82), comprising three forms of organizational commitment, was adapted from Meyer and Allen (1991) and an occupational commitment from Blau, Paul, and St. John, (1993). Interclass correlations (ICC 2) of all the three scales were all greater than ICC 1 and were above the acceptable level of 0.60 (Glick, 1995) confirming the use of mean aggregated responses of the employees as a single bundle to be appropriate. A job intensity scale (Cronbach α= .64) was adapted from Kalmi and Kauhanen (2005). Other scales were Affective (Cronbach α= .86), normative (Cronbach α= .61), continuous organizational commitments (Cronbach α= .62) adapted from Meyer and Allen (1991) and occupational commitment (Cronbach α= .75) adapted from Blau et al. (1993).

SAMPLE

Data was collected between October, 2008, and February, 2009, from 16 companies ranging from large conglomerates to small companies involved in various industries in the Kanto region of Japan. In total, 250 responses (52%) from non-managerial employees were collected, of which 23 were rejected owing to incomplete responses. Thus, 227 samples were found suitable for analysis. All the respondents in the study were native Japanese males (98%) and 73% of the respondents were married. Average respondents were divided within the age group (mean = 2.39, SD = 0.95) of 30 - 39 years old, which were the largest at 48%, followed by age group 40 - 49 with 21%. Respondent groups below the age of 29 years and between 50 and 59 each comprised 15% of the sample. All respondents were permanent non-managerial employees in their organizations. Their areas of work were production (41%), maintenance (30%), administration

and others (17%), sales and marketing (11%), IT and software development (only 1%). Forty-six percent were high school graduates and 40% were university graduates, as well as some graduates of professional schools, and other forms of education. Forty-three percent of respondents worked (mean= 2.43, SD=1.724) in organizations employing more than 5000 people, while 26% worked in organizations employing between 1000 and 4999 people. The rest worked in medium and small sized organizations ranging from 300-999 at 5%, 100-299 at 7 %, 50-99 at 9 %, and 10-49 people at around 10%. Sixty-six percent of the respondents were the main bread earners in their family (mean= 0.66, SD = 0.476) and 75% had dependants (mean= 3.03, SD = 1.376) in their family. About 42% of the respondents had more than 16 years of service in the current organization (mean = 1.86, SD= 0.886). A large proportion (74%) had no experience in working in other organizations, according to figures for years of service in other organizations apart from the one where he/she was currently employed (mean = 0.255, SD = 0.437). About 70% of the respondents had a monthly salary of between 250,000 and 350,000 yen (approximately US$2500-3500) while 18% earned above 350,000 yen and 12% below 250,000 yen monthly.

CONTROL VARIABLES (DEMOGRAPHIC)

Following Cohen (2009) and Macky and Boxall (2007), this author used six controlled demographic variables in this study: (1) Employee age (in terms of birthday) into 5 Age groups (1= Age within 29 years; 2= Age ranging from 30-39 years; 3= Age ranging from 40-49 years, 5= Age ranging from 50 and above); (2) years of service in the current organization (the actual number of years of each respondent); (3) years of service in other organizations (1 was assigned when a respondent had never experienced job-hopping, while a 0 was assigned when one had not); (4) the number of employees in the workplace (company size) (measured in terms of the number of employees in each establishment); (5) being the main bread earner (1 for yes, 0 for no); and (6) the number dependants (actual number).

MATRIX DESIGN

Adapting Oba's value-conscious theory (2007), the author designed four possible forms of relationships between employee consciousness of HPWS and employee commitment. The X-axis is denoted by the HPWS platform and Y-axis is the employee commitment, both having positive and negative ends. The four possible groups or profiles of linkages are: $X^+ Y^+$ matrix = High HPWS and High Commitment= (group 1); $X^+ Y^-$ matrix = High HPWS and Low Commitment (group 2); $X^- Y^+$ matrix = Low HPWS and High Commitment (group 3); $X^- Y^-$ matrix = Low HPWS Low Commitment (group 4).

