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Demographic Effects on the Use of Vertical Sources of Guidance by Managers in Widely Differing Cultural Contexts

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ABSTRACT   Data provided by 7380 middle managers from 60 nations are used to determine whether demographic variables are correlated with managers' reliance on vertical sources of guidance in different nations and whether these correlations differ depending on national culture characteristics. Significant effects of Hofstede's national culture scores, age, gender, organization ownership and department function are found. After these main effects have been discounted, significant although weak interactions are found, indicating that demographic effects are stronger in individualist, low power distance nations than elsewhere. Significant non-predicted interaction effects of uncertainty avoidance and masculinity–femininity are also obtained. The implications for theory and practice of the use of demographic attributes in understanding effective management procedures in various parts of the world are discussed.

KEY WORDS • culture • demographics • leadership • management • sources of guidance

Demographics are frequently included in organizational research. Sometimes they are of theoretical interest in themselves, but often they serve as statistical controls for variability between samples that are being compared for other theoretical reasons. Pfeffer (1983) proposed that demographic variables have an important causal influence on a variety of organizational outcomes. A particularly active direction that recent demographic research has taken is to consider the implications of demographics for social relationships (e.g. Pelled et al., 2001). In the present study, however, demographics are treated as culture-like delimiters of social identity. This treatment leads us to address the more basic implications of an individual's personal demographic identity. Employees are found frequently to classify themselves and others into abstract social categories based on demographic attributes. Researchers have noted an especially strong tendency to use both physically perceptible and culturally meaningful characteristics such as age and gender to classify oneself as well as others (Fiske and Taylor, 1991). Within single nation studies, the individual attributes of age and its correlate seniority, as well as gender, are most often studied (Calas and Smircich, 1996; Heilman et al., 1989; Rhodes, 1983; Avolio and Waldman, 1994). The organizational literature about demographic characteristics tends to neglect the possibility that characteristics like these may have implications that vary from nation to nation.

Neo-institutional theory treats the current global array of recognized nation states as cultural institutions resulting from a global-scale social construction process (Krasner, 1988). The social identities that individuals maintain are often linked to the particular nation of which the individual is a citizen. Nation states, along with the associated idea of national sovereignty, provide one commonly accepted basis for defining groups of people. Nations generally respect the cultural independence of other nations; when this independence is not recognized, offending nations tend to incur global criticism and are sometimes sanctioned by organizations like the United Nations. Similar social construction processes form the basis for institutions linked to other identities like occupation, gender or ethnicity. Some of these processes link parties from many parts of the world, as in professional socialization based on training by universities throughout the world, with faculty whose views are mutually defined by their regular contact through meetings and academic media. Other processes that give demographic characteristics their social significance are more local, as in the development of gender roles in traditional societies that may be separated from global communication technologies.

The view that nations are culturally significant institutions is supported by comparative national studies of values. These studies show sufficient convergence in their results to give confidence that, with some important qualifications, nations provide a culturally meaningful way of identifying groups of people who experience similar socialization experiences from infancy to adulthood (Hofstede, 2001; Inglehart, 1997; Smith et al., 2002). At the individual level, we are socialized into modes of thinking and acting and into the development of social identities that create in-groups whose distinctive attributes we tend to emulate throughout life. These in-groups include interrelated categories of occupation, age cohort, gender, socio-economic status, and other demographic attributes.

An important question is that of whether these demographic identities are sufficiently similar throughout the world to have similar implications across many nations. Demographic identity groups may show global consistency due to either world-wide functional equivalence or parallel institutionalization processes. For example, across five diverse nations, older adults are more conscientious and agreeable, but less extraverted

and open to experience than young adults (McCrae et al., 1999). Across 26 nations, men are more assertive and open to ideas, whereas women are more agreeable, warm, open to feelings and neurotic (Costa et al., 2001). Religion has an element of globally institutionalized equivalence that is spread through immigration and evangelism. People having the same religion may sense some common identity and show some similarity in ways of thinking and acting regardless of their nationality. Yet some demographic characteristics may also have distinctive implications in particular nations or cultural groups of nations. For example, being a government official has a different status depending on, among other things, the political system of a particular nation.

Implications of Demographics for Reliance on Vertical Sources

The present study focuses on the implications that demographics have for the extent to which managers in 60 nations report relying on 'vertical' sources of guidance to deal with the work events that they encounter. The question of how demographics affect reliance on vertical sources is important practically even though very few studies of demographics have specifically addressed the vertical sources of guidance that we study here. The problem of how much the thoughts, decisions and actions of managers can and should be controlled by higher organizational authorities has been a central problem of management ever since ownership came to be separated from management in many large businesses in industrialized nations (Weber, 1947; Barney and Hesterly, 1996). It has also become a significant issue in debates about whether bureaucratic top-down influence by superiors and rules developed in nations having long industrial experience can be applied in nations that retain alternative business systems (Harrison,

1985). Introducing systems based on bureaucratic control into either local divisions of multinational corporations or local indigenous organizations seeking to adopt practices used elsewhere may be easier if they include at least some demographic groups or subcultures of managers who are open to bureaucratic control.

The problem of which control mechanisms are effective globally needs to be addressed by recognizing both the national and the demographic contingencies that affect the influence that managers will accept from senior leaders and systems of organizational rules. From a theoretical standpoint, the problem of vertical influence relative to manager self-direction and influence from subordinates has been addressed in organizational theories of bureaucracy, power and control, group theories about social roles, theories of participative, transformational, and self-directive leadership styles, and cognitive theories about decision making and social interpretation. The basis for understanding different sorts of socialization can be extended by applying neo-institutional theory (Krasner, 1988; Meyer et al., 1997) and social identity theory (Ellemers et al., 2002; Tajfel, 1978).

