Standardization Frameworks in Services Offshoring: The Relationship between Process Implementation Thoroughness, Task Complexity, and Performance Improvement

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Abstract
Prior research has characterized the adoption of technical and process standards as a multi-stage effort ranging from the initial implementation through institutionalization. However, the relationships between these adoption stages have not been examined significantly. In this study I analyze performance data from a large service provider that has implemented a process standardization framework for services offshoring. I evaluate the extent to which process standardization influences service delivery performance, and how the effect of standardization differs based on the implementation duration of each new process and the complexity of the task for which the process is implemented. The results indicate that longer implementation durations are associated with greater performance improvement. Performance on complex tasks also increases to a greater extent after standardization than performance on simple tasks. Contrary to expectations, performance on complex tasks improves to a greater extent following shorter implementation durations than after longer durations.

1. Introduction

The sourcing of business services to third party firms has grown dramatically over the last two decades [5]. Much of this growth has involved offshoring of work to remote locations; in information technology (IT) services, this has led to a burgeoning industry in Asia and the development of some very large IT services firms. The services industry is still quite labor-intensive, and firms continue to search for innovations that will lower costs or enhance effective service delivery. A recent study indicated that 29% of large client organizations had fired a service provider within the previous twelve months [21]. Such failures in service delivery are very expensive not only for clients but also for service providers, who have made client-specific investments in both labor and capital in order to efficiently provide services.

To address these concerns, many organizations have implemented process standardization frameworks. Broadly defined, process standardization is the use of documents, rules, guidelines, or activities aimed at achieving an optimum degree of order in a given context [23]. In manufacturing industries, the application of formal process standards such as ISO 9000 and Six Sigma have enabled firms to reduce process variation and realize significant economic returns [12, 39, 25]. Many software firms have also implemented process improvement programs such as the Capability Maturity Model Integration, or CMMI [20, 18]. More recently, providers of business process outsourcing (BPO) services have begun to standardize their processes [44, 32], though evidence on changes in performance resulting from the implementation of formal standardization frameworks is lacking. In particular, the present study will focus on the delivery of “back-office” BPO services such as accounting and human resources.

Implementing process improvement frameworks across a large, distributed organization can be extremely challenging. Organizations implementing new processes often must decompose and recreate work routines several times before new capabilities can be developed [34]. Firms that obtain the greatest performance increases from process improvement frameworks often go beyond the minimum standards of the framework, tailoring processes to their specific needs [33, 2]. In other words, firms must implement process improvement frameworks in a thorough and comprehensive manner in order to obtain optimal benefits from them; otherwise, they may experience zero, or even negative, returns [6]. Because one goal of process standardization is to impart some consistency to task performance, standardization may be ill-suited to situations in which conditions are variable or inconsistent. Although prior research suggests the importance of routines in complex environments [15], the impact of process standardization frameworks under conditions of complexity has not been
In this study, I examine the performance impacts arising from the implementation of a process standardization framework at an offshore business unit of a multinational firm that provides IT and repetitive BPO services. More specifically, I examine the relationship between the implementation thoroughness of individual processes within the framework and the performance improvements arising from those processes. I also investigate the moderating impact of task complexity on process standardization and performance. The study analyzes a detailed dataset of delivery performance outcomes for a range of services collected both before and after the implementation of an organization-wide process standardization framework. The results indicate that implementation thoroughness is associated with a greater increase in performance post-standardization. Tasks that are characterized by high complexity are also associated with a higher increase in performance post-standardization. However, counter to expectations, I did not find a positive relationship between implementation thoroughness and task complexity in terms of performance; rather, complex tasks with more thorough implementations experience lower increases in performance after standardization occurs.

2. Theoretical background and hypotheses

A typical path for improvement via process standardization begins with an analysis of the firm’s existing processes and a mapping of these processes to the new standardization framework. As part of this analysis, opportunities to remove wasteful or inefficient procedures are often identified [19]. Ideally, standardization results in reduced process variation, which in turn leads to more consistent performance and higher quality [3]. As quality improves, the firm should encounter less rework and exception handling, resulting in lower costs [19]. Improved quality may also lead to greater customer satisfaction, which can lead to increased revenues [10]. Most process standardization frameworks also emphasize the need for continuous improvement in order to adapt to changing customer or environmental needs [40].

