

CULTURE AND IS: NATIONAL CULTURAL DIMENSIONS WITHIN IS DISCIPLINE

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Abstract

The study of culture is rooted in sociology, social psychology, and anthropology. In particular, cultural anthropology seeks to understand the similarities and differences among groups of people in the contemporary world. Within the last 20 years, the practical relevance of researching cultural issues, and especially comparing phenomena across cultures, was questioned (Ferraro, 1990). However, the importance of cultural issues is becoming increasingly evident in many applied disciplines; these include the management of information technology (IT) (Davison and Martinsons, 2003). A normative literature review has been carried out in this paper to provide IS researchers with the milestones of studying culture in IS discipline.

Keywords: *Culture, IS, Cultural Characteristics, Cultural Levels, Cultural Layers, Cultural Dimensions, Cultural Milestones*

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1 INTRODUCTION

Over the past decade there has been increasing interest in the IS research literature in the impact of cultural differences on the development and use of information and communications technologies. Since many companies are now doing business beyond their national boundaries – and these global activities are facilitated and supported to a large extent by current communications and information technologies – it is important to understand the impact of cultural differences on these activities (Ives & Jarvenpaa, 1991; Shore & Venkatachalam, 1994; Tractinsky & Jarvenpaa, 1995, Myers and Tan, 2002).

In the following section of this paper, the key concepts of culture will be discussed. These include definitions of culture, culture characteristics, culture levels, and culture layers. That is followed by a taxonomy of different national cultural dimensions that has been developed through a normative literature review of IS and culture research area.

1.1 Culture Definition

A first challenge in conducting research involving culture is arriving at an understanding of what culture is, given the myriad of definitions, conceptualizations, and dimensions used to describe this concept (Straub et al. 2002).

Leung et al. (2005) define culture as values, beliefs, norms, and behavioural patterns of a group – people in a society for national culture, staff of an organization for organizational culture, specific profession for professional culture, etc. Hall, (1976) has asserted that beliefs and values dictate the way people think, behave, solve problems, make decisions, plan and lay out their homes and cities, and even organize their economic, political, and transportation systems.

Definitions of culture vary from the very inclusive as Herskovitz (1955) defines it as the human-made part of the environment; to the highly focused as Shweder and LeVine, (1984, p.110) who define it as ‘culture is a shared meaning system’.

Groeschl and Doherty (2000, p.14) point out that culture is complex and very difficult to define: “Culture consists of several elements of which some are implicit and others are explicit. Most often these elements are explained by terms such as behaviour, values, norms, and basic assumptions”. Some researchers proposed culture as tacit or

implicit artefacts such as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will (Jermier et al., 1991; Sackmann, 1992; Groeschl and Doherty, 2000), others suggest that culture includes more explicit observable cultural artefacts such as norms and practices (Jermier et al., 1991; Groeschl and Doherty, 2000; Hofstede 1998), symbols (Burchell et al. 1980), as well as language, ideology, rituals, myths, and ceremony (Pettigrew 1979; Karahanna et al., 2005).

The socio-cultural system and the individual system are two theoretical frameworks likely to be studied when researchers investigate cultural aspects. The former is concerned with the institutions, norms, roles, and values as they exist outside the individual, and the latter is concerned with the subjective culture as reflected by the individual's perception of the elements of the culture system (Dorfman and Howell, 1988).

For example, Mead, (1985) defined culture as “shared patterns of behaviour.” This definition has at least two implications. It implied that culture was a group-level construct, situated between the personality of individuals and the human nature that is common to all of us. Societies, organizations, and professions are among the “groups” that could be considered to have their own cultures. Also, it implied that the study of culture involved little more than observing and describing behaviour (Davison and Martinsons, 2003). Also, Hofstede, (1991, p.5) defines national culture as “the collective programming of the mind which distinguishes the members of one group or category of people from another”. He suggests that people share a collective national character that represents their cultural mental programming. This mental programming shapes values, beliefs, assumptions, expectations, perceptions and behaviour (Myers and Tan, 2002). According to Hofstede, (1980) culture is equivalent to the collective mental programming of a group, tribe, minority, or a nation. It is the aggregate of individual personality traits.