More practically, implementation of practices like industrial democracy, participation, and other forms of bottom-up management practice often reflects a universalistic position that organizations should rely on manager self-direction and take advantage of the knowledge that can be provided by lower level employees. However, there are reasons to expect contingencies linked to nation and other demographic characteristics that qualify this universalistic position. At the core of the debate about the importance and use of vertical sources is a tension between the agency problem of seeing that managers follow the economic and ethical priorities of the owners, and the expertise problem that managers need flexibility to use their own knowledge and that of their subordinates.

Existing research supports the view that national culture conditions how this tension is managed and how much guidance managers accept from above and below (Hofstede, 2001; House et al., 2004). Contrasts between possible organizational universals and possible cultural idiosyncrasies in how managers should balance guidance from above and below appear in debates about the global applicability of management practices. For example, Child (1981) provided an analysis of Germany and the UK that drew attention to cultural differences in the use of influence from above and below even within Europe. Smith et al. (2002) give information from 53 nations that shows national differences in how strongly managers report relying on vertical sources of guidance. These studies indicate that the ease and appropriateness of the use of vertical sources are culturally variable.

Demographic characteristics have also been said to influence manager use of vertical sources. However, the management literature has generally disregarded the combined effects of demographic characteristics and national culture. On the one hand, the authors of single-nation studies about demographic effects (e.g. Ely and Thomas, 2001; Tsui et al., 1992) typically do not address the question of whether these effects would replicate in other cultural contexts. On the other hand, while cross cultural researchers do frequently recognize the potential effects of demographic factors other than nation, they typically treat these effects as a source of error that needs to be controlled in order that valid cross-national comparisons can be made. Such error is controlled either by matching samples from different nations on demographic criteria like occupation (e.g. MOW, 1987) or industry (e.g. House et al., 2002), or else by estimating and partialling out variance that is attributable to demographic factors (e.g. Smith et al., 2002). Only rarely have both national culture and other demographic characteristics been substantively considered together.

The present article takes the position that demographic characteristics other than nation may also predict reliance on vertical sources as do nations. Many scholars recognize within-nation variability in the values and ways of behaving that are also associated with national culture (e.g. Au, 1999; Bell, 1990; Boyacigiller and Adler, 1991). Some demographics share the cultural characteristics of nations, in that they shape identity, thought and action from childhood. Like national cultural characteristics, bases of identity like gender and religion are transmitted from cultural groups to individuals through primary socialization during childhood. Other culture-like demographic bases of identity such as occupation are more closely linked to the secondary socialization that occurs later in life (e.g. Hofstede, 2001). Cultural bases of primary socialization are likely to be reflected in assumptions, beliefs and values, whereas the bases of secondary socialization are likely to be reflected in more easily changed attitudes and behaviours.

The Handling of Work Events

Our approach to the problem of how nation and other demographic characteristics affect managers' use of vertical sources is based on an event-meaning management perspective. This perspective focuses on the sources that managers use to handle the work events they encounter. In this approach, a central element in any manager's effectiveness is seen as the ability to influence the meaning that work events are given and thereby to shape the occurrence of future events. In handling work events, managers operate within a context of alternative sources of guidance, many of which extend beyond themselves as individuals (Peterson and Smith, 2000; Smith and Peterson, 1988). Our focus on sources of guidance is a development of earlier theories of organizational roles and decision making, drawing also on recent applications of theories of social cognition to organizations. Role

theory (e.g. Kahn et al., 1964) and control theory (e.g. Tannenbaum, 1968) specified particular categories of individuals such as superiors, colleagues and subordinates who surround anyone in a work situation. Role theory focused somewhat rationalistically on the expectations for typical role behaviour that people constituting an individual's role set send to a given individual. More recent theory recognizes that managers also receive guidance from other non-personal sources both inside and outside their employing organization, such as organizational rules, organizational norms and societal norms. Managers also appeal to these sources not just in general as providing role prescriptions, but in response to particular events or problems that occur in their work situation. Similarly, control theory, typical of decision theories of the time, focused equally rationalistically on making explicit decisions. More recent theory recognizes that much of what happens in organizations lies in changing meanings or understandings that shape actions, which arise from both the sort of deliberative inferences that are well described as 'making decisions' and from the more automatic, script and schema-driven actions that are better described as aspects of giving events meaning.

Early studies using the event-meaning management perspective reported different degrees of reliance by managers in the USA, China, Hong Kong, Japan and the UK on a variety of possible sources of guidance (Peterson et al., 1990; Peterson et al., 1996; Smith et al., 1996b). More recently, a larger scale survey was completed across 53 nations (Smith et al., 2002), showing wide differences in the sources of guidance that were most favoured. The present study draws on selected data from this survey. The eight sources specified in the survey were selected on the basis of prior literature (Peterson and Smith, 2000) and on the expectation that they would be among the most frequent sources in a wide variety of cultural contexts.

Smith et al. (2002) constructed a 'vertical-ity' index, which summarized the degree of reliance on four of the most frequently used sources of guidance. A high score on the index reflects strong reliance on superiors and on formal rules and procedures. A low score on the index reflects strong reliance on one's own experience and on one's subordinates. Smith et al. (2002) showed that the pattern of reliance on these four sources of guidance justified combining them into a single verticality index. Verticality was also found to be associated in meaningful ways with other characterizations of national culture based on several prominent comparative studies of cultural values (Hofstede, 2001; Schwartz, 1994; Smith et al., 1996a).

