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# Integrating Qualitative and Quantitative Approaches in Cross-cultural Research

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## ABSTRACT

The affects associated with culture, the values inherent in cultures and the identification of cultural assumptions are popular topics in recent management and Information Systems (IS) research. The main focus in relevant IS research over the years, has been on the comparison of cultural artifacts in different cultural settings. Despite these studies we need to ask whether there is a general approach to how culture can be researched in a rigorous manner? What are the issues that arise in cross-cultural research that have a bearing on decisions about a suitable research approach? What are the most appropriate methodologies to be used in cross-cultural research? Which is more appropriate, a qualitative, a quantitative or a mixed-method research approach? This paper will discuss important considerations in the process of deciding on the best research approach for cross-cultural projects. A case study will be then be reported as an example revealing the merits of integrating qualitative and quantitative approaches followed by a thorough discussion on the issues which may arise during this process.

## Keywords

Cross-cultural Research, Qualitative Research, Quantitative Research, Mixed Method.

## INTRODUCTION

Culture is an emerging theme of high relevance to both academia and practitioners in management, business and IS. A recent global survey among practitioners identified that culture is as important as strategy for business success (Rigby and Bilodeau 2009). Further, culture plays a vital role which cannot be ignored whenever humans are involved (Liang 2009). This applies to organizations which increasingly globalize and are engaging in global projects involving distributed work across different cultures, time zones, languages and information technology such as the implementation of Enterprise Resource Planning (ERP) systems. Given these circumstances, it is of particular importance for the research and Information Systems (IS) community to select the most appropriate research approach for cross-cultural studies in order to understand and be able to research the phenomenon of culture.

This paper reveals considerations to be taken into account while determining if a qualitative or quantitative research approach is more appropriate for the conduct of cross-cultural studies. A case study exploring the conceptions of culture in global IS projects from the practitioner perspective will be used to provide the decision context, while the identification of an appropriate research approach for cross-cultural investigations is discussed. Thus, this paper will identify propositions and provide preparatory work that can assist a future research agenda addressing methodological issues in cross-cultural research.

We proceed as follows. The next section gives a snapshot of culture, followed by a discussion of issues and characteristics in cross-cultural research. Then we introduce the research paradigm. Thereafter we discuss the integration of qualitative and quantitative research approaches in an exemplary case. The paper concludes with a discussion and outlook on future research and application.

## CULTURE, A SNAPSHOT

Culture is seen and defined from various positions, each focussing on different facets. More than half a century ago, Kroeber and Kluckhohn (1952) identified 164 definitions of culture. A common description is given by Kutschker and Schmid (2002) "Culture is the entirety of basic assumptions, values, standards, attitudes and convictions of a social unit, which are

*expressed in multiple behaviours and artefacts and the answer to various demands on the social unit, developed in the course of time*". Commonly, culture is distinguished between its variants of national culture and organizational culture (also known as corporate culture).

National culture is often determined by historical factors and influences like economy, development, geography, climate and religious background. National culture however, is not identical to country culture as the former depends on geographical areas, but not cultural boundaries. For example, in Malaysia there are distinct expressions of the Malay, Chinese and Indian cultures in one country. Similarly regional culture can be either a subset of national culture such as the Basque in Spain and the Bavarian in Germany or a superset of national cultures such as the Scandinavian encompassing Denmark, Norway, Sweden and Finland.

Organizational culture, in contrast to national culture, is specific to an organization and heavily dependent on the degree of anchorage, consistency, system compatibility (Kutschker and Schmid 2002) as well as their history, environment, aims, people and leaders. *"Organizational culture is a socio-cultural, intangible company-specific phenomenon, which includes the value of attitude, standards and guidance patterns, knowledge and ability as well as sense of potentials shared and accepted by a majority of organization's members"* (Schnyder 1988). Organizational culture can significantly differ in headquarters versus their subsidiaries. Furthermore, organizational culture can be interrelated to an industry culture and their shared values such as safety in the aviation or resources sector.

