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**Moderating Effect of National Culture on Person-
Environment Fit: A Comparative Study in Asian
and European Countries**

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ABSTRACT

Fit is usually conceived as congruence between personal preferences and environmental supplies. As fit increases so should individual satisfaction. We hypothesized that national culture--a heretofore ignored factor in fit research--moderates the extent to which person-environment fit predicts satisfaction. Using data from low power-distance European contexts ($n = 111$) similar to that of the U.S., we confirmed what is known in the extant literature. However, data from high power-distance European ($n = 84$) and Asian ($n = 577$) contexts indicated that these individuals were not dissatisfied when their preferences (i.e., preferences for structuring) were incongruent to environmental supplies (i.e., the extent to which they perceived the organization to be structured). As cultural theory would suggest, these individuals tended to be satisfied with increasing levels of supplies (i.e., increased structuring), irrespective of their preferences. Theoretical extensions to conventional person-environment fit theory and practical implications are discussed.

Imagine that you are invited out for dinner by your boss. How satisfied would you be if (a) you order what you want, or (b) your boss orders for you? Assume you are given no choice and your boss orders something that you might or might not like. Using a western mindset, we expect that having a choice would be most gratifying and that receiving something we did not chose or might not like as being most dissatisfying, correct?

Indeed, most theories of person-environment fit (or values-supplies fit) assume that individuals are mostly satisfied when they get what they want (Kristof-Brown, Zimmerman, & Johnson, 2005). This theoretical relationship is demonstrated in three dimensions in Figure 1 below. As environmental supplies (X in Figure 1) and values/preferences (Y in Figure 1) become more congruent, satisfaction (Z in Figure 1) increases. For instance, if the individual prefers a high amount of units of Y (2.5), and receives what they expect (2.5 on X) they will be highly satisfied (6 on Z). Contrarily, if the individual prefers a high amount of units of Y (2.5) but receives less than what they expect (-2.5 on X) they will be highly dissatisfied (0 on Z).

[Insert Figure 1 here]

In organization studies, fit or congruence between what individuals prefer and what organizations provide underlies various organizational structuring, motivation, and job-design theories. The degree of person-environment (i.e., P-E) fit is usually assumed to predict attitudes, behaviors, well being, as well as work outcomes such as absenteeism, turnover, and performance (Edwards, 1996; Kristof-Brown et al., 2005). The more congruent one's preferences are to what one receives (i.e., high P-E fit), the more satisfied the individual will be. This assumption pervades P-E fit theories. But is this assumption universally valid? What if individuals, who come from a very different cultural context (e.g., Taiwan), do not get what they choose? Is it possible that their degree of satisfaction is independent of what they might personally value? Applied to our dinner example, is

it possible that subordinates might still be very satisfied in a situation when choices are made for them, even though they may have preferred eating something else?

Until recently, P-E fit research has focused primarily on various types of fit and their outcomes in U.S. contexts; the boundary conditions of fit, as far as national culture is concerned, have remained relatively unexamined. With few exceptions (e.g., Nyambegera, Daniels, & Sparrow, 2001; Parkes, Bochner, & Schneider, 2001), P-E fit research conventionally has been context-free, and thus limited in its applicability.

Theoretically, the satisfaction of individuals from high power-distance cultures--where respect for authority and organizational formalization is high and where individual discretion is limited (Hofstede, 1991)--might not be a function of the congruence between their preferences and supplies, as it is for individuals from lower power-distance cultures (e.g., U.S.). Applied to our study (focusing degree of organizational formalization), we suggest that increasing supplies will be related to increasing satisfaction irrespective of preferences. Thus, our purpose was to investigate person-environment (P-E) fit and to explore the cultural boundaries of conventional P-E fit theory. We will examine two critical, but essentially unaddressed questions concerning fit:

1. Do P-E fit patterns vary across fundamentally different cultural contexts? That is, does congruence between individual preference for organizational formalization and the perceived organizational reality predict more favorable attitudinal outcomes across cultures (as a function of power distance)?

2. If cultural differences do exist, how do P-E fit patterns vary across individuals from low and high power-distance cultures?

PERSON-ENVIRONMENT FIT

The P-E fit phenomenon can take on many different forms, for example, person-job, person-organization, person-group, person-supervisor, and person-vocation fit, among others (Cable &

DeRue, 2002; Kristof-Brown et al., 2005). The general assumption underlying P-E fit theory is that positive attitudes and behaviors are a function of the compatibility of the individuals to their environments (Kristof, 1996).

Why should congruence predict satisfaction? The theory of need fulfillment (Dawis & Lofquist, 1984; Locke, 1976; Rice, McFarlin, Hunt, & Near, 1985) suggests individuals will experience positive job attitudes to the extent that their values or needs are satisfied (see also Cable & Edwards, 2004; Kristof, 1996; Masterson & Stamper, 2003). The theory of value congruence or value similarity proposes that individuals are attracted to contexts that reflect their needs, aspirations, personalities, and identities, and that individuals shape and are shaped by these contexts (Chatman, 1991; O'Reilly, Chatman, & Caldwell, 1991; Schneider, 1987). When the value patterns of organizations and individuals are congruent, individuals develop a sense of attractiveness and belonging to the organization, resulting in positive attitudinal outcomes. Given that job satisfaction predicts work performance (Judge et al., 2001), it is important that elements of P-E fit theory are used in practice. However, does national culture moderate the nature of fit? Specifically, is congruence needed to experience satisfaction? We discuss this issue next.

P-E Fit and National Culture

In this study, we focused on preference for organizational structure and whether fit between preferences and supplies predicted satisfaction. Organizational structure can be described as a mechanism that reduces behavior variability and that coordinates the activities of its members in order to efficiently achieve organizational objectives (Burns & Stalker, 1961). Coordination within an organization is facilitated by the establishment of hierarchical structures and the delegation of authority to supervisors to specify rules and procedures for subordinates.