Global and Local Meanings of Demographic Attributes

The present study focuses on the verticality index in a way that moves beyond prior cross cultural research that simply controls for demographic characteristics as confounding factors that distort the effects of national characteristics. Figure 1 suggests that the meaning of demographic characteristics at any particular location is based on a blend of functional characteristics, global institutional characteristics and local institutional characteristics. Functional characteristics are those that are difficult to escape regardless of where in the world a demographic characteristic occurs. For example, extremes of very young or very old age physically limit the ability to engage in full-time employment. Globally institutionalized meanings and implications of a demographic characteristic are those that are similar throughout the world, not for functional reasons, but because of the global spread of norms, practices and understandings. For example, in most of the world, a period in childhood is treated as a more important time for education than for employment outside the home for pay. Locally or regionally institutionalized meanings come to be attached to demographics,

	Functional characteristics	Global institutional characteristics	Local institutional characteristics
Age	Occupational and life experience Experience with the value of rules and authorities	Effects of major world figures and events	Effects of locally significant figures and events
Gender	Child bearing Physical size	Global gender role norms Issues in global women's movement Gender-oriented media	Local gender role traditions Local adaptations of women's movement
Ownership	Responsibilities to foreign headquarters Responsibilities to an electorate Organization size Work routinization	Ownership-based global norms (e.g. global traditions about government practice, or about MNC management)	Ownership-based local norms (e.g. government practices linked to colonial heritage; norms about MNC management linked to local experience with foreign owners)
Department function	Functional requirements of organizations (e.g. external adaptation, internal coordination)	Global norms for organization design (e.g. due to regulators like the IMF, to deliberate imitation to facilitate financing, and to established practice)	Indigenous norms for organization design (e.g. due to historical, religious or industry heritage, and to norms of locally dominant industries)

Figure 1   Environmental characteristics likely to affect the relation between demographics and use of vertical sources

based on the histories and situations of particular parts of the world. For example, old age is more closely associated with wisdom and prestige in some parts of the world than in others.

A modest amount of prior research about demographics, discussed in the following sections, implicitly uses one or another of these basic logics. Such research provides a basis for tentative hypotheses about whether membership of some demographic categories should be expected to correlate with relatively high or low reliance on vertical sources. Management literature that is helpful for predicting the use of vertical sources includes: (1) role theory literature indicating whether people in superordinate or subordinate positions are the most consequential as role senders; (2) decision theory literature suggesting how important bureaucracy or hierarchy is for making decisions; and (3) the leadership-style literature that suggests how important self-leadership or participative leadership is relative to transformational or charismatic leadership.

Hypotheses

Initial hypotheses that effects are universal can and should be explicitly formulated and tested even when they are based on prior studies in only one or a small number of nations. However, these hypotheses will be tested using two-tailed tests, recognizing that prior research is limited, and that we should also seek evidence for moderator effects, since there is typically some basic theory and the occasional qualitative study suggesting cultural contingencies. For purposes of developing hypotheses, we separate the demographics of age and gender, which reflect personal characteristics linked to primary socialization and general life experience, from the demographics of organization ownership and department type, which are linked to secondary socialization within one's current occupation and organization.

We propose directional hypotheses for the main effects of each demographic characteristic on the use of vertical sources, based on the preponderance of literature for each characteristic. In so doing, we recognize that the empirical basis for these hypotheses is typically equivocal. For example, the institutionalized meaning of demographics may have only a limited functional basis (e.g. older and younger workers have the capability of doing many of the same things).

We are even more cautious in specifying directional hypotheses about cultural variations in the relationship between demographic characteristics and use of vertical sources. Although we expect that the institutionalized meaning of demographic categories is partly subject to global tendencies as in the age example noted earlier, it can also be significantly specific to particular cultural contexts. We therefore expect differences in the effects of demographic variables for the use of vertical sources in different contexts. Despite this general expectation, there are contradictory indications as to how demographic characteristics might vary with cultural region in their implications for the use of vertical sources.

Personal Demographics

It is possible to state a number of hypotheses based on the literature about the likely differences in verticality among demographic categories. However, with few exceptions, this literature is disproportionately influenced by research in a few economically developed nations, particularly the USA. One set of hypotheses worth stating and testing is that the results found to date are based on functionally equivalent physical characteristics of demographic attributes (e.g. gender) or broadly institutionalized social characteristics of demographic attributes (e.g. ownership) and so will generalize to other parts of the world. However, these will be weak hypotheses, given the frequently unexpected idiosyncrasies in the way that demographic

characteristics may be given meaning in particular nations.

A second set of hypotheses will test the extent to which these effects can be explained by the existing classification of national cultures provided by Hofstede (2001) based on individualism versus collectivism, power distance, uncertainty avoidance, and masculinity versus femininity. Hofstede's research has met with a number of criticisms that he summarizes and to which he has responded (Hofstede, 2001). His characterization of national cultures has the virtues of providing culture scores for many nations and continuing to show associations with many more recent, but less complete, characterizations of culture (Hofstede, 2001; Smith et al., 2002).

The hypotheses use the verticality index as the dependent variable and are formulated so as to test for the presence of main effects and interactions with cultural values for selected demographic predictors.

Age   Extensive reviews by Rhodes (1983) and by Davies et al. (1991) indicated that few studies provide any clear indication of replicable effects of age on leader behaviour. Although Davies et al. reviewed leader behaviour style rather than the use of vertical sources, the authors suggest that leader styles may change with increasing age. In principle, age-related variables could have implications for leader behaviour for both functional and institutional reasons. From a functional standpoint, although the effects of physical ageing are unlikely to affect reliance on vertical sources, the accumulated experience that comes with age has the potential for paradoxical implications. Ageing appears to increase the tendency to recognize the legitimate origins and the value of higher authorities and rules but also to increase the ability to act without a need to rely on guidance from above. From an institutional standpoint, cohort effects such as the charismatic impact of international leaders in different

historical periods might produce an element of global socialization specific to people who were affected by global events, such as large-scale wars or political changes. Local and national leaders and events may also have a stronger influence in particular parts of the world in a way that would produce an interaction between age and nation.