However, Triandis (1972) defines culture as an individual's characteristic way of perceiving the man-made part of one's environment. It involves the perception of rules, norms, roles, and values, which is influenced by various levels of culture such as language, gender, race, religion, place of residence, and occupation, and it influences interpersonal behaviour. This definition has at least two implications. The first is that it assumes that by analysing the behaviour of an individual of a society

would not provide a specific identification of the rules, roles, norms and values of that society but rather shows the perception of that individual of the shared cultures he/she belongs to. The second is that behaviour of an individual would be influenced by the shared culture which is influenced by different levels of cultures.

Another theme within the IS/IT discipline is to give an operational perspective to the culture concept, to link it with the potential influence on IS/IT phenomena. Stahl (2003) defines culture as a determinant of usability of computers. That means that the culture from which a developer, programmer, or user stems makes a difference regarding whether he/she is willing or able to use a certain technology.

Culture in the sense of a meaning-constituting horizon of the collective life-world determines the perception and use of IT. This may be for the organizational level where culture can influence whether employees are able and willing to use certain technologies. It may also be true on a social level where people shared perceptions have some bearing on the use of IT. A national culture that emphasizes sharing and the collective, for example, will likely lead to different uses of IT compared with one that emphasizes the individual and competition (Raboy 1997; Riis 1997).

1.2 Culture Characteristics

In the review of the many definitions of the concept of culture, researchers conclude that most authors agree on the following characteristics:

- Culture is not a characteristic of individuals, but of the collection of individuals who share common values, norms, practices, beliefs, ideas etc. these collections may include family, occupational, regional or national groups which are known as cultural levels (Olie, 1995; Myers and Tan, 2002);
- Culture is learned. People learn the culture of a group when they become a member (Olie, 1995);
- Culture has a historical dimension. A particular nation's culture develops over time and is partly the product of that nation's history, its demographic and economic development, its geography and its ecological environment (Olie, 1995; Myers and Tan, 2002; Walsham, 2002);
- Culture has different layers. That includes i.e. symbols, heroes, rituals, norms, practices and values (Hofstede, 1991; Olie, 1995; Karahanna et al., 2005).

The first three characteristics of culture are contradicting with the previous cultural model of Hofstede (1991). First, culture is not a characteristic of individual, and culture is learned, this contradicts with Hofstede's cultural model which assumes there is a typical cultural mental programming which differentiates one individual from one society to another society, and people born with this cultural mental programming (Hofstede, 1991). Secondly, Hofstede's cultural model has provided an index for the cultural dimensions for the different countries he has conducted within his research. Since his analysis, Hofstede has not updated his index which assumes that culture is a static rather than dynamic.

1.3 Cultural Levels

National culture (or cross-cultural) research and organizational culture research have emerged as largely separate research streams within IS/IT discipline. While the two streams have experienced little overlap, they both share a focus on defining the values that distinguish one group from another (Leidner and Kayworth, 2006).

Culture has been studied within IS discipline at various levels, including national (macro level, cross-cultural), organizational, group (sub-culture, professional, special interest, social class, etc.) and individual (micro level, subjective culture) (Triandis, 1972; Hofstede, 1984; Dorfman and Howell, 1988; Myers and Tan, 2002; McCoy, 2003; Ali and Alshawi, 2004a).

Culture at a social or national level is the culture shared between people in a society or a country (Hofstede, 1984). On the other hand, culture that is shared between people working in an organization is called organizational culture (Stahl, 2003). Also, culture that is shared between people with a similar profession or occupation is called professional or occupational culture or sub-culture of a specific interest group i.e., political party or a social class (Myers and Tan, 2002). However, individual culture is referred to as the subjective culture of an individual which is related to how much an individual takes from the different cultures that the individual is part of (Dorfman and Howell, 1988; Karahanna et al., 2005).

1.4 National (Cross-Cultural) Level

At a macro level of analysis, national culture is defined as the culture that a society shares, which is a set of core values, norms, practices etc., which shapes the behaviour of individuals as well as the whole society (Adler 1997; Bagchi et al., 2003).