One of the key challenges managers of multinational firms face concerns how to find the most effective ways of structuring in various cultures. According to contingency theory, there is no

best way to structure organizations. Rather, organizational design must be aligned to its context if the organization is to perform well (Burns & Stalker, 1961; Miles & Snow, 1978). Among various environmental factors (Burns & Stalker, 1961), contingencies also include national culture (Agarwal, 1993; Child, 1981; Hofstede, 1980, 1991, 2001; Lachman et al., 1994; Shenkar & Von Glinow, 1994).

Although empirical evidence generally shows that fit matters (Kristof-Brown et al., 2005), there is a serious lacuna in P-E fit research because most of the studies were conducted in the North American (U.S.) context. National culture could potentially moderate the extent to which fit matters and indeed how it is conceptualized. Salancik and Pfeffer (1978) have indicated the problems of need-satisfaction models as failing to “take into account the social context in which work occurs and how this context affects attitudes and actions” (p. 224).

One of the most robust and most studied cultural dimensions, power distance, refers to the degree of inequality existing between a less powerful and a more powerful player in society (Hofstede, 1980, 1991, 2001). Power distance is probably the most relevant cultural factor affecting organizational structuring (Huang & Van de Vliert, 2003). We expected power distance to influence individuals’ evaluation and reaction to P-E fit in several ways. High power distance represents a hierarchical orientation and reflects employee’s deference to authority and obedience to rules (i.e., the situation is “strong,” suggesting that individual choice and behavioral discretion is limited, Rousseau & Fried, 2001). In countries with a large power-distance culture, people take social inequality for granted and less powerful individuals readily accept the influence of the more powerful individuals (Hofstede, 1991; Huang & Van de Vliert, 2003).

Thus, despite the evidence of its motivational properties in many Western organizations, the effectiveness of participatory management is debatable in a high power-distance culture like the Chinese, which traditionally promotes the virtues of submission, humility, tolerance, and hierarchy

(Hui & Tan, 1995). Similarly, leadership styles in these contexts tend to be mostly directive and hierarchical, as are systems of organizing. Contrarily, low power-distance cultures generally demonstrate leadership styles that are more participative and systems of organizing that are more decentralized (Antonakis & Atwater, 2002; Antonakis & House, 2002). In low power-distance cultures, what would be valued is having a choice (i.e., the situation is weak suggesting a large discretion in terms of the choice an individual has). Thus, individuals might or might not want low degrees of formalization. To the extent that their need is congruent to what they receive, they will be satisfied. Individual differences are more predictive in weak than in strong situations (Rousseau & Fried, 2001). Individual differences that might predict the extent to which individuals would like to have structured environments could include, for instance, cognitive style--the extent to which an individual likes to operate within given structures and procedures or whether they like to be in novel situations and to take risk (Baer, Oldham, & Cummings, 2003).

Theoretically, in high power-distance contexts, individual opinions and preferences (the P component in P-E fit) might not be very important to an individual's satisfaction. A discrepancy between the P and E may not provoke negative attitudinal outcomes as it might in a low power-distance culture, because individuals in high power-distance cultures are more ready to accept what authority assigns to them. Therefore, increased structuring might be related to individual satisfaction irrespective of personal preference, because increased structuring is generally valued in these cultures. Furthermore, even though individual preferences do exist, their impact on individual attitudinal and behavioral outcomes is considerably reduced and replaced by shared cultural values (Markus & Kitayama, 1991), particularly in situations where individual preferences are in conflict with socio-cultural values (i.e., individual preference is downplayed).

Furthermore, in high power-distance contexts, it is possible that those who have less power might still be content in situations where they do not have much personal choice (or where their

choices are not fulfilled). For example, Asians tend to be more intrinsically motivated when choices are made for them by authority figures or peers. In contrast Americans tend to value personal choice and are dissatisfied when choices are made for them (Iyengar & Lepper, 1999). Studies even suggest that individuals in high power-distance cultures may perform better under disempowered conditions where individual choice and discretion are limited (Eylon & Au, 1999; Mead, 1967). These findings are in line with those of Huang and Van de Vliert (2003) who found that in large power-distance countries, intrinsic job characteristics such as autonomy do not predict job satisfaction very well. Similarly, Radford, Mann, Ohta, and Nakane (1991) found differences in decision-making styles between Australian and Japanese students. Whereas Australians favored the “choice” style, which emphasizes careful individual thought (i.e., individual preference and decision are important), the Japanese reported greater use of decision styles with reference to others, including superiors as well as peers. These results again indicate that in high power-distance cultures, the P component (i.e., one’s individual preferences and decisions) may not play an important role in P-E fit.

In summary, we expected that in high power-distance contexts, individuals would not necessarily be dissatisfied when preferences and supplies are incongruent. That is, a misfit between one’s preference regarding degree of structure and formalization and what one experiences in terms of structure and formalization would be unrelated to satisfaction. Furthermore, given the hierarchical nature of high power-distance contexts, satisfaction would be predicted by increased structuring (i.e., a more formalized organization where tasks are highly structured, information is more limited, and responsibilities are explicit and few). Contrarily, in low power-distance contexts satisfaction would be predicted by increasing congruence between supplies and preferences. We thus tested the following hypotheses:

H1: Power distance moderates the extent to which P-E fit predicts satisfaction.

H2: In low power-distance cultures, increasing congruence between individual preference for structuring and environmental supplies is positively associated with job satisfaction.

H3a: In high power-distance cultures, increasing congruence between individual preference for structuring and environmental supplies is unrelated to job satisfaction.