TOOLS USED FOR THE ANALYSIS

Discriminant Analysis (DA) SPSS 13 version software was used to predict the four groups, as described in the matrix design, of the respondents based on the median score value of the average responses of HPWS, (3.43) and Commitment, (3.95) respectively, most commonly used in the organizational behavior studies (Gellatly, Hunter, Currie, & Irving, 2009). The steps described by DeCoster (2004) of median split process in SPSS was followed and the measurement error in the grouping process occurred in the previous version of this paper

(Chaudhuri, 2010) was corrected in this paper. The perceived high group was predicted as having higher values than each of these median values, while the perceived low group would be relatively lower than the median value. The mean values of perceived HPWS, affective, continuous, and normative organizational and occupational commitment, stressors and job intensity, along with the demographic controlled variables were entered together as independent variables to predict these four groups. Finally, to study how individual HR practices in the HPWS bundle are related to different forms of employee commitments, and to stressor and job intensity, hierarchical OLS regression analysis was performed in two stages. In the first stage, the demographic controlled variables were entered; then, the individual HR practices were entered one by one using SPSS 13 version software.

FINDINGS

Discriminant Analysis (DA)

To test the significance of the model as a whole, this research has the following two hypotheses: Null hypothesis: the four groups have the same mean discriminant function scores; and the Alternate hypothesis: they are not all equal. The result of the model is shown in Table 1. The value of Wilks' λ statistic in DA for the test of function 1 through 3 functions is .174 (chi-square = 380.41) showed a probability of $0.000 < 0.001$. Test of function 2 through 3 functions is .502 (chi-square = 149.172) showed a probability $.000 < 0.001$. After removing function 2, the Wilks' λ statistic for the test of function 3 (chi-square = 17.94) had a probability of $0.08 > 0.05$. Thus, the model produced significantly differentiated scores among the groups (see Table 1). The significance of the maximum possible number of discriminant functions supports the interpretation of a solution using the two discriminant functions. That is the null hypothesis is rejected and the model differentiates scores among the groups significantly.

TABLE 1. TEST OF FUNCTIONS AND WILKS' LAMBDA

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1 through 3	**.174**	**380.41**	**39**	**0.000**
2 through 3	**.502**	**149.70**	**24**	**0.000**
3	.921	17.94	11	0.08

From the Table 2, Eigen values, verify the relation between dependent and independent variables. The larger the Eigen value, the more of the variance in the dependent variable is explained by that function. Since the dependent in this application has four groups, there are three discriminant functions. The Eigen values of the estimated discriminant functions in descending order of importance. The second column lists the percent of variance explained by each function. The third column is the cumulative percentage of variance explained. The last column is canonical correlation, where the squared canonical correlation is the percent of variation in the dependent discriminated by the independents in D. A. Eigen values showed 67.27 % of variance among the 4 groups that can be explained by function 1, whereas only 29.67% of this variance can be explained by function 2, and just 3.06 % by function 3. The degree of relationship between the predictors and groups (canonical correlation) due to function 1 is 0.809, greater than function 2

being (0.674) and function 3 being (0.281). Thus function 1 is more important than functions 2 and 3 (see Table 2).

TABLE 2. EIGEN VALUES OF THE FUNCTIONS

Function	Eigen value	% of Variance	Cumulative %	Canonical Correlation
1	1.888[a]	67.27	67.27	0.809
2	0.883[a]	29.67	96.94	0.674
3	0.086[a]	3.06	100	0.281
A	First 3 canonical discriminant functions were used in the analysis.			

Table 3 describes the test of the Significance of the independent variables in the model. The smaller value of Wilks' λ for an independent variable, the more that variable contributes to the discriminant. Affective organizational commitments have distinct differences amongst the four groups. Table 2 showing the values of Wilks' λ statistic for the predictor variables of HPWS to be .415 with high significant F= 104.58 (p<.001) followed by affective commitment to be .540 with high significant F= 63.32 (p <.001), occupational commitment , λ statistic = .585 , F = 52.74 (p <.001) and these predictors are more significant contributors than the others. Among other independent predictors as normative commitment (λ= .787) followed by the perceived stressors (λ=.860) and perceived job intensity (λ=.944), continuous commitment (λ=.948) all have statistical significance and also contributed in the model. However, only the years of service in the other companies among the demographic variable differed in the four groups (λ=.942) having significant p (<.01). All these predictors, as shown in Table 3, which discriminate the four predicted groups, differ considerably by their mean discriminant function scores.

