Development and validation of an instrument to measure organizational cultures' support of Business Process Management

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ABSTRACT

The purpose of Business Process Management (BPM) is to increase the efficiency and effectiveness of organizational processes through improvement and innovation. Despite a common understanding that culture is an important element in BPM efforts, there is a dearth of theoretical and empirical research on culture as a facilitator of successful BPM. We develop the BPM culture construct and propose a validated instrument with which to measure organizational cultures' support of BPM. The operationalization of the BPM culture concept provides a theoretical foundation for future research and a tool to assist organizations in developing a cultural environment that supports successful BPM.

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1. Introduction

Business Process Management (BPM) has become a recognized field of research in the Information Systems discipline. The purpose of BPM is to increase the efficiency and effectiveness of organizational processes through improvement and innovation [22]. Early approaches in both research and practice have focused on the role of information technology (IT) in supporting BPM [4], but a more holistic understanding of BPM has been established since then that recognizes the strategic and governance elements of BPM, as well as soft factors, such as people and culture issues [54]. Culture in particular has often been identified as critical to the success of business processes and IT-driven change [11], as both a driver and a potential inhibitor of BPM initiatives [40,60].

An important concept that has been proposed in this context is the notion of a *BPM culture*, i.e., a culture that supports BPM objectives. While some researchers have referred to this concept in their work [69,30], its meaning was not fully explored until recently. In a prior global Delphi study with experts from BPM research and practice, we analyzed and conceptualized the characteristics of an organizational culture that supports BPM and identified four distinct values that define the BPM culture concept [56].

Nevertheless, there is little knowledge about how various cultural concepts or conceptualizations of culture intervene in BPM projects. One possible reason for the dearth of research in this area is the lack of an appropriate operationalization of culture. Empirical studies of cultural settings and their influence on processes or outcomes of BPM require reliable and valid measurement instruments. Such instruments would also provide practitioners with an analysis and benchmarking tool that could be used to examine the extent to which their organizational culture facilitates their BPM approach.

To address this gap, *the purpose of this study* is to develop and validate a measurement instrument with which to assess an organizational culture's support of BPM. We adopt a multi-stage approach to instrument development that involves experts from BPM research and practice from around the world. As BPM is an established management approach worldwide, we deem an international study necessary. We report on construct and scale development, operationalization, and measurement instrument validation and application, building on and extending the definition of the BPM culture concept from a previous Delphi study [56].

We proceed as follows. Next, we provide a relevant theoretical background on the main concepts of our research – BPM, organizational culture, and the notion of BPM culture – which compose the conceptual basis for our study. We then provide an overview of the methodological approach and describe the procedure that we followed in the various stages of instrument

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development and validation. Subsequently, we discuss our findings, the implications of our study for research and practice, and the limitations of our approach. We conclude with a summary of our contributions.

2. Background

2.1. Business Process Management

BPM is a comprehensive approach to realizing efficient and effective business processes in an organization [54]. Its process view contrasts the functional view, which originates from the division of labor in Taylorism. In focusing on transcending departmental boundaries, BPM builds on several management approaches, embracing aspects of the total quality management (TQM) approach from the 1980s and the business process re-engineering (BPR) approach from the 1990s [22]. While approaches such as these differ in their specific focus (e.g., quality, radical process change), they contributed to the emergence of BPM as a holistic management concept.

BPM has not always been considered a comprehensive approach, as early research on BPM mainly focused on technical aspects of process management, such as workflow optimization through ERP systems and technological support for process modeling [26,62]. Only recently has BPM been acknowledged to require a holistic consideration of additional factors, such as strategic alignment, governance, methods, people, and culture, (for an overview, see [66]), with culture being increasingly recognized as a key element in successful BPM in terms of process efficiency and effectiveness [60].