H3b: In high power-distance cultures, individuals will be more satisfied when the organization is structured in a more formalized way, irrespective of individual preferences.

METHOD

Data were collected from several national subsidiaries of a high-technology Taiwanese multinational manufacturer in Taiwan, France, Germany, Italy, the Netherlands, and the UK by means of an on-line survey. Access to participants was granted by the multinational, which was interested to participate in this study to learn how preferences for structuring might vary across cultures. Participants were contacted by e-mail and responded anonymously to the survey.

The response rate was 29.78% across samples and the total sample size was $n = 772$. Most of the participants were male (61.5%). Participants represented a wide array of job levels including non-management (60.5%), lower management (24.7%), middle management (10.5%), and top management (4.3%). Job function was also well dispersed among respondents, including production/manufacturing (9.5%), sales/marketing (36.7%), finance/accounting (9.3%), human resources management and administration (13.9%), and R&D (30.7%).

Participants were categorized into three cultural groups based on their similarity regarding power distance (and to maximize group cluster size). Taiwan was kept separate to determine whether the results from the high power-distance European countries replicated those of the Taiwanese sample. The three groups were: (a) Taiwan ($n = 577$), (b) France and Italy (total $n = 84$)—constituting the two high power-distance groups; and (c) Germany, UK, and the Netherlands ($n = 111$), which constituted the lower power-distance group (following Hofstede's classifications, 2001;

see also Bond & Hwang, 1986; Crozier, 1964; Lawrence & Edwards, 2000; Merritt, 2000; & Tayeb, 1993). To justify the pooling decision, we conducted tests of homogeneity of variance and equivalence of means within the groups and results supported our chosen groupings.

Participants completed three measures, representing the independent and dependent variables. Although common methods bias can inflate reported effect sizes in certain studies, particularly for attitude-attitude relationships (Podsakoff et al., 2003), we included predictor and outcome variables reported by the same person at the same point in time for several reasons, stemming from constraints imposed by the firm but also by design. Following the firm's request we had to guarantee anonymity of responses, which precluded gathering data in different points in time (necessitating the use of identifiers). In any case, we were only given access to participants in the event that they responded to one questionnaire only, which prevented us from obtaining data in a second wave. Next, and most importantly, self-report measures appear to be most appropriate for introspectively experienced phenomena such as employees' perceptions of their job experiences (see Lambert et al., 2003). Furthermore, we contend that the relationship between fit and outcomes using common source may reflect reality rather than artificial bias (see Caplan, 1987). It would not be possible and indeed meaningless to use others' ratings to measure a target individual's preference, how the target sees reality, and how satisfied the target is with this reality.

Finally, using Edwards' (1994) methods (discussed later), we analyzed the relationships between fit and outcome by examining the response surface shapes (e.g., Figure 1) rather than only looking at the correlations among constructs. One of our objectives was to compare the shape of the response surfaces across cultures. If the responses surfaces, as well as the estimated regression models are moderated by culture in theoretically-predictable ways, this result would suggest that respondents react differently to fit (as a function of culture) despite the fact that this data were

gathered from the same source. Thus, one way to gather measures in a commensurate and comparable way across cultures was to use a uniform instrument and method.

Measures

Our measures of degree of formalization represented the extent to which an organization uses rules and procedures to prescribe behavior (Fredrickson, 1986). We measured employees' (a) preference (i.e., values) regarding the degree of formalization in the workplace, (b) perceived reality (i.e., supplies) for the degree of formalization in the organization, and (c) satisfaction with the way their work was structured.

We developed four parallel items to measure each of the three constructs based on the conceptualizations offered by the organizational structure literature (Galbraith, 1977; Wally & Baum, 1994; Pugh & Pheysey, 1992). Example items for perceived reality (i.e., organizational supplies) included "employees of the company communicate through formally designed channels" and "clear rules exist for reporting problems occurring in the fulfillment of one's everyday tasks." The items were reworded as appropriate to measure both individual preferences and satisfaction for formalization. In this way they were commensurate and allowed a direct comparison of the person and the organization components and the extent to which their congruence predicted satisfaction (Caplan, 1987; Edwards, 1994). A six-point scale with appropriate anchor descriptor points was used to measure the extent to which the respondents agreed with the statements. The questionnaire was developed in English and was translated into the various target languages. The back-translation technique was then applied and the results were checked by independent experts.

Data Analytical Strategy

Fit has, in the past, generally been tested by using difference scores (i.e., the algebraic difference between preferences and perceived realities) as predictors of satisfaction, even though it has long been known that using difference scores can result in flawed findings (Bereiter, 1963;

Cronbach & Furby, 1970). In order to overcome the deficiencies of using of difference scores we employed a polynomial regression technique together with response surface methodology to test our hypotheses (Edwards & Parry, 1993; Edwards, 1994, 2001a). The difference scores model was not excluded from the outset. Rather, it was treated as a special case (i.e., restricted models) of the unconstrained polynomial regression model, and model comparisons were conducted to determine which model best fit the data (refer to the Appendix for more detailed methodological explanations).

Response surfaces, similar to what was depicted in Figure 1, were graphed according to the best-fit model so as to facilitate the interpretation of the relationships between the variables. We used the Chow test to determine the moderating effect of culture on fit (Chow, 1960). That is, we specifically examined whether the parameter estimates of the regression models used to plot the response surfaces were equal across different cultural groups.