TABLE 3. MEANS (STANDARD DEVIATIONS) BY GROUPS, ***p<.001, ** p<.01

Discriminant variables	Group 1 (n = 71)	Group 2 (n = 41)	Group 3 (n = 40)	Group 4 (n = 75)	Wilks' Lambda	F-value
HPWS	3.88 (0.28)	3.71 (0.25)	3.02 (0.37)	2.82 (0.55)	0.415	104.58 ***
Affective organizational Commitment	4.94 (0.60)	3.84 (0.68)	4.50 (0.55)	3.50 (0.77)	0.540	63.32 ***
Continuous organizational commitment	4.11 (1.07)	3.90 (0.95)	4.58 (0.95)	4.36 (0.88)	0.948	4.09 **
Normative organizational Commitment	3.73 (.95)	2.68 (.81)	3.44 (0.90)	2.72 (0.94)	0.787	20.17 ***
Occupational commitment	4.65 (0.82)	3.63 (.72)	4.50 (0.51)	3.32 (0.68)	0.585	52.74 ***
Job intensity	3.99 (0.83)	4.27 (0.66)	3.94 (0.72)	3.72 (0.86)	0.944	4.44 **
Stressors	2.95 (0.69)	3.45 (0.62)	3.42 (0.51)	3.51 (0.58)	0.860	12.11 ***
Years of service in other co.	.14 (.35)	.17 (.38)	.40 (.50)	.33 (.47)	0.942	4.60 **

The standardized discriminant function coefficients should be used to assess each variable's unique contribution to discriminant function. The standardized canonical discriminant function coefficients, which are presented in Table 4, reflect the contribution of one independent variable

in the context of the other variables in the model. A low standardized coefficient might mean that the groups do not differ much on that variable or it might just mean that a variable's correlation with the grouping variable is redundant with that of another variable in the model. The larger the standardized coefficient, the greater is the contribution of the respective variable to the discrimination between groups (Klecka, 1980). The standardized discriminant canonical coefficient functions revealed that HPWS (.69), followed by affective organizational commitment (.36) and occupational commitment (.38) were all positively related to the function 1 and contributed more than other variables in the model.

The Fisher's classification function coefficients adapted are shown in Table 5. These are used to classify the cases between the groups. Group 4 (n=75) showed a decrease of coefficients in HPWS, affective, continuous and occupational commitments, along with perceived job intensity but an increase on perceived stressors in comparison to group 1 (n=71). The classification of the cases relatively are more in the Group 4 (n=75), having employees with both low consciousness of HPWS and commitment. Chart 1 show the graph of the group centroids in the model. Strong evidences of linkages in employee consciousness between HPWS and commitment can be observed in the sample.

TABLE 4. STANDARDIZED DISCRIMINANT FUNCTION COEFFICIENTS

Standardized Discriminant Function Coefficients	Function 1	Function 2
Age (Groups)	.06	-.01
Number of employees (Groups)	-.15	.10
Years of service in the same company	.00	-.06
Dependants	-.09	-.10
Main bread earner	-.05	-.02
Years of service in other companies	.05	.00
HPWS	.69	-.79
Stressors	-.10	.01
Job Intensity	.19	-.10
Affective Organizational Commitment	.36	.48
Continuous Organizational Commitment	.18	.39
Normative Organizational Commitment	.03	.43
Occupational Commitment	.38	.41