Functional considerations about increases in expertise and the sense that heroism has declined as a globally institutionalized ideal since the 'great man' days of the late 19th century suggest that the effects of age on work attitudes and values are typically linked to increases in conservatism as a concomitant of older age. The upshot is that older individuals would be expected to place more reliance on authorities and rules than would younger individuals. Counterbalancing this expectation is the basic fact that organizations are hierarchical and that older individuals will more frequently hold the senior positions that permit greater self-reliance and less need for guidance from written procedures or those in still higher authority. Furthermore, the more conservative older managers are unlikely to be the ones that have achieved promotion to senior positions. On balance, therefore, the literature about age considered in relation to our sample of experienced managers, many of them continuing in advanced training programmes suggests the following hypothesis.

> *Hypothesis 1a*: Age will be negatively associated with reliance on vertical sources of guidance in all nations.

Cultural variability in the social implications of age is associated with local institutional factors like local heroes and local experiences with bureaucratic forms of management. In particular, the USA and northern Europe are often characterized as youth-oriented societies, whereas in Middle Eastern, African and Asian societies age is held in higher regard. This difference is likely to be one element in the finding reported else-

where (Smith et al., 2002; see also Table 3) that vertical sources (with older people likely to be at higher organizational levels) are more important in collectivist societies like many in the Middle East, Africa and Asia, than in individualist societies. Specific predictions about societal differences in the *relationship* between age and the use of vertical sources require more speculation. Since reliance on vertical sources is stronger in nations high in collectivism and power distance, one possibility is that age has a lesser effect in these nations; there might be a need for those of all ages to rely on vertical sources, with younger managers required to do so only slightly more than older managers. In contrast, in individualistic nations, very senior managers are less likely to be constrained by traditions that would otherwise limit their discretion than would be the case in relatively collectivist nations. Hence, on balance, our expectation is that in nations low on collectivism and power distance, older managers are likely to feel freer to draw on their own experience than would younger managers.

> *Hypothesis 1b*: The negative association between age and reliance on vertical sources will be stronger in individualist, low power distance societies than elsewhere.

Gender   The research of Costa et al. (2001) suggested some degree of universality in gender effects, but the effect sizes were small, with substantial variation between nations in their magnitude. Organizational research about gender has addressed the way men and women enact leadership roles rather than their tendency to follow guidance from superiors in preference to their own views (e.g. Eagly and Johnson, 1990; Eagly et al., 1995). In a 14-nation study, Smith et al. (1997) found senior female managers to have a less internal locus of control than senior men, but a more internal locus of control than junior women. This study suggests that senior male managers across many nations may be less deferential to rules and authori-

ties and rely on their own judgement more than will women.

The literature about gender suggests that women are likely to be more deferential to rules and authorities than men. Even within English language literature, however, exceptions have been documented. Nonetheless, the first hypothesis to be tested is that gender has similar effects elsewhere to those most often reported to date.

> *Hypothesis 2a*: Being male will be negatively associated with reliance on vertical sources of guidance in all nations.

Contrary to Hypothesis 2a is a substantial amount of literature about cultural differences in the implications of gender. Hofstede and Associates' (1998) analyses of culture and gender suggest continuing national variability in the implications of gender. Hofstede's masculinity/femininity cultural dimension suggests longstanding variations in gender definitions in different parts of the world. A significant element in this dimension is that societies vary in the degree of role differentiation between men and women. One might expect more deference to authority in general in societies where gender roles are differentiated based on the greater authority of men. If so, then reliance on vertical sources would be stronger in masculine than in feminine nations.

Posing a hypothesis about differences in the relationship between gender and reliance on vertical sources could follow a similar logic. In culturally feminine societies where gender-based role differentiation is limited, men and women are likely to show similar degrees of deference to authorities. In masculine societies where men are expected to be more independent and women to be more dependent, vertical sources would be expected to be used more by female than by male managers. However, the argument advanced in relation to Hypothesis 1b would also apply here: in nations high on collectivism and power distance, reliance on vertical

sources should vary less between male and female managers, because all are obliged to respect hierarchy. In nations low on collectivism and power distance, reliance on vertical sources could vary more strongly. This prediction is consistent with the findings of Costa et al. (2001) that gender differences in personality are greater in western nations.

> *Hypothesis 2b*: The negative association between male gender and reliance on vertical sources of guidance will be stronger in nations high in masculinity and in collectivism and power distance than elsewhere.

Organizational Attributes as Demographics

It is beyond the scope of this review to examine all organizational attributes thought to affect use of vertical sources. We have selected instead three that we expect to be most readily observable and to have the most substantial implications. At the organization level, we consider size and organization ownership, which are somewhat associated, since state-owned enterprises are rarely small. Within organizations, we consider department function, a characteristic that is closely linked to occupation.

Ownership   There is some evidence that state organizations rely more heavily on bureaucratic controls than do privately owned organizations. For example, Eze (1988) studied the effect of ownership on decision making by 165 Nigerian managers working in foreign-owned companies, indigenous enterprises and the public sector. Using a locally developed questionnaire, he found that participation in decision making by Nigerians increased from the public through the indigenous to the foreign-owned sector, showing that ownership, belongingness and commitment are higher in the private sector than in the public sector.

There has been a global trend through the past two decades toward replacing government ownership with private owner-

ship. The logic is that private ownership will improve response to market conditions by reducing excessive use of vertical sources. A similar logic has been used to explain differences between greater decentralization and market responsiveness in small companies as compared to companies of the same size that are divisions of larger corporations. The general principle seems to be that reliance on vertical sources will be stronger the more an organization is controlled by government. In the present project, we asked whether or not respondents' organizations were government controlled as distinct from being part of multinational corporations or independent organizations. The general hypothesis, then, is as follows.

> *Hypothesis 3a*: State ownership will be positively associated with reliance on vertical sources of guidance in all nations.