Stahl, (2003) defines culture at the macro level as the pure substance of the physical resources and perceptions, of the physical and mental techniques, which allow a society to persist. Culture thus consists of fact, artefacts institutions, etc. but its most important function is that of a reservoir of shared interpretations and collective experiences (Robey & Azevedo 1994).

A few empirical studies have investigated the relationship between national culture and IT adoption, Straub (1994). Straub et al., (1997) have found that the technology adoption model (TAM) could not predict technology use across all cultures.

Although the national culture construct is inherently complex, it is possible to label many different taxonomies or dimensions of it. A large body of literature on culture has identified and considered these dimensions. Following a review of some of the major concepts, a novel taxonomy of different cited national cultural dimensions is proposed in section 5.

1.5 Organizational Level

Organizational culture could be defined as the culture that staff of an organization share and are influenced by (Adler 1997; Bagchi et al., 2003). Stahl, (2003) defined corporate culture as commonly shared values, which direct the actions of the employees towards the common purpose of the enterprise. Corporate or organizational culture fulfils the same role in an organization that culture fulfils in society. It defines what is real, what is important, and thus how one should act. This has led to an extensive use of the term as a vehicle of business ethics (Heeg and Meyer-Dohm 1994, Grabner-Krauter 2001).

The literature on organizational culture implies that staff of an organization may be more or less socialized into the organizational culture and possibly away from the national culture (Killmann et al., 1986; Sathe, 1983; Dorfman and Howell, 1988).

As with national culture taxonomies, the aim of organizational culture has been to enable the differentiation of organizations along the lines of dominant values guiding organizational behaviours (Leidner and Kayworth, 2006). But, it is beyond the scope of this work to identify an exhaustive list of organizational culture theories.

1.6 Group (Sub-Culture) Level

Furthermore, since within one nation or within one organization there can be many subcultures (e.g., professional associations, political parties, ethnic groups), individuals' work behaviour may also be influenced by the norms and values of these subcultures (Triandis, 1972).

1.7 Individual Level (Subjective Culture)

Dorfman and Howell (1988) explored the level of analysis of culture in their investigation into the effects of national culture on individual behaviour, e.g. Technology acceptance. They found that subjective culture of an individual (Karahanna et al., 2005) (which is a mix of different cultures levels that the individual is part of) may influence the individual behaviour, even in the opposite direction of the society culture.

1.8 Interaction of Cultural Levels

It is theorized that the relative influence of the different levels of culture on individual behaviour varies depending on the nature of the behaviour under investigation. Thus, for behaviours that include a strong social component or include terminal and moral values, national cultures might have a predominant effect. For behaviours with a strong task component or for those involving competence values or practices, organizational and professional cultures may dominate (Karahanna, et al, 2005).

In an organizational setting, national culture is not the only type of culture that influences managerial and work behaviour. Rather, behaviour is influenced by different levels of culture ranging from the national level, through organizational levels to the group and other sub-cultures level (Hofstede, 1991; Karahanna, et al, 2005).

Straub et al., (2002) based on Social Identity Theory has proposed that these levels interact. They propose that different layers of culture can influence an individual's behaviour and that each individual is influenced more by certain layers and less by other layers, depending on the situation and their own personal values.

The various levels of culture are laterally related (see Figure 2.1). The levels of culture are not necessarily hierarchical from the more general (national) to the least general (group) (Karahanna, et al, 2005). For instance, in the case of multinational

corporations, organizational culture can span national, professional, and other sub-cultures. Furthermore, groups may include members from several organizations, professions, nations, religions, ethnic backgrounds.

In figure 1, the area labelled individual represents the subjective culture or the individual level of culture where an individual's culture is the product of several levels of culture. Each individual belongs to a specific national culture. Individuals may also have a religious orientation, a professional degree, belong to a specific ethnic, linguistic group, and so on, which is represented by different sub-culture groups. Individuals may work in an organization, which is represented by organizational culture. Some of these cultures may dominate depending on the situation. The cultures that enfold the individual interact and comprise the individual's unique culture, eventually influencing the individual's subsequent actions and behaviour (Karahanna, et al, 2005).