TABLE 5. FISHER'S LINEAR DISCRIMINANT FUNCTIONS

Discriminant Variables	Group 1 (n= 71)	Group 2 (n= 41)	Group 3 (n= 40)	Group 4 (n= 75)
Age (Groups)	3.23	3.06	3.00	3.00
No of employees (Groups)	.52	.71	.92	.82
Years of service in the same co	2.36	2.73	2.56	2.36
Having dependants	3.24	3.58	3.39	3.48
Main bread earner	-1.23	-. 96	-1.04	-0.89
Years of service in other co	5.48	5.74	5.74	5.13
HPWS	27.26	28.03	21.73	21.68
Affective organizational commitment	6.67	4.49	6.55	4.77
Continuous organizational commitment	7.68	6.74	7.93	7.01
Normative organizational commitment	0.64	-0.37	1.01	0.47
Occupational commitment	11.85	10.44	12.12	9.99
Job Intensity	1.67	1.68	1.27	0.89
Stressors	13.15	13.88	14.00	13.75
Constant	-150.71	-137.06	-139.00	-113.67

Table 6 shows how well the discriminant function worked for each group of the dependent variable. DA correctly classified about 86.8% of the original group cases as per the prediction. This is further supported by the results showing 81.9% of the cross validated groups were correctly classified, which is quite satisfactory. Prediction of individual groups through DA resulted in 94.37% (cross validated 91.55%) of cases being classified in Group 1 (n=71, High HPWS/ High commitment); 85.37% (cross validated 80.49%) in group 2 (n=41, High HPWS/ Low commitment); 77.50% (cross validated 70%) in group 3 (n=40, High commitment/Low HPWS); and 85.33% (cross validated 80%) in group 4 (n=75, Low HPWS/ low Commitment). The estimated discriminant function produced relatively more cases in Group 4 than in other groups in the model.

TABLE 6. CLASSIFICATION RESULTS OF THE GROUPS

		Matrices		Predicted group membership			Total
			Group1	Group2	Group 3	Group 4	
Original	Count	Group 1	67	2	2	0	71
		Group 2	4	35	0	2	41
		Group 3	7	0	31	2	40
		Group 4	1	6	4	64	75
	%	Group 1	94.37	0	2.82	0	100
		Group 2	9.76	85.37	0	4.88	100
		Group 3	17.5	0	77.50	5.0	100
		Group 4	1.33	8.0	5.33	85.33	100
Cross-validated	Count	Group 1	65	3	2	1	71
		Group 2	4	33	0	4	41
		Group 3	9	0	28	3	40
		Group 4	1	7	7	60	75
	%	Group 1	91.55	4.23	2.82	1.41	100
		Group 2	9.76	80.49	0	9.76	100
		Group 3	22.5	0	70.00	7.5	100
		Group 4	1.33	9.33	9.33	80.0	100
86.8% of original grouped cases correctly classified. 81.9% of cross-validated grouped cases correctly classified. Group 1= High HPWS/High Commitment; Group 2=High HPWS/Low Commitment Group 3= High Commitment / Low HPWS; Group 4= Low Commitment/ Low HPWS							