Literature defining and classifying culture, as well as addressing cultural issues, is broad. Most of the cultural studies conducted relate back, or reference the groundbreaking work of 'Cultural Consequences' by Geert Hofstede (1997) that describes and compares national culture attitudes based on surveys in 64 countries, among IBM employees mainly in the 1970's. His work resulted in the five dimensions: Power distance, Uncertainty avoidance, Individualism vs. Collectivism, Masculinity vs. Femininity, and Long- vs.. Short- term orientation (Hofstede 1997). In addition to Hofstede, there is the work of House (2002) and the Global Leadership and Organizational Behaviour Effectiveness Project (GLOBE Project); Trompenaars and Hampden-Turner (1998) defining the basic types of organizational and national culture while disclosing the 7 key dimensions of business behavior; the model of organizational culture by Schein (2004) or Cameron and Quinn (2005) and the Organizational Culture Assessment Instrument (OCAI) to name a few.

In recent IS research, cultural issues are a popular topic addressing a broad variety of aspects from a methodological perspective. Predominantly, IS research examines national culture (Myers and Tan 2002) and pursues the idea of variation and their implications across cultures (Leidner and Kayworth 2006). King and Sethi (1999) emphasised the importance of national culture due to the tight connection of globalization and IS, since many organizations are doing business across borders facilitated by Information Technology (IT). An excellent overview of recent studies is given by Leidner and Kayworth (2006) examining 82 articles concerning culture in IS research.

## **ISSUES IN CROSS-CULTURAL RESEARCH**

What are the issues arising in cross-cultural research that have a bearing on decisions about a suitable research approach?

Cross-cultural research in this paper is seen and understood as referring to all topics involving culture either as main component or artifact of investigation. This lasts from the understanding of values, assumptions, impacts to measuring and comparing them as well as research addressing methodological issues, the 'how' to do cross-cultural research.

Researching culture is always multifaceted, no matter if national or organizational culture, *"...cultures are very complex entities..."* (Javidan and House 2001). A first challenge in researching culture or issues involving culture is to understand what culture is and what it relates to, given the immense number of definitions, conceptualizations, and dimensions describing this concept (Straub, Loch, Evaristo, Karahanna and Srite 2002).

Critique in cross-cultural IS research is addressed by a number of authors (e.g. Myers and Tan 2002) suggesting a more dynamic view of culture, rather than focusing on national culture only. Issues highlighted are the missing connection of organizational and national culture in studies (Gallivan and Srite 2005). Similarly the circumstance that an organizational setting encompasses more than 'only' national culture (Karahanna, Evaristo and Srite 2005). Further, the reliance on Hofstede's early work is criticized by many, such as Myers and Tan (2002) arguing: The concept of national culture as nations states a relatively recent phenomenon; the nation states continued to change and the misbelieve that each nations state has his own culture. Fang (2003) critiques in particular the Geert Hofstedes's fifth national culture dimension Long- versus Short-term orientation in not considering the whole Chinese culture by focusing on Confucianism rather than Buddhist and Taoist values. In addition he pointed to the inaccuracy of information due to poor translating during data collection.

Lastly, scarce frameworks given in the literature are hard to compare in different research settings as samples often represent groups or organizations in only one or two countries. Ronen and Shenkar (1985) have urged the need for more

methodological rigor in sampling, data collection and analysis since two decades. Rigor, being manifested by applying a sound methodology (Benbasat and Weber 1996), can be achieved by carefully selecting suitable research methods, conducting a pilot study prior to the main study as well as triangulating multiple data sources.

### **CHARACTERISTICS OF CROSS-CULTURAL RESEARCH**

In addition to general issues associated with the conduct of research, cross-cultural studies have a number of characteristics that need to be considered prior to deciding on the appropriate research approach. Firstly, the access to data and the associated data collection can be challenging in cross-cultural research given the sensitivity of data and often widely spread location of potential data sources. Secondly, communication is considered to be one of the main challenges to overcome. It has multiple dimensions such as the way of communication, which is supported by information technology like video-conferences, to substitute in-person interviews or online surveys rather than questionnaires sent out by post. Other than the proficiency of language and although everyone is fluent in English, the meaning of words or phrases can differ significantly as well as the manner how an audience has to be addressed are highly dependent on the region, educational level and background.

