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ABSTRACT

This study examined human resource system effects on performance and turnover at 40 production facilities in Mexico. Findings showed that when job structure practices were more commitment-oriented (rather than control-oriented), facilities had better performance and less turnover. When employee welfare practices were more commitment-oriented, facilities had better performance -- but more turnover.

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HUMAN RESOURCE SYSTEM EFFECTS AT PRODUCTION FACILITIES IN MEXICO

With the recent approval of the North American Free Trade Agreement (NAFTA), the prospect of establishing an "off-shore" industrial plant in Mexico has become more attractive to many firms. Consequently, managers have a strong interest in understanding issues associated with setting up operations in Mexico. One such issue is the design of human resource (HR) systems for a Mexican labor force.

Although there are presently approximately 2,400 foreign-owned plants in Mexico (de Forest, 1994), management scholars have devoted little attention to the nature and consequences of human resource management strategies at those sites. Existing information (e.g., de Forest, 1994; Stinson, 1989; Teagarden, Butler, & Von Glinow, 1992) is largely based on case studies or anecdotal evidence. Thus, our purpose was to conduct a comprehensive and deductive study of human resource activities at foreign-owned plants in Mexico. In doing so, we took a strategic human resource management perspective, which examines the impact of "configurations, or systems, of human resource activities" on organization-level outcomes (Arthur, 1994:670). More specifically, the objective of this study was to develop and test propositions relating human resource system types to manufacturing performance and employee turnover at foreign-owned (e.g., United States-owned, Japanese-owned, or Korean-owned) production facilities in Mexico.

THEORETICAL DEVELOPMENT AND HYPOTHESES

A standard typology classifies human resource systems into two broad categories labeled "control" and "commitment" (Arthur, 1992, 1994; Lawler, 1986; Walton, 1985). The primary goal of control human resource systems is to improve efficiency by ensuring that employees follow specified rules and procedures and by basing employee rewards on easily-measured outputs (Arthur, 1994; Eisenhardt, 1985). The primary goal of commitment human resource systems, on the other hand, is to align employee and organizational goals -- to develop loyal employees who act in the best interest of the organization because, in doing so, they are acting in their own best interest (Arthur, 1994; Organ, 1988). In a recent examination of manufacturing plants located in

the United States, Arthur (1992) found that control human resource systems typically have more centralization, less employee participation, less general training, and less compensation and benefits than commitment systems. In follow-up research (Arthur, 1994), he found support for the predictions that plants with commitment systems would have a) better manufacturing performance and b) less turnover than those with control systems. Because the present study took place in Mexico, we offer an alternative set of predictions. As Adler (1991) argued, organization theories made in a given country are influenced by their cultural context -- the shared values and expectations of workers in that country; thus, "the prudent manager can only assume that the current American-based theories are applicable to the United States; not, as is so tempting, to the world at large" (p.147).

Academic writings (e.g., de Forest, 1994; Teagarden, et al., 1992) and the popular press (e.g., O'Hara-Devereaux & Johansen, 1994) have suggested that the culture of Mexican workers is characterized by paternalism, the idea that employers should "oversee and control employees' lives like good parents" (Kearney, 1991:43); thus, employees expect managers and supervisors to be father figures -- high-status, autocratic leaders who take care of their subordinates.

Reactions of subordinates to managerial attitudes and behaviors strongly reflect cultural conditioning (Sherman & Bolander, 1992); thus, what constitutes an effective motivational or performance improvement tool in one country may have little impact -- or, worse yet, a negative impact -- in another. If a human resource practice forces employees to assume roles or enter situations that conflict with their cultural values, those workers may experience the anxiety that characterizes cognitive dissonance, the state of internal conflict that an individual feels after engaging in a behavior or being exposed to information that contradicts his or her beliefs or values (Festinger, 1957). This anxiety may reduce the visual discrimination (Eriksen & Wechsler, 1955) and motor skills (Wachtel, 1968) that are needed to do production work efficiently and effectively. For example, if production workers in a given country have a strongly ingrained belief that it is appropriate to have close supervision and be obedient to authority, then they may be uncomfortable if they are expected to assume greater independence and responsibility for themselves. In such an

environment, self-managed teams or participative management approaches may promote anxiety among workers, impairing their performance. Also, if workers do not value a reward that management offers for a given behavior, then that reward will not motivate them to engage in that behavior (Vroom, 1964). Consistent with this reasoning, international business experts (e.g., Ronen, 1986) have argued that workers will be more motivated and productive if managers adopt HR practices that match the values of the countries in which they are located. We therefore expect that foreign-owned plants in Mexico will have better manufacturing performance when their human resource systems are more aligned with the culture of the Mexican workforce, i.e., more paternalistic.