A frequent complaint about institutionalizing privatization, either at the direction of organizations like the International Monetary Fund (IMF) or by more voluntarily imitating other nations that have promoted privatization, is that the effects of government ownership depend on the culture and history of a particular society. For instance, societies high in uncertainty avoidance are likely to show a preference for detailed governmental procedures that are part of government ownership. Diplomats (Harrison, 1985) and management scholars (Newman, 2000) have suggested that an entire social infrastructure needs to accompany privatization if it is to be accepted. Some critics are less than sanguine about whether nations that do not have the cultural predisposition for developing this infrastructure are likely to succeed in producing it. Consistent with earlier hypotheses, we also expect the effect of state ownership to be stronger in locations where collectivism and power distance are low:

> *Hypothesis 3b*: The positive association between state ownership and reliance on vertical sources of guidance will be stronger in nations

that are low on cultural collectivism and power distance and high on uncertainty avoidance than elsewhere.

Individuals who work in different occupations have sometimes been demonstrated to show different values as a consequence of both self-selection and socialization. Tests used for career planning (e.g. Strong Vocational Interest Blank) reflect this link of occupation and values. The Meaning of Working (MOW, 1987) study of eight occupations in eight nations also documents value differences between occupations that appear to transcend nation. One approach to identifying department type or occupation effects is to draw from Mintzberg's (1979) characterization of department types. In particular, line positions from top managers to supervisors are likely to show relatively high reliance on people in authority. Technostructure staff positions including accounting, industrial engineering, and other departments that exert control by formulating rules, are likely to show high reliance on rules. Support staff departments such as research and development, marketing research and finance are likely to show high self-reliance. Some departments, such as human resources, engage in both support functions (e.g. advising employees) and technostructure functions (e.g. establishing and enforcing employment rules). In the present study, we distinguish between respondents who indicate that they are in line departments, respondents who are in support staff departments, and respondents who are in other types of departments.

Hypothesis 4a: Membership of line departments will be more positively associated with reliance on vertical sources in all nations than will membership of support staff departments.

The theory and evidence about occupational effects are largely generic and are reflected in Hypothesis 4a. Nevertheless, recognized country differences in the status of various occupations do suggest cultural variability. For example, the distinctive sig-

nificance of the *honour* of various occupations in France is well recognized (d'Iribarne, 1994). In contrast, the distinctly lower status of some occupations compared to others is reflected in the Indian caste system. Heller and Wilpert (1981) surveyed leaders' decision-making styles in six European nations, Israel and the USA. Substantial variations in degree of subordinate participation were found, dependent on variance between both nations and industry sectors. However, no significant differences were found between those working in different departments. This was possibly because the only test made was between 'people-oriented' departments and 'process-oriented' departments, or because of the restricted number of nations included. Following the earlier reasoning, we predict stronger effects in nations that are low on collectivism and power distance.

Hypothesis 4b: The positive association of line departments with reliance on vertical sources of guidance will be stronger in nations low on cultural collectivism and power distance than elsewhere.

General managers are typically responsible for both staff and line departments. They are necessarily also more senior, and therefore likely to rely less on vertical sources of guidance, thus:

Hypothesis 5a: Being a senior manager will be negatively associated with reliance on vertical sources in all nations.

Since we predict that senior managers will be less reliant on vertical sources, there is less likelihood that the relationship will vary betweens nations. However, we test a final hypothesis that parallels the earlier ones:

Hypothesis 5b: The negative association between being a senior manager and reliance on vertical sources of guidance will be stronger in nations low on cultural collectivism and power distance.

Method

The questionnaire measuring managers' reliance on different sources of guidance focuses on eight work events that were selected as likely to occur from time to time within the work of almost any manager in almost any type of organization. The events were described to respondents in the following way:

- Appointing a new subordinate in your department.
- When one of your subordinates is doing consistently good work.
- When one of your subordinates is doing consistently poor work.
- When some of the machinery or equipment in your department seems to need replacement.
- When another department does not provide the resources or support that you require.
- When there are differing opinions within your department.
- When you see the need to introduce new work procedures into your department.
- When the time comes to evaluate the success of new work procedures.

Respondents were asked to indicate on five-point rating scales for each of these events, how much they relied on each of eight sources of guidance. These were: one's own experience and training, superiors, others at the same level as oneself, subordinates, specialists, formal rules and procedures, informal rules about 'how things are usually done around here', and 'beliefs which are widespread in my country as to what is right'. Data for a given event from respondents who indicated that they had not experienced that event recently were discarded.

There were further questions concerning respondents' demographic circumstances. These included age, gender, country of birth, country of present employment, nationality, years of education, years with the present organization, years in the present job, organization size, overall organization task, departmental task, organization ownership, religion and ethnicity. Some demographics, like country of birth, were eliminated because they overlapped too heavily with the separate code for nation in which the data were collected. Others, like religion and ethnicity, were eliminated because they overlapped closely with cultural region. For instance, respondents from the same organization did not always agree as to its size or its overall task, with some referring to their local operation and others referring to the overall company. Reports of years of education and of ethnicity also proved non-comparable. The demographic variables selected for analysis were age, gender, organization ownership and departmental task.

Respondents were middle-level managers, working in a wide variety of organizations. Details of questionnaire construction, translation and data collection from 53 individual nations are given by Smith et al. (2002). The present analysis includes data from seven further nations. These had mostly been excluded from the earlier study because individual samples were too small.

Each manager's handling of the eight events was treated as an independent sampling of preferred ways of handling events. A mean score was therefore computed across all eight events for each source of guidance. Cronbach alpha scores showed high consistency across events in all countries within the overall sample (Smith et al., 2002). Scores derived from Likert-type rating scales are vulnerable to the possibility of individual and cultural differences in questionnaire response bias (van de Vijver and Leung, 1997). An estimate of response bias was therefore computed for each individual by averaging the reported reliance on all sources of guidance across all events. Adjusted scores for reliance on each of the guidance sources were then computed by subtracting the respondent's overall mean. Scores for reliance on vertical sources of

guidance were computed as the mean of (1) reliance on formal rules and procedures and (2) reliance on one's superior, minus (3) reliance on one's subordinates and (4) reliance on one's own experience and training. This index provided the dependent measure used to test the hypotheses.