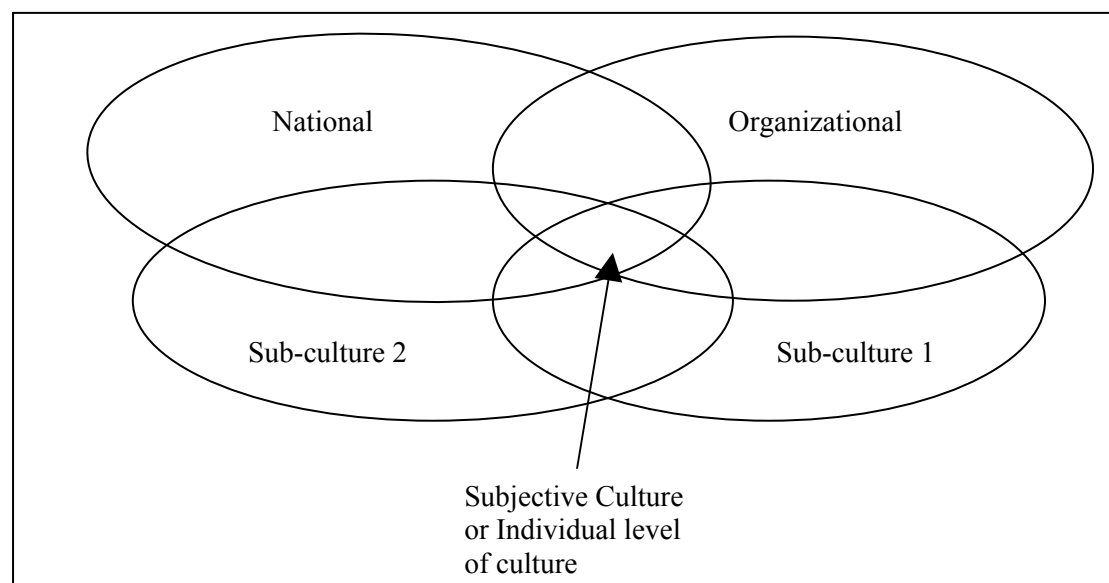


Figure 1: Interrelated levels of culture (Adapted from Karahanna et al., 2005)

1.9 Cultural Elements (Layers)

Values refer to relationships among abstract categories that are characterized by strong affective components and imply a preference for a certain type of action (Karahanna, et al, 2005). Values are acquired through lifestyle altering experience, such as childhood and education. They provide a society with fundamental assumptions about how things are. Once a value is learned, it becomes integrated into an organized system of values where each value has a relative priority. This value

system is relatively stable in nature but can change over time reflecting changes in culture (e.g., migration) as well as personal experience. However, values also change quickly through extreme circumstances e.g. war.

Practices are learned later through socialization at the workplace after an individual's values are firmly in place. They provide a society with learned ways of doing things, such as facts about the world, how it works, and cause-effect relationships. Whereas values are fairly hard to change, practices can be altered (Karahanna, et al, 2005).

A key issue that emerges is the relationship between values and practices. Values are affected by practices during the formative years in which values are starting to form. Later on in life, practices do not influence values. Conversely, practices are always evolving. Ideally, practices should reflect values and be in sync with them, but that is not always the case. Karahanna, et al. (2005) suggest that this discontinuity typically occurs when practices dictated by one level of culture (e.g., organizational) are at odds with values comprising another level of culture (e.g., national). Practices are much more related to current environmental conditions.

National cultural differences are composed primarily of differences in values and to a lesser extent, of differences in practices (Hofstede, 1991). Figure 2 (adapted from Karahanna et al., 2005) illustrates the relative importance of values and practices at various levels of culture. Values are more important than practices in the higher level cultures (i.e., national), and practices and norms dominate the lower level of cultures (i.e., group).