But what makes a human resource system paternalistic? Jackman (1994:12) has noted that paternalism is an "ideological system fraught with contradictions, stemming from a tensive intermixture of domination with benevolence." Aronoff and Ward (1993:62) also conveyed this mixed nature of paternalism when they said that its implicit message is "I'll take care of you and your family if you will obey me and respond to my wishes." Since paternalism combines directiveness with caretaking, a human resource system must mix both a control orientation and a commitment orientation in order to be aligned with the paternalistic culture of Mexico. Those practices that relate to job structure -- specifically, those that influence who does the work and how it is done (e.g., delegation or training) -- should be control-oriented, promoting an environment of autocratic leadership and low employee involvement. Since the father role traditionally involves responsibility for the well-being of others, however, other practices in such a system -- specifically, those that relate to employee welfare (i.e., compensation and benefits) -- should be more commitment-oriented. Dunnette (1976:1651) vividly depicted this commitment-oriented welfare dimension of paternalism when he observed, " . . . the Mexican culture is oriented toward the concept that the employer provides a large number of benefits to the employee. This fitted in well with Sears' personnel policy, which can best be described as paternalistic . . . . " Thus, the expectation that more paternalistic human resource systems will be associated with better manufacturing performance in Mexico suggests the following:

Hypothesis 1a: In Mexico, as the job structure practices of a production facility become more control-oriented, the manufacturing performance of that facility will improve.

Hypothesis 1b: In Mexico, as the employee welfare practices of a production facility become more commitment-oriented, the manufacturing performance of that facility will improve.

In addition to being associated with better manufacturing performance, more paternalistic human resource systems in Mexican plants should be associated with less turnover. As suggested earlier, the high-security, authoritarian work situation that characterizes such systems may make Mexican production workers more comfortable and less anxious since it is consistent with cultural values in Mexico. Individuals have a strong inclination to avoid or leave situations that produce unpleasant consequences in them such as anxiety (Lazarus, 1975). Also, as a form of stress (Lazarus, 1975; Martin & Sroufe, 1970; Tosi, Rizzo, & Carroll, 1994), anxiety may lead to illness (Janisse, 1988), which can compel individuals to leave their organization or stop working altogether. Thus, just as paternalistic HR systems are apt to improve manufacturing performance in Mexican plants by reducing production worker anxiety, they are likely to decrease turnover at those plants by reducing production worker anxiety.

Hypothesis 2a: In Mexico, as the job structure practices of a production facility become more control-oriented, employee turnover at that facility will decrease.

Hypothesis 2b: In Mexico, as the employee welfare practices of a production facility become more commitment-oriented, employee turnover at that facility will decrease.

METHODS

Data Collection and Sample

We identified potential participants (general managers or human resource managers of assembly plants in Mexico) in this study using the San Diego/Baja California Twin Plant Directory (San Diego Economic Development Corporation, 1993). Industrial classification codes and telephone numbers in the directory enabled us to contact managers at 57 plants in the electronic apparatus and equipment industry in Tijuana. Of the 57 managers contacted, 52 agreed to participate. In order to ensure that our questionnaires would be completed, we scheduled a face-to-

face meeting with each manager and gave him or her either a Spanish or an English version of the questionnaire, depending on his or her preference. Between August and December of 1994, we visited all 52 plants for scheduled meetings. We received questionnaires from 41 managers (out of 57 initially contacted), a response rate of 72%. Missing data on one of the questionnaires reduced our sample size to 40. Questionnaire respondents in the final sample included 19 human resource managers and 21 general managers. Managers typically assembled data from a variety of sources, including company records and other managers, in order to provide accurate responses. The mean age of the plants was 6.7 years (s.d. 4.1 years), and the mean size was 316 employees (s.d. 351). Only 6 of the plants were unionized.