RESULTS

Tests of construct validity invariance (equivalence) were first undertaken to determine whether the constructs were reliably measured across the cultural groupings. We used confirmatory factor analysis, a special case of an *a priori* structural equation model in which items are constrained to load on their respective factors. With this procedure, we determined whether the factors were equivalent/invariant across groups (see Van de Vijver & Leung, 1997; Vandenberg & Lance, 2000). We examined whether (a) factor loading patterns were the same (i.e., configural invariance, suggesting the items are manifest indicators of the same factor across groups) and (b) loadings were equivalent (i.e., metric invariance, suggesting that the factor affects the items in equivalent ways across groups). One item was found to be noninvariant and was discarded. The results, based on the three remaining items, are reported in Table 1. As is evident, these results demonstrated satisfactory cross-cultural measurement equivalence (i.e., configural and metric/loading invariance) suggesting that the items were being reliably measured across the groups.

[Insert Table 1 here]

The means, standard deviations, and correlations among the factors for various samples sets are reported in Table 2. Satisfaction was positively correlated with perceived organizational reality and, to a lesser extent, individual preference (it was encouraging to see that apart from the correlation of satisfaction to reality, the majority of the correlations among the variables, particularly the independent variables were modest and to some extent nonsignificant, suggesting that common methods variance was not as problematic as it may have been). Generally, respondents held significantly higher preferences for formalization than they received in the organization (paired-sample t-test $p < .001$ for all the three sample sets).

[Insert Table 2 here]

Results of the estimated polynomial regression models together with the model comparison tests are reported in Table 3. Constrained square difference score models, unconstrained quadratic polynomial models, as well as higher order cubic polynomial models were compared. The data indicated that the quadratic polynomial model best represented the data for all groups.

[Insert Table 3 here]

In order to test Hypothesis 1 which posits that culture will moderate the extent which P-E fit predicts satisfaction, we conducted four Chow tests to examine the equality of regression coefficients across the various cultural groups (Table 4).

[Insert Table 4 here]

First, the regression results of the three groups were compared. As expected, we found significant differences among the regression estimates of the three groups. Comparisons were then made between the regression estimates of the two high power-distance groups (Taiwan vs. the France & Italy sample). As expected, the Chow test showed that there was no significant difference between the two sets of regression estimates.

Next, we compared each of the high power-distance groups with the low power-distance group (Germany, UK and Netherlands samples). Significant differences in the sets of regression coefficients were found between Taiwan and the low power-distance group. A marginally significant difference was found between the European high- and European low-power distance groups. The results suggested that the data of individuals from high and low power-distance cultures did not demonstrate the same fit patterns. However, the results from the two high power-distance groups were essentially the same. Thus, Hypothesis 1 was supported.

To test Hypotheses 2 and 3, and to better interpret the nature of the quadratic polynomial regression models, we graphed the response surfaces of the estimated models for the three cultural groups (see Figures 2, 3, & 4). As expected, the response surface for the low power-distance group (Germany, the UK, and the Netherlands) demonstrated support for the conventional P-E fit hypothesis (given the similarity of Figure 2 to Figure 1).

[Insert Figures 2, 3, & 4 here]

For the low power-distance group (Figure 2), satisfaction was generally higher when there was congruence between individual preference and organizational reality ($X = Y$). The slope along the $Y = X$ line was straight ($a_2 = 0.12, p > .05$) and positive at the origin ($a_1 = 0.77, p < .001$), whereas the slope along the $Y = -X$ line was convex ($a_2 = -0.58, p < .001$), with a slightly negative slope at the origin ($a_1 = -0.03, p < .05$). Satisfaction increased as the perceived reality became more congruent to preference, attaining its highest point around the line of perfect fit ($Y = X$). Satisfaction decreased as it exceeded or was less than the preference. Moreover, satisfaction was higher when both preference and reality were high (i.e., when the organization is structured in a more formalized way) than when both were low. Although we did not expect the positive slope of the surface along the $X = Y$ line, congruence generally leads to higher satisfaction, thus supporting Hypothesis 2.

The response surface for the Taiwan sample is illustrated in Figure 3. The slope along the $Y = X$ line was slightly concave ($a_2 = 0.05, p < .01$) and positive at the origin ($a_1 = 0.74, p < .001$), whereas the slope along the $Y = -X$ line was more convex ($a_2 = -0.17, p < .01$), with a positive slope at the origin ($a_1 = 0.66, p < .001$). Individual preference did not contribute to the prediction of the level of satisfaction, thus supporting Hypothesis 3a. Contrarily, a strong positive relationship could be observed between perceived reality and satisfaction. That is, increasing formalization was associated with satisfaction, supporting Hypothesis 3b.

Similar results were found for the high power-distance European group (France & Italy). Figure 4 depicts the estimated response surface for this group. The slope along the $Y = X$ line was straight ($a_2 = 0.02, p > .05$) and positive at the origin ($a_1 = 0.69, p < .001$), whereas the slope along the $Y = -X$ line was straight ($a_2 = -0.06, p > .05$), with a positive slope at the origin ($a_1 = 0.70, p < .05$). Congruence did not predict satisfaction, thus supporting Hypothesis 3a. Furthermore, satisfaction was general higher when the work was structured in a more formalized way, independent of the preference of employees (thus supporting Hypothesis 3b). From the results of Chow tests described earlier, there was no significant difference between the regression coefficients of the two high power-distance groups (whereas the high power-distance groups different significantly from the low power-distance group). Collectively these results provided support for our theorizing regarding the moderating role of culture on fit.

DISCUSSION

The current study is, to our knowledge, the first to use Edwards' (1994) method to examine the P-E fit hypothesis for cross-cultural purposes. We extended previous P-E fit research by assessing how power distance moderates the relationship between fit and outcomes. The results lend support for the conventional P-E fit-satisfaction link in the low power-distance group but not in the high power-distance groups, as we expected. More specifically, results obtained from the low power-

distance group (i.e., Germany, the UK, and the Netherlands) confirmed what is known in the extant literature: the closer preferences were to supplies, the more satisfied employees were.