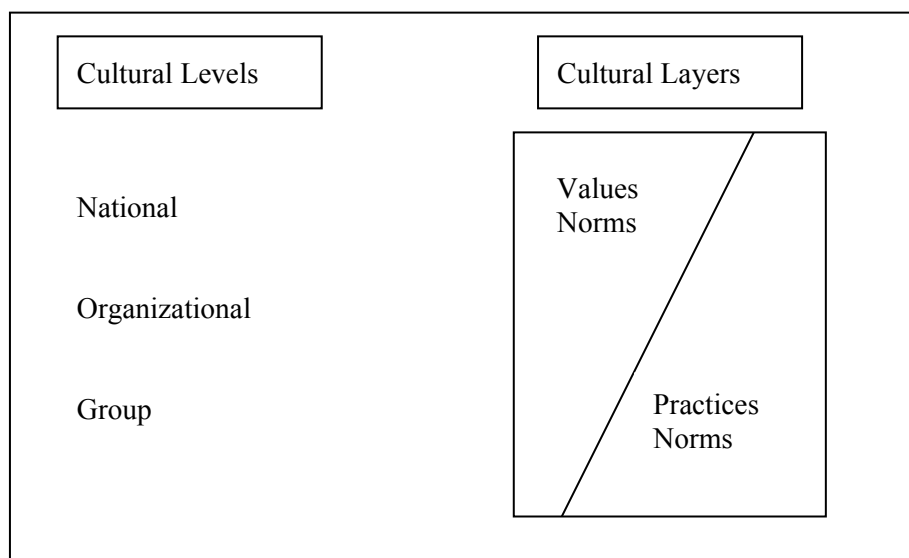


Figure 2: Cultural Levels and Cultural Layers (Adapted Karahanna et al., 2005)

1.10 National Cultural Values Dimensions

Schein (1985) argues that values are more easily studied than basic assumptions, which are invisible and preconscious and therefore not easily identified, as well as cultural artefacts (technology, art, visible and audible behaviours) that, while being more visible, are not easily decipherable.

It is not surprising, then, that the vast majority of theories that conceptualize culture do so in terms of reference group value orientations such as value dimensions of national culture (Hofstede, 1980).

Even while the focus has largely been on values, there is a tight linkage between cultural values and the subsequent behaviours and actions of social groups (Posner and Munson 1979). In this sense, values can be seen as a set of social norms that define the rules or context for social interaction through which people act and communicate (DeLong and Fahey 2000; Keesing 1974; Nadler and Tushman 1988). These social norms have an impact on subsequent behaviours of firm members through acting as a means of social control that sets the expectations and boundaries of appropriate behaviours for members (O'Reilly and Chatman 1996). Thus, the study of organizational values may be particularly useful in explaining certain behaviours with respect to how social groups interact with and apply IT in organizational contexts (Leidner, and Kayworth, 2006).

There is general acceptance that the value-based framework for measuring cultures has been helpful in deciphering cultures (Leung et al., 2002; Leung et al., 2005). Although the construct is inherently complex, it is possible to label many different aspects or dimensions of it. A summary of the cultural dimensions which have been cited within the IS discipline has been developed and is presented in Table 1. The researcher develops the summary of cultural dimensions through a normative literature review within 'IS and Culture' research area. This constrain has limited the previous literature to be considered in this thesis. The researcher categorized the different cultural values dimensions when these dimensions have the same meanings.

Culture Dimension	Definition
Uncertainty Avoidance (Hofstede, 1980, 1983, 1991)	Degree to which people in a country prefer structured over unstructured situations: from relatively flexible to extremely rigid. Also, this refers to the degree that people in a society bear risk, from risk averse to risk taker. Also, the degree that people in a society trust and feeling comfortable with dealing with the unknown.
Free Will vs. Determinism (Kluckhohn and Strodtbeck, 1961)	
High Trust vs. Low Trust (Fukuyama, 1995)	