CHART 1. GRAPH SHOWING CENTROIDS OF THE GROUPS

Canonical Discriminant Functions
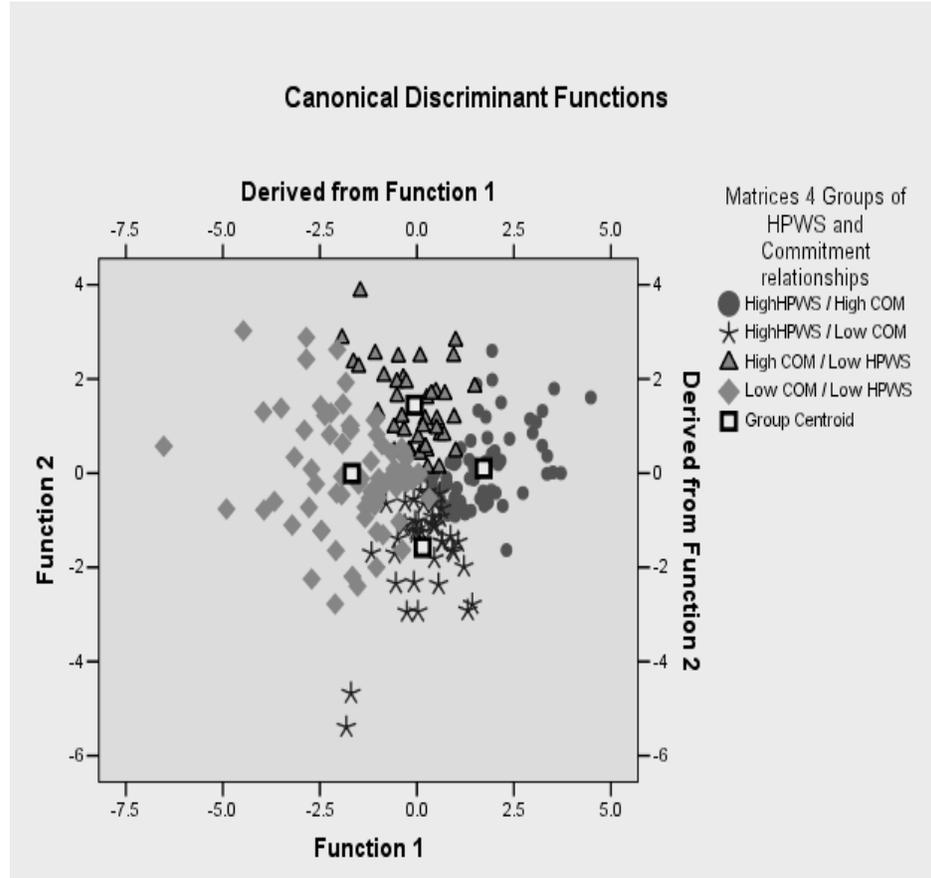
Hierarchical OLS Regressions

In order to investigate how the individual HR practices in HPWS influence different forms of commitments and other employee outcomes a two staged OLS regression analysis was conducted (Chaudhuri, 2010). Initially the demographic variables were entered and then in the second stage all the individual items in the HPWS were entered one by one in the model. Table 7 showed that employee participation programs (β=.24, p< .01), team work (β=.15,p<.05) and information sharing on the company's financial status (β=.23,p< .01) were significantly related to the employee affective organizational commitment. Overall, the regression equation revealed values of R^2 Δ= .38, F=5.18(p<.001) and FΔ=6.20(p<.001). The number of employees (β=.16,p<.05), and training was found to be significantly and negatively related (β= -.17, p< .05) to continuous organizational commitment. However, the overall regression equation resulted in R^2 Δ= .13, F=1.61 (p<.05), but did not result in any significant F Δ between HPWS individual HR practices and employee continuous organizational commitment, or employee participation programs (β=.21, p<.05), formal grievances and complaint resolution system, (β= -.17, p < .05) to normative organizational commitment. Overall, the regression equation produced R^2 Δ= .22, F= 2.17(p< .001) and FΔ= 2.65 (p< .001). Employee age (β= -.22, p < .01), having dependants in the family (β= -.13, p < .05), years of service in the current organization (β= -.12, p < .05) were

negative, but being the main bread earner (β= .19, p < .01) was positively related to occupational commitment. Employee participation programs (β= .21, p < .05), self-directed team work (β= .16, p < .05), information sharing on the company's financial status (β=.17, p < .05) and measures of occupational safety (β= .16, p < .05), were found to be positively and significantly related to employee occupational commitment. The overall equation revealed $R^2 \Delta$= .21, F=3.01(p<.001) in the first stage, F= 2.89 (p< .001) in the second stage and FΔ= 2.72 (p< .001). Years of service in the current organization (β=-.26, p < .01) were negatively related, while years of service in other organizations (β=.28, p < .001) were positively and significantly related to stressors. H.R. practices such as participation programs (β= -.19, p < .05) and formal communication programs (β= -.21, p < .05) were negatively related to stressors. However formal grievance resolution and complaint system had significant positive relationships (β=.17, p < .05) with stressors. The overall result was $R^2 \Delta$= .17, F= 4.77(p< .001) in the first stage, F= 3.01(p< .001) in the second stage and FΔ= 2.33 (p< .001) in the regression equation. Employee age (β=-.20, p < .05), years of service in the organization (β= -.20, p < .05) were negatively related to job intensity. HR practices of rigorous selective recruitments (β=.18, p < .05), information sharing of the company's financial results (β=.23, p < .01), and employee attitude surveys (β=.17, p < .05) all had a significant positive relationship, but measures of occupational safety had a negative significant relationship with job intensity (β= -.19, p < .05). Overall, the OLS regression resulted in $R^2 \Delta$= .18, F= 2.04(p< .01) and FΔ= 2.17 (p< .01) with job intensification.