However, results from the two high power-distance groups (i.e., Taiwan, and France plus Italy) did not demonstrate what would have been traditionally predicted from P-E fit theory. In these cultures, employees' level of satisfaction tended to be determined solely by supplies, whereas their preferences (and its congruence to supplies) did not contribute to their level of satisfaction. More specifically, they tended to be more satisfied when the organization was structured in a more formal way (i.e., more explicit job descriptions and rules, clearer prescriptions for behaviors, etc.), independent of what their individual preferences were.

The main thrust of our findings is that individual preferences did not really matter in predicting satisfaction in the high power-distance cultures. In such a high power-distance context, individual preferences, choices, and opinions might cede to authority, hierarchy, and social norms. Fit between individual preferences and reality seems to become less relevant in predicting attitudinal outcomes.

Do these results imply that individuals in high power-distance cultures are totally obedient and that they do not care about their own preferences and interests at all? We think this would be a false conclusion to draw. As Deci and Ryan (2000) state, an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness, which are universally valid for all human beings. Individuals in high power-distance cultures might seem to not need autonomy; however, Deci and Ryan (2000) argue that this perception is incorrect because the means through which autonomy is expressed differs across cultures. In other words, in both high and low power-distance cultures autonomy is crucial for intrinsic motivation and well-being, but the forms that autonomy takes can vary according to what is cultural meaningful (Deci & Ryan, 2000; Chirkov et al., 2003, 2005). For example, Chirkov et al. (2003) argued that if a person

has fully assimilated or integrated ambient cultural values which lend priority to authority, this person can still be considered as highly autonomous from this cultural perspective.

Another issue worth mentioning is that our results of all the cultural groups indicate that more formalized structure can lead to higher satisfaction. This phenomenon is consistent with our prediction for respondents in high power-distance cultures, but is unexpected for the low power-distance cultures. As discussed earlier, workers in large power-distance cultures may perform better under disempowered conditions where tasks are structured, information is more limited, and responsibilities are explicit and few (Eylon & Au, 1999)—in these situations, higher formalization tends to be considered as more “socially” desirable (see also Westwood, Sparrow, & Leung 2001). However, for the low power-distance group we did not expect that congruence at high formalization levels predicted higher satisfaction than did congruence at low levels of formalization. This result, however, replicates previous research. In Kristof-Brown et al’s (2005) review on P-E fit, they observed that for studies that used polynomial regression methodology, the surface graphs generally demonstrate that attitudes are most positive when P and E are high versus when they are both low. Applied to our findings, there are at least two plausible explanations.

First, this phenomenon may reflect the fact that formalization is useful and can have a positive impact on employees’ attitudes in certain organizational contexts even in low power-distance contexts, depending on how the formalization is used (see De Treville & Antonakis, in press). Adler and Borys (1996) distinguished two types of formalization: enabling and coercive. The former may (a) provide well-designed procedures that would facilitate task performance and thereby augment employees’ pride of workmanship; (b) reduce role conflict and ambiguity, thereby increasing work satisfaction and reducing feelings of alienation and stress (Jackson & Schuler, 1985; Podsakoff et al., 1986); and (c) confer legitimacy on workplace authority relations and buffer subordinates from arbitrary power (thus solidifying the bond between the worker and the firm, Lincoln & Kalleberg,

1990). In this study, the nature of formalization tackled by our measurement items may have been seen as reflecting enabling rather than coercive formalization. As a result, congruence at high levels of formalization was associated with better employee satisfaction than congruence at low levels.

Second, and in the context of a low power-distance culture, it is possible that individuals are more satisfied when they have something they want as compared to not having something they do not want. Consider the case of our restaurant example. An individual who does not like lobster bisque will be happy not to have it. However, another individual who might like lobster bisque and gets it will be comparatively happier than the former individual. We leave it up to future research to examine why congruence at high P-E levels is related to higher satisfaction than is congruence at low P-E levels.

THEORETICAL IMPLICATIONS

Our results demonstrated that the conventional conceptualization of P-E fit does not stand up to empirical scrutiny in high power-distance cultural contexts. Clearly, P-E fit theory needs to take into account the effects of culture, as well as other contextual moderators, in its predictive models. Fit is generally considered as a kind of compatibility or equivalence between one element of the person (e.g., one's value preferences) and its environmental counterpart (e.g., organizational values). Ignoring the possible effects of other contextual factors suggests that the conventional models of fit are incomplete. Most of the studies on P-E fit tend to interpret the concept of P-E fit in a relatively superficial way (as if every supply must be aimed at satisfying the values/needs of the person). It is thus necessary to broaden the scope of P-E fit studies and use additional criteria suitable to various cultural contexts.

One additional criterion that could be incorporated in the future P-E fit research is socio-cultural norms or values. Past P-E fit research usually conceived of fit as an individual level construct, in which one compares individual values or preferences with another organizational

component to predict outcome. However, there might exist certain higher level variables, for instance, social norms or cultural values, that are distinct from individual preferences and are equally (or even more) important for determining the attitudinal and behavioral outcomes in that specific socio-cultural context. Newman and Nollen (1996, p. 755) argued that “national culture is a central organizing principle of employees’ understanding of work, their approach to it, and the way in which they expect to be treated. National culture implies that one way of acting or one set of outcomes is preferable to another.”

Although individuals within one cultural setting may hold different values and preferences (Au, 1999; Martin, 1992), these individuals are still exposed to the same shared values and norms at a societal level, which might influence their sense-making and interpretation of the events in daily life (Salancik & Pfeffer, 1978; Thomas & Velthouse, 1990). These two levels of values and preferences may coexist in the same person; they might also be structured in a hierarchical way and influence individuals’ reasoning and behavior in specific ways. As in our example, in high power-distance cultures social norms emphasizing the value of respecting rules and authorities seem to override individual preferences in determining one’s level of satisfaction at work. Future research should extend P-E fit study not only to various cultural contexts, but also to a multilevel paradigm from which more comprehensive understandings of P-E fit can be derived.