With the exception of age, demographical variables were coded as dummy variables. In order to test the hypotheses relating to national culture, Hofstede's (2001) nation scores for collectivism, power distance, masculinity–femininity and uncertainty avoidance were assigned to individual respondents within the present sample. Hofstede scores for East Africa were assigned to Uganda, Kenya, Tanzania and Zimbabwe. Hofstede scores for West Africa were assigned to Nigeria. Hofstede scores for Russia were also assigned to Ukraine and Belarus. Hofstede scores for Hong Kong were also assigned to Macao. Hofstede scores for Jamaica were also assigned to Barbados. Hofstede scores for the four Nordic nations were averaged and assigned to Iceland. Interaction terms were computed using mean-centred variables.

Results

Descriptive statistics for each nation are given in Table 1. While the national samples vary substantially in size and in some aspects of demographic composition, the overall sample does contain an adequate range of demographic variability that makes it possible to test for the hypothesized effects.

In order to test for variations in the relation of demographic variables to reliance on vertical sources of guidance, it is necessary first to test for main effects of Hofstede scores and of demographic variables. This was done using hierarchical regression, entering the Hofstede scores at the first step, and age plus dummy variables for gender, organization ownership and departmental task at the second step. Table 2 shows the results. Hofstede scores account for 9 percent of vari-

ance. Reliance on vertical sources is highest in nations that are high in collectivism, power distance and masculinity and low on uncertainty avoidance, as would be expected from the analyses reported by Smith et al. (2002). Demographic variables account for a further 3 percent of variance. Hypotheses 1a, 2a, 3a and 5a are all supported, in that reliance on vertical sources is significantly stronger among younger respondents, among women and among those working in state-owned organizations, and weaker among general managers. However reliance on vertical sources is higher among those working in both staff and line departments, which gives no support to Hypothesis 4a.

The 'b' hypotheses were next tested through additional regression analyses. Table 3 summarizes the results of six further regressions. In each case, Hofstede scores were again entered at the first step and demographics at the second step. As a third step, interaction terms between one specific demographic indicator and Hofstede scores were entered. The table shows only the results for this third step, since the outcome for steps 1 and 2 is already shown in Table 2. Significant additional variance in predicting reliance on vertical sources of guidance is found in all six of the analyses, but additional variance explained is small.

The left-hand column in the table indicates that while reliance on vertical sources is negatively related to age (as shown in Table 2), there is a significantly positive effect of the interaction of age and collectivism. In other words, the relation between age and reliance on vertical sources is less negative in more collectivist nations. Hypothesis 1b is therefore supported. To better understand this effect, separate correlations were computed between age and reliance on vertical sources, dividing the data from respondents in nations scoring low and high on collectivism. The correlation in less collectivist nations is –0.21, but in more collectivist nations it is –0.12. Although the predicted

Table 1   Sample details

Nation	N	Mean age	% male	% state owned	% in staff departments	% in line departments	% in general management
Argentina	158	36.3	79	16	25	13	2
Australia	185	36.8	74	57	48	44	5
Austria	129	42.5	79	20	49	26	12
Barbados	37	42.1	49	40	22	60	13
Belarus	333	42.4	58	83	15	79	5
Brazil	113	38.8	56	42	36	46	0
Bulgaria	162	41.7	62	53	19	37	16
Canada	77	39.2	57	9	53	20	4
Chile	110	41.4	88	11	72	26	1
China	119	39.7	65	54	34	42	23
Colombia	96	39.1	70	38	27	32	16
Czech Republic	71	41.7	84	6	25	42	20
Denmark	109	46.3	85	28	14	27	6
Finland	118	43.6	91	19	52	13	27
France	256	41.3	74	30	40	41	4
Germany	173	43.5	93	7	43	26	18
Greece	102	43.4	74	34	46	38	14
Hong Kong	83	31.4	59	32	53	16	5
Hungary	100	41.7	72	50	36	21	28
Iceland	52	40.8	83	17	42	31	25
India	98	38.4	97	79	69	29	0
Indonesia	108	40.8	89	26	34	35	9
Iran	93	36.2	98	74	50	33	0
Ireland	19	35.3	72	37	26	37	16
Israel	150	41.9	71	63	57	29	14
Italy	130	46.5	98	39	27	33	13
Jamaica	88	33.5	42	62	52	35	10
Japan	95	45.9	98	55	24	62	10
Kenya	59	35.8	73	30	30	37	30
Korea (South)	296	36.8	99	100	57	16	14
Lebanon	133	37.1	62	23	37	19	20
Macao	64	33.9	54	33	14	16	5
Malaysia	40	35.5	77	40	60	12	17
Mexico	296	33.4	76	5	52	32	3
Netherlands	112	40.1	88	21	47	31	4
New Zealand	96	40.7	48	56	54	24	8
Nigeria	338	38.5	70	34	59	38	1
Norway	91	45.2	57	56	60	21	14
Oman	37	30.3	92	100	38	35	11
Pakistan	94	40.0	86	9	40	35	5
Philippines	36	33.1	54	42	44	11	6
Poland	104	45.9	63	53	30	51	0

Table 1 Cont.