TABLE 7. TWO STAGED HIERARCHICAL OLS REGRESSIONS OF DEMOGRAPHIC AND INDIVIDUAL VARIABLES OF HPWS ON EMPLOYEE OUTCOMES (n= 227) ***p<.001, ** p<.01 , * p<.05

Independent Variables	Standardized beta coefficients(t – values) of outcomes (dependent variables)											
	Affective		Continuous		Normative		Occupational		Stressors		Job Intensity	
	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	stage2	Stage1	stage2	Stage1	Stage2
Age(Groups)	-.07 (-.82)	-.03 (-.38)	.15 (1.72)	.00 (.77)	-.02 (-.27)	-.05 (.55)	-.22 (-2.47) **	-.22 (-2.51) **	-.12 (-1.38)	-.09 (-.99)	-.20 (-2.23) *	-.13 (-1.40)
No of employees(groups)	-.11 (-1.49)	.00 (-.05)	.16 (2.31) *	.13 (1.73)	.05 (.65)	.08 (1.02)	-.03 (.44)	.02 (.22)	.05 (.69)	.07 (.96)	-.04 (-.62)	.04 (.50)
Years of service in the current co	.06 (.67)	-.03 (-.43)	-06 (-.72)	.02 (.17)	.03 (.30)	.07 (-.78)	-.09 (-1.12)	-.18 (-2.16) *	-.26 (-3.13) **	-.16 (-1.95) *	-20 (-2.30) *	-.24 (-2.77) **
Having Dependent	-.01 (-.15)	.02 (.37)	-.01 (-.19)	-.05 (-.72)	-.07 (-1.00)	-.02 (-.26)	-.13 (-1.91) *	-12 (-1.84)	-.05 (-.81)	-.08 (-1.23)	-.08 (-1.17)	-.05 (-.68)
Main bread earner	.04 (.65)	.05 (.86)	-.08 (-1.26)	-.05 (-.70)	.02 (.28)	.00 (-.07)	.17 (2.61)	.19 (2.80) **	.02 (.36)	.05 (.76)	.02 (.25)	-.04 (-.60)
Yrs of service in other co(dummy)	-.07 (-.98)	.14 (2.08)	.00 (.03)	-.02 (-.23)	-.06 (-.85)	.09 (1.18)	-.05 (-.65)	.08 (1.09)	.28 (4.19) ***	.14 (1.86)	.08 (1.15)	.12 (1.50)
Selection		.06 (.84)		.03 (.37)		.14 (1.63)		.07 (.87)		.00 (.02)		.18 (-2.16)*
Training		.00 (.03)		-.23 (-2.13)*		-.03 (-.33)		-.17 (-1.69)		-.01 (-.08)		.02 (.16)