These characteristics have to be taken into account as well as the research setting prior to deciding on the research approach, the epistemological position and applied methodology. The selection of an appropriate research approach is dependent on the circumstances and objectives of the research rather than derived from philosophy or methodology (Hammersley 1999). The elementary question is whether the research aims to generate a theory or test a theory. Several solutions have been suggested to address this issue of commonly conceptualizing culture in IS. Unfortunately, although culture is heavily investigated, there are still a number of gaps to be addressed including 'how' to research culture.

Literature shows that when addressing cultural phenomena, the quantitative approach is chosen to (a) measure the different dimensions of culture depending upon a specific time and location like Hofstede (1997) or (b) study the influence of national culture on local organizations such as Trompenaars and Hampden-Turner (1998). The qualitative approach, in contrast, sees culture as a phenomenon manifested at various levels, which should not be measured quantitatively. One example is the work of Schein (1996) in *'Organizational Culture and Leadership'*.

### **RESEARCH PARADIGM AND APPROACHES**

The goals and objectives of research are broad; they span from contributing to the body of knowledge and exploring new areas to confirming and replicating previous research findings. The drivers of research may come from academia, industry or self-affirmation of individuals but despite these differences, research requires a methodology and method aligned to the research objectives, the purpose of investigation, the environment, the data and the researcher's background, skills and expertise in order to respond appropriately to demands (Trauth 2001).

The "[research] paradigms define for the [researcher] what it is they are about, and what falls within and outside the limits of legitimate [research]" (Guba and Lincoln 1994). This includes next to the research approach, the epistemological question of 'what is the basic belief about knowledge' as well as the methodological question on 'how can the researcher find out whatever he believes' (Guba and Lincoln 1994).

#### **The Qualitative Approach**

Qualitative research is "a type of research that produces findings not arrived at by statistical procedures or means of quantification" (Strauss and Corbin 1998). It often refers to either someone's life experiences, behaviours, emotions, feelings or to organization functions, social movements, cultural phenomena, and interactions between notions (Strauss and Corbin 1998) grounded in rich descriptions and explanations (Miles and Huberman 1994). Qualitative research approaches have two things in common; they focus on phenomena occurring in a natural environment (real world) and they study them in all their complexity (Leedy and Ormrod 2005), in-depth and in detail (Patton 2002).

Qualitative methods are broadly applied for building theory or testable hypotheses for areas where literature and theory are scarce (Eisenhardt 1989). Limitations of qualitative research are: It does not examine the conditions, omits to explain the unintended consequences of action, does not address structural conflicts within society and organizations and neglects to explain historical change. Indeed Leedy and Ormrod (2005) highlighted that qualitative research does not allow the researcher to identify cause-effect relationships answering questions like 'What caused that?' or 'Why did such-and-such happen?'. These questions can only be answered through quantitative studies.

#### **The Quantitative Approach**

The origins of quantitative research are in natural sciences; it is about examining the As-Is situation, by either identifying the characteristics of a phenomenon or exploring the correlations between multiple phenomena (Leedy and Ormrod 2005). The

quantitative approach is deductive and objective, while the researchers' role being value-free, adopting the "*disinterested scientist*" role (Neuman 1997).

Quantitative research requires standardized measures (Patton 2002) and often starts with a cause-effect relationship derived from existing theories or theories derived from preceding qualitative research (Leedy and Ormrod 2005; Neuman 1997). Limitations to quantitative research include the requirement of large samples. Furthermore results of quantitative research often rely on data from questionnaire which provides little insight to the subjective experience of participants whereas inferential depend on the subjective interpretation of the researcher (Roer-Stier and Kurman 2009). In addition, the results from this approach disclose a lack of insight in the research while explaining only the '*what*' without providing any understanding or answer to the '*how*'. These gaps can only be filled by a qualitative approach.

### **Mixed Method Approach**

The mixed method integrates both the qualitative and quantitative approach in one research setting. The best research "*often combines features of each*" (King, Keohane and Verba 1994) while forcing a choice potentially limits the research or reduces the quality of findings being one dimensional (Savenye and Robinson 2004). A multi-method (e.g. Gable 1994), or mixed-method approach has gained more popularity, recognizing the benefits of complementary rather than competitive fashion (Jick 1979).

