

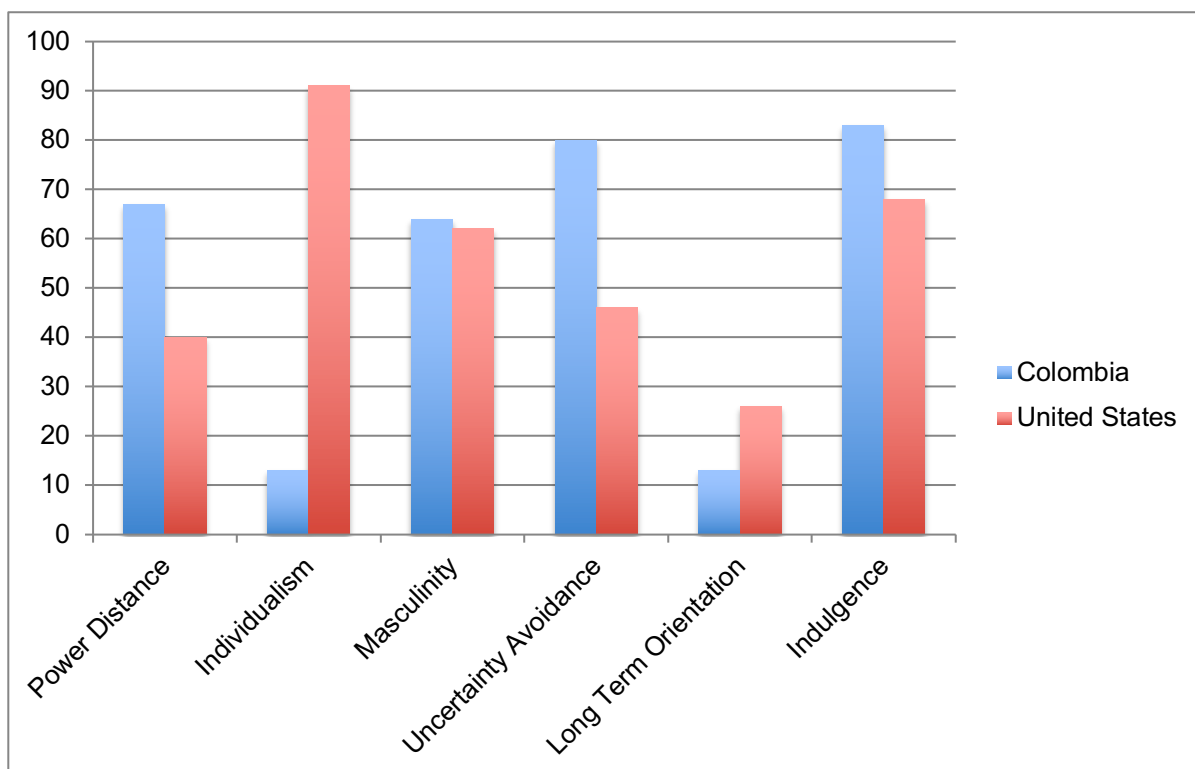


Hofstede's Cultural Dimensions

Social psychologist Geert Hofstede investigated differences in national culture in a research programme that started in the 1960s. He applied factor analysis to data aggregated from surveys of 88,000 workers in more than 70 countries. Four cultural dimensions were identified and numerical values were calculated for the countries on each dimension (Hofstede, 1983). The four dimensions were: **power distance**, **individualism/collectivism**, **masculinity/femininity**, and **uncertainty avoidance**. Two more dimensions were identified later: **long-term/short-term orientation**, and **indulgence/restraint** (Hofstede et al., 2010).

Hofstede's research mainly concentrated on differences in **national culture**, although there was a study of **organizational culture** in Denmark and the Netherlands (Hofstede et al., 1990). As an example, Figure 1 shows Hofstede's scores in all six dimensions for two countries: Colombia and the United States.

Figure 1: Cultural dimension scores for Colombia and the US (Hofstede, 2001).