While many authors have acknowledged the importance of culture in BPM, perceptions of its role in BPM differ, as does the concept of culture, which can refer to diverse cultural groups, such as national, organizational, and work group cultures. Therefore, the following sections more closely examine the meaning of the culture concept as it is discussed in the literature, with a specific focus on culture at the organizational level and the concept of BPM culture as a specific facet of organizational cultures.

2.2. Organizational culture

While definitions of the culture concept differ widely, many culture researchers agree that values are the core elements of culture [55,23]. Values are invisible guiding principles that determine visible behavior and structures in social interaction [55,45]. That is, typical actions and structures within a group, be it a nation, region, profession, organization, or work group, are largely determined by a set of values that are shared among the members of the group [23].

Individuals can belong to many cultural groups and have several cultural identities [59] that influence their value system, so a cultural group cannot be considered homogeneous in the sense that all members of the group think and act alike. Despite these differences, commonalities among the members of a cultural group are based on shared values. The complexity of the organizational culture concept is also underscored by the fact that an organization comprises many work group cultures that themselves comprise members of multiple national cultures.

Despite the complex interrelationship between organizational culture and other group cultures, our research focuses on organizational culture, as the organization is a common focus of research on culture [66,37]. Moreover, this study addresses one particular facet of organizational culture, namely, BPM culture [66]. The next section delineates specifications of the BPM culture concept as well as the conceptual basis of our study.

2.3. BPM culture

Several studies have referred to the notion of *BPM culture*, which is defined as a culture that supports achieving BPM objectives [22,69,30,65]. While authors such as Zairi [69], de Bruin and Rosemann [12], and Jesus et al. [30] provide some insights beyond this general definition, researchers have recognized that the BPM culture concept generally remains unspecified in extant studies [66].

For example, Zairi [69] proposes a set of rules that support the development of a BPM culture, yet these rules provide only initial insight into the dimensions that compose BPM culture. Similarly, the BPM maturity model from de Bruin and Rosemann includes culture as an important factor in BPM [54], and the identified capability areas of this factor elucidate dimensions of culture that support BPM. Jesus et al. describe, on a general level, how the diffusion of BPM culture can be realized [30]. While these studies provide valuable first insights into the dimensions that compose the BPM culture concept, empirical research that goes beyond deriving concept specifications from a few sources in the literature is still required [65].

This research need was recently addressed through a global Delphi study that examined and defined the characteristics of an organizational culture that facilitates BPM in realizing efficient and effective business processes (i.e., BPM culture) [56]. The Delphi study involved 27 BPM experts from academia and practice from 13 countries. Over several rounds of consensus finding, the study identified and defined four distinct cultural values that facilitate BPM: customer orientation, excellence, responsibility, and team-work (Table 1). These values are also referred to as *CERT values* based on their acronym.

Building on the conceptualization of the CERT values, the research presented in this study develops an instrument to measure the extent to which an organization adopts a BPM culture. The next section describes the development of this measurement instrument, introducing the general methodological approach and providing insights into the various stages of our research.

3. Methodology

An initial analysis of the literature revealed a lack of suitable items for measuring the four defining constructs of BPM culture that are listed in Table 1, so we chose to develop appropriate operationalizations in an effort to design an instrument that specifically and directly measures these constructs. Building on well-recognized and comprehensive approaches for instrument development and validation (e.g., [43,50,39]), we employed a multi-stage approach for developing and testing a scale to measure to extent to which an organizational culture supports BPM. We perused a variety of data collection and analysis methods to operationalize the four defining elements of a BPM culture in order to ensure the reliability and validity of the measurement instrument. Fig. 1 provides an overview of the two-phase research

Table 1
CERT value constructs that define the BPM culture concept [22,69,30,56,65,12].

Construct	Definition
Customer orientation	The proactive and responsive attitude toward the needs of process output recipients.
Excellence	The orientation toward continuous improvement and innovation to achieve superior process performance.
Responsibility	The commitment to process objectives and the accountability for process decisions.
Teamwork	The positive attitude toward cross-functional collaboration.