Studies combining the qualitative and quantitative approach their weaknesses reciprocally. The process of mixed methods research is either sequential or concurrent, whereby applying one research approach dominant over the other or both in an equal manner. Several models of combining qualitative and quantitative research are mentioned by Creswell (1994). Two of these are: The '*quantitative first*' using findings derived from a quantitative study as starting point followed by a qualitative investigation addressing questions left out or open issues. The '*qualitative first*' is often an exploratory study that provides "*rich descriptive and documentary information about a topic or a phenomenon*" (Tripp-Reimer 1985). The identified topics and concepts derived are then best to be used subsequently with a quantitative investigation or testing.

Potential barriers to be taken into account for mixed method research are highlighted by Brymann (2007), such as: Different audience, methodological preferences, structure of the research project, role of timelines, skill specialism, nature of the data, bridging ontological divides, publication process and problems of exemplars. All of these barriers should be considered and compared with the actual setting and if necessary to be addressed prior to embarking a mixed method approach.

There is a role for mixed method research in cultural studies. The next section discusses how such an approach can be applied.

### **CASE STUDY**

The following case illustrates and discusses 'how' the qualitative and quantitative research approach can be integrated into a mixed method approach in a research project examining the conceptions of culture in global IS projects.

In cross-cultural research, as in any other fields, the research problem is formulated prior to embarking on the enquiry. An initial literature review aimed to understand the research methods and techniques is used to derive the results and not 'only' to assess the current state of the research field (Creswell 2007).

The case study in this research is situated in a business context aiming to first explore and discover how culture is conceptualized in global IS projects within a diverse cultural environment and then to validate and generalize these findings in a broader community. The background to this research project is on one hand the general awareness among scholars and practitioners about what culture is and what it relates to. On the other hand research does not yet detail how culture is conceptualized in the context of global IS projects. However, by undertaking this research we anticipate drawing on new insights into conceptions of culture to build a theory (see following sub-section) of culture in the context of global IS projects. The initial research question posed was formulated as '*How is culture experienced in the context of global projects?*' Culture, when commencing this study was regarded from a national and organizational perspective.

### **Applied Mixed Method Approach in Cross-cultural Research**

Given the characteristics and objectives of this study to firstly explore the conceptions of culture in global IS projects and secondly to generalize the results and make them applicable for a broader audience (theory building), a mixed method approach is being applied. The qualitative approach is used for theory development in the first phase, which is systematically linked to quantitative approach in the second phase to test the theory, following the '*exploratory sequential*' mixed method design (Creswell 1994). In the final phase a thorough discussion and integration of the qualitative and quantitative results are anticipated to reveal a theory. This theory is expected to provide predictions and at the same time testable propositions and causal explanations, by answering the 'what is', 'how', 'why', 'when' and 'where' questions being classified as Type IV

theory by Gregor (2006). Figure 1 below illustrates briefly how the qualitative and quantitative approaches were integrated in our case.