MANAGERIAL IMPLICATIONS

Managers in multinational companies wishing to increase the level of attitudinal outcomes of their employees based on P-E fit theory should pay special attention to a larger set of parameters before acting. As indicated in our results, a mismatch between individual values/preferences and organizational factors is not associated with unfavorable attitudinal outcomes in high power-distance cultural contexts. Other elements such as cultural norms need to be taken into account. An in-depth and comprehensive understanding of local culture is thus indispensable for international managers.

This principle is applicable to both methods of improve fit: adjusting the P component (e.g., better personnel selection) or adjusting the E component (e.g., modifying organizational structure or culture). In certain cultural settings (e.g., high power distance), employees can still be highly satisfied and committed to their organization even when their individual preferences and values do not fit perfectly with those of the organization. This result implies that other selection criteria (e.g., general intelligence, technical competencies, ethical development, etc.) should also be taken into account in recruitment process.

Managers of multinational corporations may adapt organizational structuring (the E component) to fit the preferences and values of their local employees in the hope of creating higher satisfaction by paying attention to local demands (Prahalad & Doz, 1987). Alternatively, following the precepts of “job fit” theory, managers should select and to place individuals in jobs that complement their preferences and competencies. Whereas this strategy can be successful in certain cultural contexts (e.g., low power-distance cultures), it may be less effective in other cultural settings (e.g., high power-distance cultures) because the nature of fit is interpreted differently across cultures. As argued by Walsh (2004, p. 304): “if culture manifests itself through how people think, feel, and act, then individuals’ thoughts, feelings, and actions will likely be reflected through the structures they design and, as a result, the organizations they create”. There is surely a need for multinational firms to design structures congruent with local values systems; however, we suggest that the best way of structuring results from simultaneously taking into consideration both individual values/preferences and cultural norms of the society, which are conceptually distinct and can have different effects on the consequences of fit. More specifically, it is not only individual preferences that count in determining how tasks should be designed (it is even not sure whether there will be an internal agreement/coherence on those preferences in the group)—cultural and societal factors matter too.

LIMITATIONS AND SUGGESTION FOR FUTURE RESEARCH

Despite the contributions of our study, our results must be viewed in light of some limitations. First, because we collected data from the same source, common method bias represents a potential threat to the quality of the results. Even though using the polynomial regression method may have mitigated this bias we encourage future research to include measures taken from different times and from different sources (where it is theoretically meaningful).

There is also a potential problem of response bias, especially for the respondents in the Chinese culture (Yang, 1981). Respondents from Taiwan might have provided socially desirable answers, thus producing spurious correlations. This problem is negligible in the present study because should there have been a serious problem of social desirability bias, the response surface would have tended to be flat and high at all places (because respondents would express high satisfaction no matter what they really feel or what supplies they received). The shape of the response surface for the Taiwan sample did not indicate this occurrence (and it closely resembled the shape of the European high power-distance group).

The cross-sectional design substantially limited our ability to infer causal relations among the variables. As suggested by Van Vianen (2000, p. 145), “the causal relation between fit measures and affective outcomes is best understood by first measuring fit and subsequently assessing affective outcomes at a later point in time.” Moreover, the dynamic aspects of the relationships of congruency to the outcome variables were not well observed in the present study. Consequently, the use of longitudinal designs is strongly encouraged in future research.

Finally, we grouped together qualitatively-different high power-distance cultures in order to conduct our analysis. Although our results were supportive of our grouping procedure and theorizing, future research should attempt to gather large samples from various cultures with various degrees of power distance to ascertain the extent to which our findings are replicated.

CONCLUSION

To conclude, the concept of fit, from a cultural standpoint, requires refinement and extensive examination. Current models simply do not address the complexities of societal values and culture and how these influence fit. As our results indicated, what is fit depends on where you are from. Future theories should consider contextual factors that might moderate how the traditional concept of fit is viewed. We hope that our study is a step toward making the concept of fit a bit more “fit.”

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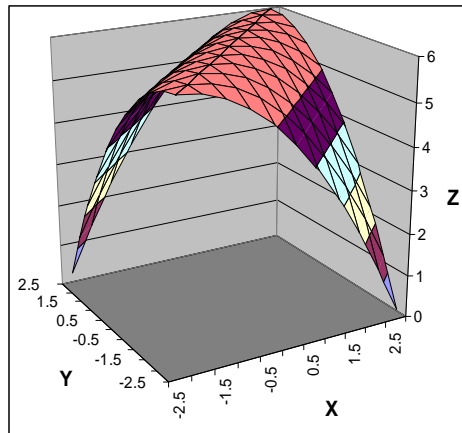
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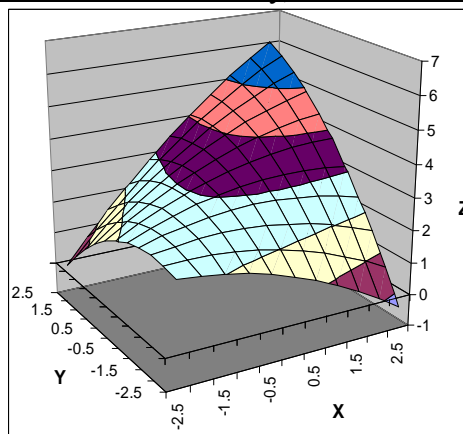
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Figure 1: Theoretical Response Surface of the Conventional Person-Environment Fit Hypothesis