Measures

Predictor Variables. In this study we conceptualize control and commitment human resource (HR) systems as opposite ends of a continuum, such that those companies with low commitment-orientation scores on a particular component of their HR systems (i.e., the job structure practices or employee welfare practices) are more control-oriented with respect to that component. Based on this conceptualization, the two predictor variables in this study are a) the commitment orientation of the job structure component of the HR system (JS commitment orientation) and b) the commitment orientation of the employee welfare component (EW commitment orientation).

The JS commitment orientation index (α=.79) was created by first standardizing and then summing three measures: information sharing, general training, and participation. The information sharing measure (α=.73) consisted of 3 items assessing the extent to which assembly workers were routinely provided with overall operating results for the corporation, operating results for their plant, and information about relative performance of competitors. General training was a 4-item index (α=.89) measuring the proportion of assembly workers receiving training in group decision making, leadership, accounting, and team building. The participation index was formed by summing 4 dichotomous variables, each indicating the presence or absence of a particular employee participation program: suggestion system, survey feedback, quality circles, and

employee participation groups other than quality circles. All three measures composing the JS commitment orientation index were based on scales developed by Lawler, Mohrman, and Ledford (1992).

The EW commitment orientation index was formed by summing 6 dichotomous variables, each indicating the presence or absence of a particular benefit not required by Mexican law (lunch subsidies, food coupons, free child care, free visits to an on-site infirmary, weekly food baskets, transportation subsidies), and a seventh variable indicating the number of benefits respondents listed as "other" (e.g., recreational facilities). The list of benefits was drawn from previous writings on the human resource practices of production facilities in Mexico (Carrillo et al., 1993; Stinson, 1989; Teagarden et al., 1991). After the first few meetings with plant managers, we modified the list based on their input. We then asked those managers to examine the modified list and indicate which benefits their plants offered. Principal components analysis with varimax rotation revealed that the EW commitment orientation index loaded and the JS commitment orientation index loaded on separate factors. (Minimum wage at the plants also loaded on the same factor as the 7-item EW commitment orientation index. We did not standardize and sum the two measures -- i.e., number of benefits and minimum wage -- to form a single EW commitment orientation index, however, because Cronbach's alpha for the two items was low (α = .22). When we entered minimum wage as a separate independent variable in the regressions, we found that it did not have a significant effect on either performance or turnover and that it did not change the significance of the beta weights for the other independent variables.)

Outcome Variables. Respondents were asked to report their plants' turnover and performance levels over the year before the survey. Turnover was defined as the average percentage of hourly assembly workers leaving the plant every month. Managers indicated that termination of employees was extremely rare due to a) tight legal constraints on the termination process in Mexico and b) the extreme shortage of labor in Tijuana. Thus, turnover rates generally include only voluntary departures. The plant performance measure was a subjective rating that included 5 items (α=.86) developed by Dean & Snell (1991): on-time delivery, inventory

management, employee productivity, equipment utilization, and production lead time. Although most managers would not provide us with an objective measure of their plant's manufacturing performance, 20 respondents reported their plant's average productivity compared to the Mean Time Movement (MTM) standard. The zero-order correlation between our subjective measure and this objective productivity measure was $r = .51$.

Control Variables. We controlled for the age (number of years a plant had been in existence), size (number of plant employees), and business strategy of the production facilities because prior research (e.g., Aldrich, 1979; Dess & Davis, 1984; Lincoln & Kalleberg, 1985) has consistently suggested that those variables are related to firm performance and workforce commitment. The business strategy measure was a 4-item scale (α=.60) based on Arthur's (1994) measure; it indicated the extent to which the plant followed the differentiation strategy described by Porter (1980).

RESULTS

Table 1 shows the means, standard deviations, and correlations among the predictor, outcome, and control variables.

Insert Table 1 About Here

Table 2 presents the results of regression analyses that tested Hypotheses 1a through 2b.

Insert Table 2 About Here

Our findings contradict Hypothesis 1a, which suggested that production facilities whose human resource systems were more commitment-oriented (less control-oriented) with respect to job structure practices would have poorer manufacturing performance; JS commitment orientation has a positive relationship with performance (Beta=.33, p≤.10, two-tailed). The significant positive relationship between EW commitment orientation and performance (Beta=.49, p≤.01, two-tailed), however, supports Hypothesis 1b, which predicted that production facilities whose

human resource systems were more commitment-oriented with respect to employee welfare practices would have better manufacturing performance.