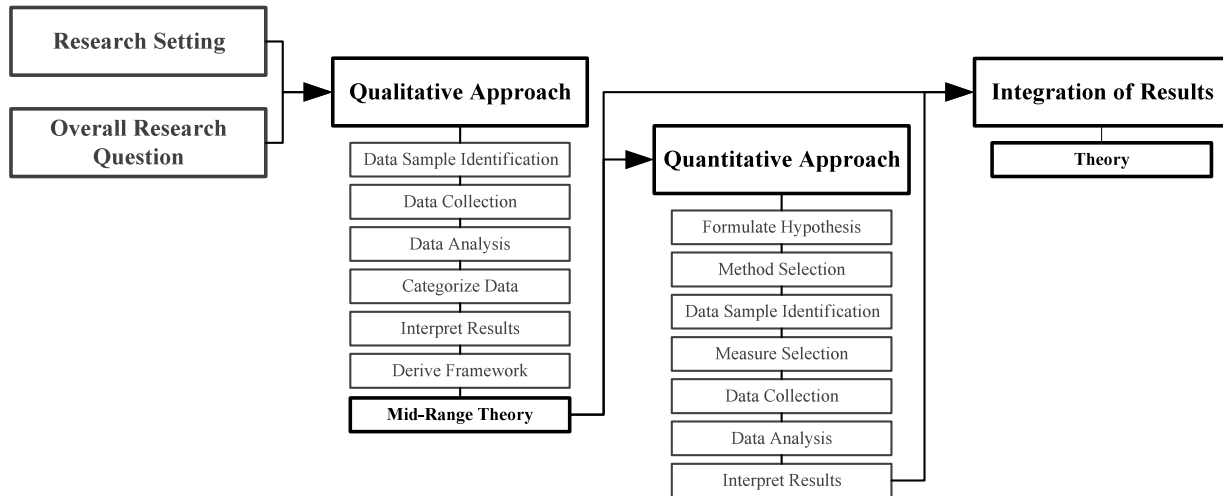


Figure 1. Mixed Method Approach

For planning the mixed method approach, attention has to be paid on not making assumptions about potential findings on one or both of the applied research approaches. For example quantitative conceptualizations will not easily lead to grounded theory, while a qualitative research approach will do (Pearse and Kanyangale 2009).

1<sup>st</sup> Qualitative Approach

The main reason for starting with a qualitative approach is the natural research setting which consist of: Rich data; multiple undefined variables that need to be explored, given the scarce literature; non existing conceptualization of culture as well as the rather static than dynamic view of culture in IS research (Myers and Tan 2002). This is in line with the research objective to discover patterns and develop a mid-range theory in order to better understand how culture is conceptualized by practitioners in global IS projects, rather than a statistical validation and generalization of non-existing models. In addition, the chosen approach allows a certain level of flexibility as studies get often shaped in meaning and context during the qualitative phase.

The research questions posed aim to answer the ‘what’ and ‘how’ culture is conceptualized. Data was collected through semi-structured interviews allowing the researcher to understand the participant’s cultural context, learn and gather information from their life experiences and even more important to be open for their interest and values (Creswell, Shope, Plano Clark and Green 2006). Interviewees (38) were practitioners with extensive working experience in global IS projects. Priority while selecting interviewees was set on quality, having only a few but powerful interviewees rather than quantity. Interviewees faithfully described the meaning of social actions in words rather than numbers and allow the researcher to understand human actions and ground explanations in the context from where they emerged. Interview questions included: ‘Describe a situation in which you observed the effects of cultures on global projects’. Data was analyzed by applying the grounded theory method “a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory” (Glaser 1992), by aiming to derive a conceptual model and generate a mid-range theory around the conceptions and understanding of culture in the context of global IS projects. The steps of data analysis included open-, selective coding, and memoing. In continuance core categories emerged throughout the phase of theoretical sampling.

Alternative qualitative approaches suitable to study the conceptions of culture next to the grounded theory method are for example: Ethnomethodology, “an attempt to display the reality of a level which exists beyond the sociological level” (Mehan and Wood 1975); or phenomenology, “the study of essences” (van Manen 1997), concerned about experience of human life.

Qualitative research can thereby reveal data which is unable to be accessed by quantitative research such as the experience of individuals (Roer-Stier and Kurman 2009). The qualitative approach further helps to integrate multiple meanings and interactions to understand its phenomenon. This applies in particular to the explorative interviews, which are conducted in the first phase of the research to understand how culture is conceptualized in global IS projects based on the interviewee’s professional experience. The limitation to generalizing and estimating the propagation of the findings will be addressed during the second phase, where a quantitative approach substitutes the first phase.

## 2<sup>nd</sup> Quantitative Approach

The second phase of the research project will apply the quantitative approach. This supplements the theory generation and refinement of the conceptual model by surveying a large sample, to test hypotheses derived from the preceding qualitative approach. The descriptive, quantitative method of survey research is applied to isolate variables and demonstrate their correlation and variation based on the findings from qualitative data. In addition quantitative data are able to support qualitative results by considering numerous statistics regarding organizations and nations that will help to describe the historical and social context (Creswell et al. 2006). These are intended being a tremendous help to further interpret and underline qualitative derived cultural conceptions.

The quantitative phase is expected to validate and generalize results from phase one through a global online survey. The sample is expected to include numerous selected multinational organization as well as individuals with an extensive experience in global IS projects. It is targeted to have at least fifty valid response from every cultural cluster identified in the GLOBE project (House et al. 2002). Systematic sampling to select individuals or clusters will be applied in a predetermined sequence (Leedy and Ormrod 2005). Given the culturally diverse sample size, special attention has to be paid on wording the questions as highlighted earlier.