Nation	N	Mean age	% male	% state owned	% in staff departments	% in line departments	% in general management
Portugal	213	42.7	72	39	24	51	1
Romania	82	44.3	67	71	30	52	0
Russia	12	41.7	54	58	17	25	58
Singapore	99	39.5	51	70	26	10	7
Slovakia	38	38.1	76	47	32	29	18
South Africa	250	35.6	78	22	63	17	9
Spain	43	36.9	59	46	21	42	0
Sri Lanka	94	39.9	79	26	31	43	14
Sweden	106	47.6	66	23	43	26	2
Taiwan	130	42.0	79	42	42	21	25
Tanzania	61	38.3	77	38	39	52	7
Thailand	152	40.4	68	28	45	21	5
Turkey	63	34.3	71	0	36	38	8
Uganda	230	35.5	76	44	54	46	0
Ukraine	108	39.2	43	48	32	37	6
United Kingdom	141	39.1	77	23	47	29	13
United States	342	36.5	63	24	32	40	12
Zimbabwe	56	36.9	87	25	27	50	5
Total	7380	39.6	72	36	41	34	9

Note: Percentages in department types do not sum to 100 because some departments could not be assigned to staff or line.

Table 2 Regression testing cultural and demographic main effects for reliance on vertical sources

	R square	R square change	Sig of change	β
Step 1: Hofstede dimensions	.087		***	
Power distance				.11***
Collectivism				.19***
Uncertainty avoidance				−.08***
Masculinity				.08***
Step 2: demographics	.119	.032	***	
Age				−.12***
Gender				−.06***
State ownership				.05***
Support				.07***
Line				.08***
General management				−.04**

$F = 94.64$, $df = 10, 7034$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 3   Separate regressions testing interactions between each demographic indicator and each culture dimension

	Age	Gender	State-owned	Support	Line	General management
Final F	69.95***	72.43***	70.69***	75.47***	68.43***	68.97***
Step 3 R Square change	.004***	.007***	.005***	.012***	.001*	.002**
β for interaction terms						
Collectivism	.035*	.065***	−.001	−.031	.007	.019
Power distance	.021	.031*	−.052**	−.073***	−.037*	.026
Uncertainty avoidance	.020	−.033**	−.012	−.069***	−.008	.000
Masculinity	−.014	−.002	.039**	.000	.004	−.023*

$df = 14, 7030$; * $p < .05$; ** $p < .01$; *** $p < .001$

effect of power distance is not found, if the interaction of power distance with age is entered without entering the interaction with collectivism, an equally strongly significant effect is obtained (not shown).

In a similar way, Table 3 shows that the overall finding that reliance on vertical sources is stronger among women is significantly weaker in low collectivist and low power distance nations, but is strengthened in high uncertainty avoidance nations. Split sample correlations are: .00 (high collectivism) and −.14 (low collectivism); −.01 (high power distance) and −.16 (low power distance); however .08 (high uncertainty avoidance) does not differ from .07 (low uncertainty avoidance). The predicted effect of the masculinity dimension is not found. Hypothesis 2b is supported, except in relation to the masculinity dimension.

In relation to Hypothesis 3b, state ownership is related to reliance on vertical sources, but the effect is strengthened in low power distance nations (correlation .00 for high power distance, .09 for low power distance). In this case, a non-predicted effect is also found for masculinity, with a correlation of .09 for masculine nations and .00 for feminine nations.

Lower power distance also significantly enhanced reliance on vertical sources in both line and staff departments. However, the moderation effect explained 12 times as much variance in staff departments as in line departments. Split sample correlations for line were .08 (low power distance) and .01 (high power distance). For staff, they were .05 (low power distance) and .03 (high power distance). For staff departments, a non-predicted effect of low uncertainty avoidance was also obtained, with correlations of .05 (low uncertainty avoidance) and .02 (high uncertainty avoidance). Hypothesis 4b gains partial support.

The effects of collectivism and power distance predicted in Hypothesis 5b are not found. Instead, there is a significant effect of masculinity. Senior managers are less reliant on vertical sources in masculine nations (correlation −.12) than in feminine nations (−.07)

Discussion

The results indicate that reliance on vertical sources of guidance varies more on the basis of the cultural values that prevail in the nations in which respondents hold membership than on the basis of their demographic attributes. Those demographic effects that

are found tend to be consistent across all nations although significant interactions are also obtained. Table 2 shows that around three times as much variance in reliance on vertical sources is attributable to cultural values as to demographics. However, since respondents from different nations were not matched demographically, there is some degree of confounding between cultural values and demographics. A further regression (not shown) was run in which demographics were entered prior to national culture. Demographics then accounted for 5 percent of variance and cultural values for an additional 7 percent. Thus cultural values account for rather more variance than the demographics on which this project focused – in fact probably twice as much.

The main effects for demographics that were obtained are clearer than could have been expected on the basis of results of prior single nation studies. They suggest that vertical controls are more typically used by managers in some demographic groups throughout the world than by others. If so, then organizations are likely to find that more managers in some occupations and in some age and gender groups than in others will make more use of bureaucratic controls. These differences may occur, for example, because norms communicated through popular music and print media support cultures that are bounded almost as much by age group and gender as they are by nation. Other demographic differences, like the finding that younger managers rely more on vertical sources than do older managers, may occur for more functional reasons – younger managers have less experience to draw from than do older managers. Some occupational differences probably reflect global similarities in the activities carried out by people in different occupations. For example, general managers are typically selected because of their high level of experience and their ability to handle relatively ambiguous problems that cut across occupational specialties.

Greater reliance on vertical sources by managers in state-owned enterprises is consistent with the well recognized tendency of government agencies and enterprises to adopt bureaucratic procedures for reasons of government tradition, public scrutiny and external control by elected and appointed officials, and large organization size. Since we have no reliable data on the relative seniority of male and female respondents, it is not possible to determine whether the greater reliance on vertical sources by women respondents is in fact attributable to gender, or whether it is due to their holding more junior positions. The existence of 'glass ceiling' effects in many nations makes it likely that women respondents were on average less senior.