Internal promotion	-.12 (-1.77)	.08 (.97)	-.07 (-.96)	-.02 (-.22)	.09 (1.20)	-.04 (-.57)
Empowered	-.05 (-.68)	-.16 (-1.74)	.09 (.94)	-.06 (-.71)	-.05 (-.58)	.02 (.23)
Participation programs	**.24 (2.87)****	.09 (.90)	**.21 (2.11)***	**.21 (2.24)***	**-.19 (-1.98)***	-.16 (-1.58)
Team work	**.15 (2.23)***	.05 (.59)	-.01 (-.07)	.06 (.84)	.00 (-.02)	.05 (.64)
Self directed team	.04 (.50)	-.12 (-1.39)	.05 (.61)	**.16 (1.95)***	-.14 (-1.77)	-.06 (.64)
Performance Appraisal	.00 (.01)	.11 (1.60)	.01 (.15)	-.02 (-.30)	.03 (.49)	.02 (.28)
Formal performance feedback	-.07 (-1.07)	-.09 (-1.18)	.09 (1.23)	-.03 (-.40)	.11 (1.51)	.06 (.77)
Regular constructive feedback	.11 (1.42)	.04 (.46)	-.03 (-.33)	.06 (.64)	.03 (.32)	.07 (.75)
Pay for performance is based on quantified results	.11 (1.40)	-.09 (.99)	-.02 (-.17)	.02 (.26)	.01 (.16)	.05 (.56)
Profit sharing schemes	-.08 (-1.04)	.13 (1.51)	.03 (.37)	-.05 (-.63)	.04 (.54)	.11 (1.25)
Additional pay rise in last year	-.11 (-1.81)	-.03 (-.38)	-.03 (- .41)	-.07 (-1.04)	.08 (1.28)	.07 (.97)
Information sharing on co financial status	**.23 (3.01)****	-.05 (-.55)	.11 (1.27)	**.17 (2.09)***	.01 (.10)	**.23 (2.66)****
Information sharing on co strategic plans	.16 (1.86)	.05 (-.50)	.11 (1.11)	.01 (2.06)	-.05 (-.52)	-.18 (-1.81)
Formal communication programs	-.03 (-.40)	.03 (.33)	.01 (.10)	.14 (1.49)	**-.21 (-2.30)***	-.05 (-.49)
Employee attitude survey	.04 (.70)	.11 (1.45)	.02 (.22)	.02 (.27)	.01 (.17)	**.17 (2.33)***
Few status difference	.00 (.03)	-.11 (-1.45)	-.11 (-1.50)	-.01 (-.09)	-.05 (-.72)	.06 (.75)
Good career Opportunities	.09 (1.17)	-.02 (-.25)	.08 (.82)	.00 (.01)	-.04 (-.40)	-.04 (-.40)
Formal grievances and complaint resolution systems	-.11 (-1.62)	-.10 (-1.21)	**-17 (-2.19)***	-.14 (-1.90)	**.17 (2.27)***	.15 (1.87)
Measures for occupational safety	.07 (.97)	.01 (.10)	.09 1.08	**.16 (2.05)***	-.10 (-1.31)	**-19 (-2.42)***
R ^{2} (adjusted)	.03(.00) .41(.33)	.05(.03) 18(.07)	.01(-.02) .23(.12)	.08(.05) .28(.18)	.12(.09) .29(.19)	.04(.01) .22(.11)
R ^{2} Δ	.38	.13	.22	.21	.17	.18
F	1.07 5.18***	2.08 1.61*	.40 2.17***	3.01** 2.89***	4.77*** 3.01***	1.44 2.04**
F Δ	6.20***	1.45	2.65***	2.72***	2.33***	2.17**