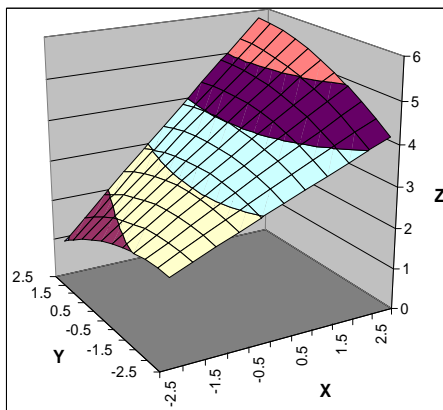
Note: X = perceived reality (supplies); Y = preference (values); Z = outcome (e.g., satisfaction)

Figure 2. Response Surfaces of P-E Fit for Germany, UK & the Netherlands (*low power distance*)



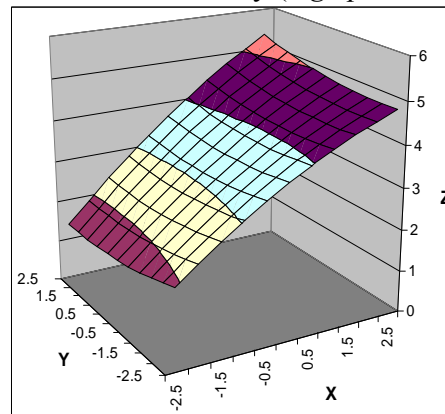
Note: X = perceived reality (supplies); Y = preference (values); Z = outcome (e.g., satisfaction)

Figure 3. Response Surfaces of P-E Fit for Taiwan (*high power distance*)



Note: X = perceived reality (supplies); Y = preference (values); Z = outcome (e.g., satisfaction)

Figure 4. Response Surfaces of P-E Fit for France & Italy (*high power distance*)



Note: X = perceived reality (supplies); Y = preference (values); Z = outcome (e.g., satisfaction)

Table 1: Measurement Invariance across Different Cultural Groups

Testing Conditions for Models	$\Delta \chi^2$	Δdf	CFI	RMSEA	P-close
Perceived Reality (X)					
Condition 1: $\Lambda_{form}^{(TW)} = \Lambda_{form}^{(FR/IT)} = \Lambda_{form}^{(D/NL/UK)}$ Factor loading pattern same for the three groups ^a	-	-	-	-	-
Condition 2: $\Lambda_x^{(TW)} = \Lambda_x^{(FR/IT)} = \Lambda_x^{(D/NL/UK)}$ Factor loadings identical	1.987	4	1.000	.000	.984
Individual Preference (Y)					
Condition 1: $\Lambda_{form}^{(TW)} = \Lambda_{form}^{(FR/IT)} = \Lambda_{form}^{(D/NL/UK)}$ Factor loading pattern same for the three groups ^a	-	-	-	-	-
Condition 2: $\Lambda_y^{(TW)} = \Lambda_y^{(FR/IT)} = \Lambda_y^{(D/NL/UK)}$ Factor loadings identical ^b	11.665*	4	.980	.050	.441
Satisfaction (Z)					
Condition 1: $\Lambda_{form}^{(TW)} = \Lambda_{form}^{(FR/IT)} = \Lambda_{form}^{(D/NL/UK)}$ Factor loading pattern same for the three groups ^a	-	-	-	-	-
Condition 2: $\Lambda_z^{(TW)} = \Lambda_z^{(FR/IT)} = \Lambda_z^{(D/NL/UK)}$ Factor loadings identical	6.396	4	.997	.028	.795

Note: Λ = matrix of factor loadings; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; P-close = RMSEA test of close fit. We performed three CFA's (for the three factors separately). We did not perform a CFA with the three correlated factors simultaneously because their second-order causal structure could not be modelled using structural equation modelling (at least to our knowledge, no published paper exists which shows how to test complex congruence hypotheses using latent variables). Indeed, our model comparison tests using regression generally showed that the first-order models were inferior to the quadratic model.

* $p < .05$.

^a Given that we had three indicators per factor, the model tested were saturated. Hence no goodness of fit tests can be computed on these models.

^b The chi-square (likelihood ratio) test for the model constraining equal factor loadings across different cultural groups for this factor was significant ($p < .05$). We conducted follow-up tests of factorial invariance across the groups to identify which item was not invariant. Following the triangular heuristic procedure advanced by Cheung and Rensvold (1999), we found no item to be significantly non-invariant when paired with different referents. Because the CFI and RMSEA of this model were quite satisfactory (CFI = .980, RMSEA = .050), we assumed that factor loadings across the cultural groups were equal for this construct (and that a significant difference was detected in the first chi-square test due to increased power resulting from greater degrees of freedom).

Table 2: Descriptive Statistics, Zero-Order Correlations, and Reliability for Measures of Supply, Preference, and Satisfaction

Sample	M	SD	1	2	3
All samples: n = 772					
1. Organizational reality	3.74	1.01	.82		
2. Individual Preference	4.72	.75	.22***	.68	
3. Satisfaction	3.75	1.02	.83***	.16***	.86
Taiwan (high power distance): n = 577					
1. Organizational reality	3.84	.99	.86		
2. Individual Preference	4.79	.71	.21***	.77	
3. Satisfaction	3.85	1.00	.85***	.13**	.89
France + Italy (high power distance): n = 84					
1. Organizational reality	3.40	1.09	.73		
2. Individual Preference	4.59	.86	.18	.61	
3. Satisfaction	3.41	1.02	.82***	.15	.70
Germany + UK + the Netherlands (low power distance): n = 111					
1. Organizational reality	3.45	.98	.73		
2. Individual Preference	4.47	.84	.14	.50	
3. Satisfaction	3.43	.99	.71***	.16	.76

Note: Alpha coefficients in the diagonal, adjusted by Spearman-Brown prophecy formula for four items. Charter (2003) has noted that alpha coefficients can be unstable at low sample sizes, which might be the case with the two European groups. Given that alpha is a lower-bound measure of reliability and not necessarily one of unidimensionality (Cortina, 1993; Green, Lissitz, & Mulaik, 1977) and because the CFA results were relatively robust, we can assume that the measures were reliably measured across the three groups.