The significant interaction effects that were obtained require particular scrutiny. Variance explained by the effects was small, but in large and diverse samples, interactions explaining no more than 1 percent of variance can be judged reliable and useful (Cohen, 1992; Wall et al., 1996). In some instances, the significant interactions that were found are not matched by correlations for split samples. The likely explanation for this is that the split sample correlations are based on individual-level variables, whereas the interaction terms are based on Hofstede's culture-level variables. Variations within a nation's data might be due to differing organizational tasks, organizational cultures, individual leader styles and so forth, which will affect the correlations but not the culture-level interaction terms. The interaction terms are therefore conservative, in the sense that they neglect within-sample variation, and test only the extent to which Hofstede values provide a systematic basis for understanding why effects are stronger in some parts of the world than they are in other parts.

Implications for Research and Theory

Since we find that demographic effects do vary modestly in different parts of the world,

what implications might this hold for theories of organization? Relational demography theory suggests that team members work best together when they are demographically similar. Although teams with more diverse composition may hold promise of greater synergy, it is typically found that it takes greater time and effort for such teams to fulfil their potential (Earley and Mosakowski, 2000; Earley and Gibson, 2002). However, we do not know to what extent the findings of relational demography are contingent on the relatively individualistic values that prevail among the workforce of the nations that have mostly been sampled. In nations where more collectivist and hierarchical values prevail and achievement motivations are less individualistically oriented, there may be other bases on which people will work together well. For instance, role requirements or reciprocal obligations may lead rather dissimilar persons to work well together if they are linked by collective identity or by some form of relationship. Our findings that demographic effects are stronger in low power distance, low collectivist nations support such a view.

The field of cross cultural management continues to struggle with how to conceptualize nations. Nations have been treated as points on a small number of culture dimensions; as complex entities requiring multifaceted ethnographic analysis; as culturally irrelevant political artefacts; or as elements within larger clusters reflecting historical movements of colonization, immigration, and other forms of culture spread. Our focus on Hofstede values enables the project to link more directly to cross cultural theory, but has the weakness that demographic effects that are local to specific nations or regions not tapped by Hofstede dimensions will not be detected. In 10 of our 60 sampled nations we also used Hofstede scores from neighbouring nations or regions, which is likely to have weakened the effects that were detectable. Furthermore, the Hofstede scores themselves

may no longer provide the best basis for cross-national comparisons. We need updated and refined measures of cultural values that can be used to improve on the Hofstede tradition.

Implications for Organizational Control

The results showing differences in use of vertical sources suggest that controlling managers through use of traditional bureaucratic mechanisms, superiors and rules rather self and subordinates, is more typical of some nations than others. The regions that are most associated with vertical sources, however, are not those where bureaucracy was first introduced. In fact, some nations that use these sources the least are among those in which bureaucratic systems were first developed. This finding suggests that bureaucratic control practices may be a more important element in the earlier phases of industrialization than in later phases, and is generally consistent with Inglehart's (1997) analysis of the gradual post-materialist cultural evolution of Europe. Organizations operating in nations with comparatively little history of industrial development might find it easier to adopt vertical control practices reflecting the periods when other nations industrialized rather than more recent practices which assume that middle managers and their subordinates have high levels of professional education and skills.

The methodological point of departure for this analysis concerned the search for valid ways of dealing with demographic characteristics when undertaking cross-national surveys of organizational behaviour. The results indicate that global institutionalization of subcultures linked to demographic identity is consequential, although weaker than institutionalization based on nation. From the standpoint of analysing data about managers, if we match samples from two or more nations on demographic attributes, such as age or occupational role, our match-

ing is likely to be helpful but may not be very precise, because the meaning of a given age or a given occupational role may well differ between nations. Such differences can arise for a multitude of interwoven reasons, including social history, economic development, climate, affluence, social conflict, and so on. This suggests that attempts to enhance comparability by matching samples on demographic criteria achieve only partial success. The ways in which at least some, such as age and organization ownership, contribute to effects in different locations require examination rather than simple partialling out.

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Résumé

L'effet des variables démographiques sur le recours aux sources hiérarchiques pour orienter le comportement managérial dans une grande variété de contextes culturels (Peter B. Smith and Mark F. Peterson)

Des données tirées d'un échantillon de 7380 cadres moyens travaillant dans 60 pays ont été utilisées pour déterminer si les variables démographiques sont corrélées avec l'usage que les managers de différents pays font de sources d'informations hiérarchiques (« verticales ») pour guider leur comportement managérial, et si ces corrélations diffèrent en fonction de caractéristiques de cultures nationales. Des effets significatifs ont été identifiés en fonction des scores de culture nationale de Hofstede, en fonction de l'âge, du genre, du type de propriété organisationnelle et des département fonctionnels de l'entreprise. Des effet d'interactions ont été observés, significatifs quoique faible, indiquant que l'impact des variables démographiques est plus fort dans les cultures individualistes et à faible distance hiérarchique. Des effets d'interaction non prévus se sont également révélés pour le contrôle de l'incertitude et la masculinité-féminité. Les implications théoriques et pratiques de l'utilisation des attributs démographiques pour comprendre des procédures de management effectives de par le monde sont finalement discutées.

摘要

廣泛不同文化背景下，人口統計因素對管理人員縱向資源導向的影響。

Peter B. Smith and Mark F. Peterson

通過對 60 個國家 7,380 名中層管理人員的調查，研究針對人口統計因素是否同管理人員的資源導向的影響有關，以及這些關聯是否由於文化的特點而有所不同這些課題進行的調查。結果表明，Hofsted's 國家文化積分，在年齡，性別，企業性質以及部門功能等方面影響顯著。特別是在權力差別較小的國家中，人口統計變量因素對個人影響很強。安全感同男權女權的交織非預測影響也比較顯著。文章對人口統計變數理論及其因素在理解在世界各地有效管理步驟的實際應用也進行了討論。