DISCUSSIONS AND IMPLICATIONS

This paper provided evidences of four possible forms of HPWS-Commitment relationships through the existence of four Groups, as predicted from the employee consciousness of HPWS and Commitment. DA gave the highest accuracy level with respect to those who felt a low perception of both HPWS and Commitment. From the company's perspective, it is important to understand which employees are likely to have such low perception of HPWS and commitment so that pro-active strategies can be initiated to minimize such cognition. The members belonging to Group 4 can be named as the '*De-Active*' and in addition, efforts should be made to shift their consciousness to Group 1 (employees with higher consciousness of HPWS and Commitment), named as the '*Active*' members or to Group 3, where at the least people have greater consciousness to commitment, the '*Confident*' group of members. The individual HR practices in the HPWS could be utilized in this regard. Existence of the members (n= 41) in Group 2 (having High consciousness of HPWS and Low consciousness of Commitment), should be treated as a warning for the HR practitioners. These members, named as the '*Blue*', have low perceptions of commitment in spite of having higher perceptions of HPWS. This could be due to the ill effects of over implementation of HR practices in HPWS, or these members, '*Blue*', could be too modest in expressing their cognition regarding commitment towards organizations or to their work. Japanese people culturally appear to have a strong self-effacement and 'does not appear to maintain a significant discourse regarding the importance of self-esteem,' (Heine, Lehman, Markus, & Kitayama, 1999, p. 779). Results from the regression analysis show that creating low stressful working conditions and encouraging 'teamwork' among employees, increasing various 'employee participation programs' in operations and 'sharing information about the company's financial results' could increase employees' affective, normative organizational and occupational commitments. However, there is also evidence of intensification of work. Hence, for the HR practitioners efforts of reducing stressful working conditions and job intensity could yield in higher employee commitments in workplaces.

No significant influence of demographic controlled variables were observed in the relationships except that age (groups), years of service in the current organization and being the main bread earner had some influence on occupational commitment alone. However, authors as Mathieu and Zajac (1990), Meyer and Allen (1991), Macky and Boxall (2007) also did not find strong and consistent relationships of the demographic variables with organizational commitment in their studies. Employees with fewer years of service in their present companies showed higher consciousness of stress and job intensity in the workplace. Statistically, biasness of the non-managerial employees as the single rater could not be found, as the mean responses of all the variables used in this study did not show any skewness in the distribution.

Theoretically, this paper provides academic support for the argument made previously by the authors that HPWS can increase employee commitment (Appelbaum et al., 2000; Comb, Liu, Hall, & Ketchen, 2006; Takeuchi et al., 2009). This paper also supports the arguments, that HPWS can increase job-intensity (Ramsay et al., 2000; Godard, 2004) and also could reduce workplace or job stressors in Japanese organizations (Takeuchi et al., 2007; Takeuchi et al., 2009). Thus, this paper contributes to the extant literatures in HRM and employee psychology.

LIMITATIONS

The sample size in the study was also not representative of the entire population of the employees in Japan. It did not include representation of automobile industries, or pharmaceutical industries, to name a few, so in no way can the result be generalized. Microeconomic studies among different industries with a much larger sample size in the future could render some important findings in this subject. Randomization of the samples could not be applied, yet efforts were made to collect data from multiple sources including union representatives of different organizations to minimize biasness as far as possible. Influence of common method bias was reduced by assuring the participants of the anonymity and confidentiality of the responses (Gellatly et al., 2009). However, in Japanese cultures, people normally tend not to disclose their individual true feelings or intended statement (concept of *honne* = real self) and they often get subdued by norms, "immersed" by surroundings, and use socially-tuned statements shaped to please the larger majority (*tatemae* = public stance) (Davis and Ikeno, 2002; Doi, 1986; Heine et al., 1999). Such a contrast and duality or multiplicity of the Japanese mindset is important to consider in studying Japanese minds (Heine et al., 1999). Respondents may have refrained from expressing their true feelings to describe their working environment, in relation to stressors or intensity and their perceptions of individual psychological relationships with their organizations. Therefore, such speculations of biasness may not be ruled out completely. Thus, assessing employee consciousness in Japanese workplaces is highly complicated and challenging. The measurement of consciousness could have been better with more sophisticated statistical tools. Reliability measures of Continuous and Normative organizational commitment are also low and this may have hindered various measures of associations and linkages between the variables used in this study. The grouping of the respondents in four matrices or groups was restricted only on their three forms of organizational commitment and occupational commitments. Future studies should include other forms of commitments in workplaces and should also target responses from the managers. How their consciousness could differ with the non-managers' perceptions in HPWS workplaces could be an interesting topic for further exploration. This study was conducted in a period when Japan was undergoing economic recession. In a macro level, the results could have been different if this study was conducted in an economical boom period.

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