Power Distance (Hofstede, 1980, 1983, 1991) Hierarchy vs. Egalitarian (Schwartz, 1994) Authority Ranking Relationships (Fiske, 1992) Equality – Hierarchy (Hampden-Turner and Trompenaars, 1994)	Degree of inequality among people, which the population of a country considers as normal: from relatively equal to extremely unequal.
Masculinity/femininity (Hofstede, 1980, 1983, 1991)	Degree to which “masculine” values like assertiveness, performance, success and competition prevail over “feminine” values like the quality of life, maintaining warm personal relationships, service, caring, and solidarity: from tender to tough.
Individualism/Collectivism (Hofstede, 1980, 1983, 1991) Individualism/Communitarianism (Trompenaars, 1993) Wide sharing vs. Non sharing (Newman et al., 1977) Communal Sharing Relationships (Fiske, 1992) Idiocentric – Allocentric (Triandis, 1995)	Degree to which people in a country have learned to act as individuals rather than as members of cohesive groups: from collectivist to individualist.
Confucian Dynamism (Long-term orientation vs. short term orientation) (Hofstede and Bond, 1988; Hofstede, 1994)	Long term orientation cultures value virtues oriented toward future rewards, in particular perseverance and thrift. Short term orientation stands for the fostering of virtues related to the past and present, in particular respect for tradition, preservation of ‘face’ and fulfilling social obligations.
Universalism-Particularism (Trompenaars, 1993; Hampden-Turner and Trompenaars, 1994)	Degree to which people in a country compare generalist rules about what is right with more situation-specific relationship obligations and unique circumstances
Neutral vs. Emotional Relationship Orientations (Trompenaars, 1993) Analyzing vs. Integrating (Hampden-Turner and Trompenaars, 1994) Objective- Emotional (Newman et al., 1977) Rationalism- Humanism (Lessem and Neubauer, 1994)	Degree to which people in a country compare ‘objective’ and ‘detached’ interactions with interactions where emotions is more readily expressed.
Specific vs. Diffuse Orientations (Trompenaars, 1993) Inner-directed vs. outer-directed (Hampden-Turner and Trompenaars, 1994)	Degree to which people in a country have been involved in business relationships with in which private and work encounters are demarcated and ‘segregated-out’
Achievement vs. Ascription (Trompenaars, 1993) Achieved status vs. Ascribed Status (Hampden-Turner and Trompenaars, 1994) Merit based vs. Relationship based (Newman et al., 1977) Equality Matching Relationships (Fiske, 1992)	Degree to which people in a country compare cultural groups which make their judgments of others on actual individual accomplishments (achievement oriented societies) with those where a person is ascribed status on grounds of birth, group membership or similar criteria.
Conservatism vs. Affective/intellectual autonomy (Schwartz, 1994) Improvement vs. maintaining status quo (Newman et al., 1977)	Degree to which people in a country emphasise maintenance of status quo (Conservatism), or emphasis creativity or affective autonomy emphasis the desire for pleasure and an exciting life.
Harmony vs. Mastery (Schwartz, 1994) High context vs. Low context (Hall, 1960, 1976; Hall & Hall, 1990)	Degree to which people in a country concerned with overcoming obstacles in the social environment (Mastery) vs. concern beliefs about unity with nature and fitting harmoniously into the environment.
Market Pricing Relationships (Fiske, 1992) Accumulation of Wealth vs. ‘Just Enough’ (Kluckhohn and Strodbeck, 1961)	Degree to which people in a country think in terms of prices and investment.
Monochronic vs. Polychronic (Lewis, 1992) Time as sequence vs. time as synchronization (Hampden-Turner and Trompenaars, 1994)	Attitudes toward use of time in performing tasks either focusing on issues one at a time (monochronic) or performing of activities in parallel (polychronic)

Monomorphic – Polymorphic (Bottger, et al., 1985)	A population in which virtually all individuals have the same genotype at a locus.
Paragmatism – Idealism (Lessem and Neubaue, 1994)	Pragmatism is characterized by the insistence on consequences, utility and practicality as vital components of truth. The pragmatists' world is pluralistic, attentive to context, relativistic about truth and value, devoid of metaphysical concerns except as they have practical consequences

Table 1: A Summary of Cited National Culture Values Dimensions in IS Domain

1 Conclusion

In this paper, the researcher have provided a platform for IS researchers who are willing to study culture within IS discipline. Culture definitions, characteristics, levels, layers, and dimensions have been discussed through covering the literature review of culture and IS. In future research, the authors are going to validate the proposed cultural dimensions framework provided in this paper through empirical research within culture and IS. Also, predefined archetypes cultural dimensions are going to be testified with other approaches to study culture.

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