Hofstede's cultural framework has been very influential in many fields. Nakata (2009) listed four reasons for its success:

- the statistical analysis of a huge amount of survey data from a wide range of countries provided unprecedented insights into national culture;
- the cultural dimensions allow all national cultures to be described, not just some, which makes the framework suitable for a variety of research purposes;



- the framework has theoretical grounding in the work of anthropologists Florence Kluckhohn and Fred Strodbeck as well as sociologist Talcott Parsons;
- the survey instruments generate standardized cultural scores, making them ideal for quantitative research in a way not possible for some other cultural frameworks.

Within aviation, Hofstede's tools and methodology were championed by the human factors team at the University of Texas and incorporated into airline crew resource management (CRM) training. The following sections discuss three of Hofstede's dimensions that are especially relevant to commercial flight operations: power distance, individualism-collectivism, and uncertainty avoidance.

Power Distance

The dimension of power distance reflects the degree to which people in a society accept unequal power relationships. Subordinates in high power-distance cultures tend to accept autocratic power relations. By contrast, subordinates in low power-distance cultures tend to be more comfortable challenging the decision-making of those in power. Adler and Gundersen (2008, p. 55) suggested that employees in a low power-distance country may be afforded leeway "to bypass their bosses frequently in order to get their work done", but such behaviour is considered insubordination in a high power-distance country. Gudykunst et al. (1988, p. 47) commented that in a high power-distance society "superiors consider their subordinates to be different from themselves and vice versa". As shown in Figure 1, Colombia (with a score of 67) has a higher power distance than the United States (40).

Individualism-Collectivism

The individualism-collectivism dimension is a measure of the degree to which people in a society act as individuals rather than as members of cohesive groups. Adler and Gundersen (2008, p. 51) suggested that individualism is characterized by people who "focus primarily on taking care of themselves and their immediate families". Collectivism, by contrast, features "tight social networks" in which people "expect members of their particular in-groups to look after them, protect them, and give them security in exchange for their loyalty to the group". Hofstede's data showed a striking difference between the scores of the United States (91), ranked as one of the most individualistic countries in the world, and Colombia (13), one of the most collectivistic.

Gudykunst et al. (1988, p. 44) posited that Hofstede's individualism-collectivism dimension is isomorphic with Hall's concepts of **low-context/high-context**. They inferred that "low- and high-context communication are the predominant forms of communication in individualistic and collectivistic cultures, respectively".

Uncertainty Avoidance

Uncertainty avoidance denotes the extent to which the members of a society feel threatened by uncertainty or ambiguity. In countries with a high uncertainty-avoidance score, people are less tolerant of uncertainty and ambiguity, and there is a corresponding need for formal rules as well as a rejection of deviant ideas and behaviour (Adler & Gundersen, 2008;



Gudykunst et al., 1988). According to Hofstede, Colombia (80) has a significantly higher score for uncertainty-avoidance than the United States (46).

Hofstede's Country Clusters

Hofstede did some preliminary work on plotting the positions of countries on graphs combining pairs of dimensions. For example, when power distance was plotted against individualism-collectivism, Hofstede (1983) derived five country clusters and one outlier. In this analysis, Colombia was in a large group of countries (including Peru, Salvador, Singapore and Indonesia) characterized by high power distance and low individualism. The United States, by contrast, was grouped with countries featuring low power distance and high individualism (eg: Great Britain and Australia). This basic analysis of country clusters was later developed by other researchers such as Ronen and Shenkar, and in the Global Leadership and Organizational Behavior Effectiveness (GLOBE) research project (Hodgetts et al., 2005).

Criticism of Hofstede's Model

The limitations of Hofstede's research have been widely documented outside of aviation. McSweeney (2002) challenged several of the underlying assumptions, such as using limited sets of survey respondents to represent national populations, and identifying cultural dimensions through the analysis of questionnaire responses. Analysing the political subtext of Hofstede's methodology, Ailon (2008) cautioned against an uncritical application of the dimensions to other cultures. Writing from a postcolonialist perspective, Fougere and Moulettes (2007, p. 2) argued that the discursive world constructed by Hofstede is "characterized by a division between a 'developed and modern' side (mostly 'Anglo-Germanic' countries) and a 'traditional and backward' side (the rest)".