** $p < .01$, *** $p < .001$.

Table 3: Polynomial Regressions and Model Comparisons

Culture	Samples	Constrained Equation		Unconstrained Equation					Model Comparisons		
		$(X-Y)^2$	R^2	X	Y	X^2	XY	Y^2	R^2	F_C	F_H
High PD	Taiwan	-.190***	.437***	.702***	.038	-.006	.112**	-.053	.734***	308.123***	.764
High PD	France & Italy	-.143***	.358***	.691***	-.004	-.048	.042	.027	.683***	31.817***	0.134
Low PD	Germany, UK, & Netherlands	-.180***	.348***	.368***	.398**	-.081	.347***	-.151*	.635***	33.776***	1.063

Note: PD = power distance. For columns labeled $(X-Y)^2$, X , Y , X^2 , XY , Y^2 , table entries are unstandardized regression coefficients from equations in which X is supplies, Y is values, and the dependent variable (Z) is satisfaction. The column labeled F_C contains F ratios for the test of constraints imposed by the squared difference score. The column labeled F_H contains F ratios for the test of higher-order terms, which for the quadratic equation includes the four following cubic terms X^3 , X^2Y , XY^2 , Y^3 .

* $p < .05$, ** $p < .01$, *** $p < 0.001$.

Table 4: Chow Tests on the Equality of Regression Coefficients across Groups

Groups of Comparisons	DF	<i>F</i>	<i>P</i>
TW (high PD) vs. FR & IT (high PD) vs. D & UK & NL (low PD)	5,729	5.87***	0.00
TW (high PD) vs. FR & IT (high PD)	5,632	1.38	0.23
TW (high PD) vs. D & UK & NL (low PD)	5,654	4.34***	0.00
FR & IT (high PD) vs. D & UK & NL (low PD)	5,171	2.06*	0.07

Note: TW = Taiwan, FR = France, IT = Italy, D = Germany, UK = the United Kingdom, NL = the Netherlands, PD = power distance.

* $p < .1$, *** $p < 0.001$.

APPENDIX: TEST OF CONGRUENCE USING POLYNOMIAL REGRESSIONS

In the past, difference scores were the most popular method to study congruence, fit, similarity, and agreement. The use of difference scores is highly problematic because of reduced reliability, ambiguous interpretations, confounded effects, and untested constraints (see Edwards, 1994, 2001a, 2001b for detailed discussions). As a result, we adopted the procedures proposed by Edwards (1994, 2001a).

First, prior to the multiple regression analysis, we scale-centered the constructs by subtracting the midpoint of each (3.5 in this study) in order to reduce problems of multicollinearity associated with curvilinear and interaction terms (Edwards, 1994). This scale-centering technique can also contribute to facilitating the interpretation of the derived response surfaces (Edwards & Parry, 1993; Edwards, 1994, 2001a).

Second, we chose one conceptual model of congruence that was theoretically justified, and identified the corresponding regression equations to test the model. In this study, the congruence hypotheses posits that outcomes (satisfaction) will be higher when preference (values) and perceived reality (supplies) regarding formalization are close to each other and will be lower when there is a mismatch. This symmetrical congruence hypothesis can be best illustrated by a squared difference model together with a quadratic equation, which can capture curvilinearity and allows a test of the hypothesis that the surface changes shape along the line of perfect congruence. Therefore, we use the squared difference score model (refer to equation 1, which can be expanded into equation 2) as the constrained model. The quadratic regression model (equation 3) served as the unconstrained model. We then made model comparisons for each sample (as noted in the last two columns of Table 3).

Let X = individual preference (values), Y = perceived reality (supplies), and Z = level of satisfaction (outcome)

Non-directive symmetric difference score model:

$$Z = b_0 + b_1(X - Y)^2 + e \quad (1)$$

$$Z = b_0 + b_1X^2 - 2b_1XY + b_1Y^2 + e \text{ (i.e., equation 1 expanded)} \quad (2)$$

Full unconstrained quadratic polynomial equation model:

(i.e., the main, interaction, and squared effects of supplies and values)

$$Z = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + e \quad (3)$$

Comparing equations 2 and 3 shows that equation 2 is nested in equation 3 in that four constraints are imposed on equation 2: (1) the coefficient of X is 0; (2) the coefficient of Y is 0; (3) the coefficients of X^2 and Y^2 are equal; and (4) the coefficients of X^2 , XY , and Y^2 sum to 0. It is imperative to empirically test the constraints imposed on the difference score models so as to identify the valid model in testing congruence hypothesis.

Third, we tested for the existence of higher order terms beyond those indicated by the unconstrained model (i.e., equation 3). We tested the cubic polynomial equation (equation 4) against the quadratic equation to ensure that the complexity of the underlying surface had not been underestimated (Edwards, 1994: 73). As reported in Table 3, F_C denotes the F ratio for model comparison between the constrained squared difference model and the unconstrained quadratic polynomial model; and F_H denotes the F ratio for model comparison between the quadratic model and its higher-order cubic polynomial model.

Higher order cubic polynomial equation model:

$$Z = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + b_6X^3 + b_7Y^3 + b_8X^2Y + b_9XY^2 + e \quad (4)$$

Finally, when the regression equation that best fits the data is identified, the corresponding response surface is plotted (Figures 2, 3, and 4) and interpreted.