The results are anticipated to support or disconfirm the conceptual model derived from the qualitative approach and consequently refine the mid-range theory.

### Integration of Results from the Qualitative and Quantitative Approach

By applying the qualitative and quantitative approach in different phases of the research it is anticipated that shortcomings of both methods will be compensated. Despite the fact that qualitative and quantitative research approaches differ in several ways they are also complementary (Neuman 1997) and be seen as a continuum rather than dichotomy. This is expected to a benefit to the complex and multifaceted construct of cross-cultural research.

Regardless of the label given to the research approach, it has to be ensured that the findings remain relevant for practitioners and scholars alike. Importantly is hereby the development of a coherent discussion of results. Interpreting and integrating the results from the first and second phase will be anticipated to emerge in a grand theory of how culture is conceptualized in global IS projects. This will include values, assumptions and associated effects of culture as well as specifics to organizations and cultural clusters.

## Discussion

Capturing the multifaceted and complex setting of cross-cultural research at a single point in time with a single frame might be unrealistic, whereby repeated measures of a longitudinal mixed method research design are expected to capture these issues. Thus we propose a mixed method approach for researching cross-cultural issues or areas involving cultural artifacts. Advantages of both approaches can thereby be used mutually, enriching the rigor as well as relevance of research by deriving more faithful results. The integration of the quantitative and qualitative approach verifies and generalizes the theoretical findings generated in a single study (Sells, Smith and Sprenkle 1995).

Research in cross-cultural studies has often not been related to practice. By favoring the '*qualitative first*' mixed method approach, the research area is at first broadly explored, gaining a common understanding prior to generalizing the results in a manner that they are applicable to the stakeholders. This is in line with Creswell et al. (2006) who mentioned that qualitative research plays a major role in mixed method studies in particular through providing understanding or through the support of intervention trails. In the context of cross-cultural research this applies to firstly exploring, secondly explaining culture before enriching or even deriving a mixed method approach. Despite the advantages mentioned it should be highlighted that the decision of the applied research approach has to be based on objectives rather than assumptions or generalization of previous studies. The combination of both approaches does not grant great results as some papers reported the opposite (Kinn and Curzio 2005), results might contradict. To avoid this it is important to examine each approach prior to combining them in order to prevent conflicting demands (Kinn and Curzio 2005).

In summary, the suggested mixed method research elaborates analysis presenting richer detail and enforces new lines of thinking by providing different viewpoints by blending qualitative and quantitative approaches. Its results confirm and corroborate each other through the applied research approach. In short, it is a composition of traditions rather than being just a research tool-box (Vitale, Armenakis and Feild 2008).

## CONCLUSION

This paper demonstrates how researching in a cross-cultural setting can progress from qualitative theory development to quantitative validation by applying a mixed method approach. The blending of a qualitative and quantitative approach is thereby anticipated to be of great benefit to research and practice. The reported case suggests how a quantitative approach

aiming to be validated and generalized follows a qualitative explorative approach. Through the integration of results from both approaches, the outcomes are anticipated to be more convincing than they might have been otherwise.

The discussed approach addresses issues in cross-cultural IS. It is anticipated that with sufficient data, resources and time, results will reveal the interaction between national and organizational culture, rather than current research predominantly on national culture.

Single method approaches will remain to be important for certain studies despite the fact that we anticipate the increase of mixed method approaches aiming for validated and generalizable results. However we must bear in our mind to not miss out limitations such as time, expertise and access to data. In particular the experience of the research team has to be highlighted as 'novice' researchers might not be familiar in using both approaches and may not interpret the collected data appropriately which can accumulate to a delay in the research plan or even lead to non meaningful results. To conduct rigorous research it will be necessary to examine and understand all potential effects of combining qualitative and quantitative research and not to mistake them. Future work to extend this study is in progress, which includes refining and advancing ways of mixing these approaches by embedding the epistemological position as well as the potential methodological formulations while aiming for full integration. Similarly work is required to revise and advance the application of mixed method approaches to the demands of cross-cultural research. Moreover the findings from this and continuing work will potentially be applicable for research areas of similar complexity across disciplines.

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