In a study of multicultural work teams, Aritz and Walker (2010) raised further questions about Hofstede's approach: whether his data may be reliably applied to countries not covered by the initial surveys (such as China); whether the data are applicable to other workforces or national populations, given that the participants were sales managers and engineers; and what insights the dimensions offer into everyday intercultural interactions, such as team decision-making.

Guirdham (2005) reported two main criticisms of Hofstede's framework: (1) it is static, and (2) it omits important values. She cited a comment by Tayeb as typical: "A country's culture is too vibrant and complex an entity to be simplified and described only in terms of these dimensions" (Guirdham, 2005, p. 59). Similarly, Nakata (2009) and Brannen (2009) pointed out that static representations of culture, such as Hofstede's value-based model, are not appropriate for describing a globalized world that is characterized by "the increasingly fluid nature of culture" (Nakata, 2009, p. 4).

Within aviation, Hofstede's model was criticized by Hutchins et al. (2002) on numerous counts, which included: the absence of data regarding intra-country variability in the dimensions; the methodology used to determine the probes; the problem of translation effects in cross-cultural surveys; and the fundamental issue of how survey responses relate to cockpit operations.



Hofstede (1983, p. 78) responded to the charge that his studies did not capture variation within national populations:

The national culture found is a kind of average pattern of beliefs and values, around which individuals in the country vary... In describing national cultures we refer to common elements within each nation, but we should not generalize to every individual within that nation.¹

This note of caution has seemingly been overlooked by many aviation researchers, but it should be borne in mind when applying the results of Hofstede's large-scale data collection to airline interactions involving dyads, triads or small groups.

Hofstede responded to other criticism with further surveys that included East Asian participants, and with investigations of organizational culture and cultural differences within a single country. Two new cultural dimensions were identified, but the underlying methodology remained unchanged (Hofstede et al., 2010).

Applications to Aviation

Hofstede's work had a strong impact on aviation and was described as the third leg of the "three-legged stool upon which broad, systematic-oriented aviation safety and efficiency endeavors rest" (Helmreich & Merritt, 1998, p. xvii).² In an influential series of studies using materials and methodology adapted from Hofstede, a team led by Robert Helmreich at the University of Texas conducted attitude surveys of airline crew in over 20 countries.

Helmreich (1994) also used Hofstede's cultural dimensions to analyse the actions of the Colombian flight crew in the 1990 crash of Avianca Flight 052 at Cove Neck, New York. As shown in Figure 1, Colombia has a high power distance score. Helmreich posited that this made the first officer and flight engineer reluctant to suggest alternative courses of action to the captain. Furthermore, since Colombia is strongly collectivist, he suggested the Avianca crew were reluctant to declare an emergency and push ahead of other crews they perceived to also be in difficulty. Finally, Colombia scores highly in uncertainty avoidance and so Helmreich reasoned that the crew preferred to continue with the initial flight plan, rather than face the ambiguity of discussing possible alternate airports to which they could divert.

Hofstede's framework has been applied to numerous areas of aviation research, in testament to the appeal of its quantitative approach. Examples include: a comparison of accident rates in NATO air forces (Soeters & Boer, 2000); post-accident responses by Japanese and American airlines (Haruta & Hallahan, 2003); and cultural differences in risk mitigation in air traffic control (ATC) operations (Surakitbanharn & Landry, 2017).

Finally, Hofstede's framework has been used to raise pilot awareness about cultural issues. Dahlstrom and Heemstra (2009) reported on the use of Hofstede's dimensions during facilitated discussions for recently joined pilots at a large multi-cultural airline. This application, if not all of the previous ones, is in line with the advice of Johnston (1993, p. 380), who said:

¹ See also Hofstede (1994, p. 12): "All statements [about national culture] in this article should be seen as only 'statistically' true: they are common trends, but individuals may differ from them. Within each country there is a wide range of individuals, and this fact too should be taken into account in order to manage successfully."

² The other legs of the stool were the SHELL model and Reason's accident causation model.



“It would certainly appear reasonable to use Hofstede’s data as a point of departure, though a healthy regard as to its possible limitations would be prudent.”

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