Both Hypotheses 2a and 2b are contradicted by the results in Table 2. Hypothesis 2a suggested that production facilities whose human resource systems were more commitment-oriented (less control-oriented) with respect to job structure practices would have more turnover; what we found, however, was a significant negative relationship between JS commitment orientation and turnover (Beta= -.41, $p \leq .05$, two-tailed). While Hypothesis 2b predicted that production facilities whose human resource systems were more commitment-oriented with respect to employee welfare practices would have less turnover, we found a significant positive relationship between EW commitment orientation and turnover (Beta=.38, $p \leq .05$, two-tailed).

DISCUSSION

The results of our study are consistent with the view (e.g., Von Glinow & Milliman, 1990) that human resource activities play a critical role in international operations. We found that human resource system characteristics had a significant impact on both manufacturing performance and employee turnover at foreign-owned industrial plants in Mexico. Our findings are largely inconsistent, however, with the view that more paternalistic human resource systems are more effective in Mexico. Contrary to this popular notion, we found that a more commitment-oriented job structure HR component was associated with greater performance and less turnover; thus, just as production and maintenance workers in the United States tend to respond favorably to less control-oriented job structure policies (Arthur, 1994), Mexican employees may respond well to greater independence and responsibility in their jobs.

Another particularly surprising result in this study was that a more commitment-oriented employee welfare component was associated both with better performance, a desirable outcome, and greater turnover, an undesirable outcome. (We consider turnover generally undesirable in this study because, as previous writings (Stinson, 1989; Vargas & Johnson, 1993) have pointed out, it is one of the most significant problems facing foreign-owned plants in Mexico -- particularly near the Mexico-United States border.) One explanation for this apparent paradox may be that, while

benefits such as free child care remove potential stressors that might otherwise interfere with employees' mental concentration and overall plant performance, such benefits might also encourage a certain amount of irresponsibility. As Aronoff & Ward (1993:61) have pointed out, paternalism can "eat away at responsibility as organizational members learn that 'The Boss' will take care of things." Employees may feel that the company cares about them so much that they can leave without penalty -- that they will always be welcome to return at a later time. An alternative explanation for our employee welfare component finding is that, since our data were cross-sectional, the direction of causality may differ from what we have assumed: Companies may have offered additional benefits in response to turnover.

In addition to the cross-sectional nature of this study, there are several other reasons to exercise caution when interpreting our findings. First, since both JS commitment orientation and manufacturing performance were subjective measures taken from the same questionnaire, it is possible that common methods variance inflated the relationship between the two variables. (The relatively high correlation between our subjective measure of performance and an objective productivity measure that 20 companies reported makes this possibility less cause for concern, however.) Second, because this study only included firms in the electronic apparatus and equipment industry, the generalizability of its findings may be limited. A third caveat is that all of the plants in our sample were located in Tijuana, which is not necessarily representative of other regions of Mexico. Since Tijuana is the second most popular location for foreign-owned plants in Mexico (Tiano, 1994), however, we expect that our findings will be useful to a large number of managers. The implication for those managers is that it may be a mistake to rely on preconceived notions about Mexican workers when implementing human resource management systems south of the border.

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TABLE 1

Means, Standard Deviations, and Intercorrelations among Study Variables

	Mean	SD	1	2	3	4	5	6	7
1. JS Commitment-Orientation (recall: sum of z-scores)	0	.84	-						
2. EW Commitment-Orientation	2.63	1.61	.24	-					
3. Plant Size	315.58	351.29	.18	.43	-				
4. Plant Age	6.68	4.11	.26	.12	.15	-			
5. Business Strategy	5.03	1.41	.35	.06	-.08	-.28	-		
6. Turnover	8.54	5.41	-.17	.29	.01	.07	.13	-	
7. Manufacturing Performance	5.28	.91	.36	.44	-.01	.12	.09	-.02	-

TABLE 2

Regressions of Performance and Turnover on Human Resource System Components and Control Variables

Predictor and Control Variables	Dependent Variable Performance (N=40)	Turnover (N=40)
Plant Size	-.29*	-.09
Plant Age	-.01	.23
Business Strategy	-.09	.31*
JS Commitment Orientation	.33*	-.41**
EW Commitment Orientation	.49***	.38**
Adjusted R^2	.24	.12
F	3.40***	2.10*

* $p < .10$
** $p < .05$
*** $p < .01$