Much of the literature on the implementation of technological and process innovations, dating back to Cooper and Zmud’s seminal work [11], has focused on the differences between an organization’s initial adoption of an innovation and its assimilation into everyday use. In this vein, I characterize the assimilation of process standardization frameworks as a two-stage process that includes an implementation stage and a utilization stage. In the implementation stage, an expert team that has received training in the framework works with process owners throughout the organization. During this stage the contents of the framework – business processes, procedures, policies, and other artifacts – are adapted to meet the needs of the organizational units. At the end of the implementation stage the framework has been put in place for the organization to use, but the organization has not yet applied it in a systematic way. In the utilization stage, the process owners work with their respective departments to ensure that the processes in the framework are fully incorporated within the organization’s processes. The process owners work with end users to educate them about the new processes and put them into everyday use. This stage occurs for a period of several months after the implementation stage has ended, until the organization begins to experience changes in performance as a result of the new processes.

To become commercially viable, process standardization frameworks must be adopted by a sufficient number of organizations. Therefore, they must be general enough that they will appeal to a range of firms, possibly of different sizes or in different industries. As a consequence, no one process standardization framework is a perfect fit for all organizations; rather, they must be adapted to a particular organizational context. Research has shown that organizations may obtain greater performance improvements from process frameworks by going beyond the minimal standards and tailoring frameworks to meet specific needs [33]. More generally, organizations that more fully assimilate IT and process innovations are expected to derive greater benefits from their recurrent use [16]. Here, I define implementation thoroughness as the extent to which standardized processes are designed and implemented to meet the needs of a particular task. Implementation thoroughness for a particular process is expected to
require additional time and resources from the firm, resulting in additional tangible and intangible costs. In terms of implementation thoroughness, a fuller level of assimilation means that the organization has adapted the process standards more thoroughly, customizing them to obtain a greater level of fit with organizational tasks. This customization and fuller assimilation into everyday use suggest a greater level of effort in the process implementation stage, which is in turn associated with greater implementation times. Therefore:

**H1: Standardized processes that take longer to implement will lead to greater performance improvement.**

Task complexity within the “back-office” BPO context reflects the extent to which the task is analyzable and has a known, consistent procedure that specifies the sequence of steps for execution [36]. Complex tasks have a greater number of possible routines than do simple tasks. Complexity in tasks creates a higher degree of uncertainty about the steps that need to be performed; indeed, some prior research has cast task complexity as a dimension of uncertainty or nonroutineness [43, 24]. In addition, the causal linkage between the performance of the task steps and the outcome of those steps is less clear when the set of steps varies from instance to instance [42]. This is particularly problematic for intangible services, where the production process is already difficult to observe [7]. Service transactions can be varied and idiosyncratic, relying on knowledge from multiple parties to consummate [9]. More complex tasks will also contain a greater number of exceptional cases that require different methods or procedures for completion of the work, consuming additional time and resources [36, 13, 30].

Complex tasks in BPO require more procedural flexibility so that the individual performing the task can accommodate exceptions or other conditions [35]. Standardized processes may help individuals to recognize and develop new and efficient routines for exception handling [15]. Process standardization has been shown to increase conceptual learning or meta-learning in which individuals “learn to learn” more efficiently, enabling them to adapt more effectively to changing environments [31]. This implies that process standardization would be particularly helpful for complex tasks that require multiple routines, particularly over time. At the individual level, as employees learn and become accustomed to the new processes, they will be able to deal with task complexity more easily [15]. The ability of employees to adapt to the different needs of complex tasks over time is strengthened as they develop knowledge about which processes can be performed and how they can be performed [29]. These factors will contribute to an increased level of performance in outcomes for complex tasks after standardization occurs, such that:

**H2: Standardized processes will lead to greater performance improvement for complex tasks than for tasks that are not complex.**

Because complex tasks are generally characterized by additional routines and exceptions, the implementation of standardized processes for those tasks must be especially thorough in order to be effective. Additional implementation thoroughness is required because to accommodate additional task complexity, standardized processes must themselves be more complex and will in turn take longer to implement. More thorough implementations will result in processes that are a better “fit” for the needs of complex tasks; as a consequence, performance on these tasks will improve greatly after standardization occurs. In contrast, if implementation thoroughness is too low, the new process may not be sufficiently complex and may impose some rigidity upon individuals trying to execute complex tasks. An incomplete implementation would then result in lower performance improvements in the utilization stage.

For simple tasks, the opposite is expected. Tasks that are consistent and repetitive should require only a single process or a simple, small set of processes. The implementation of these processes should be easier and require less time, since they will be less likely to require customization in order to accommodate the multiple exceptions and conditions that would be present with complex tasks. Further, a longer implementation cycle for simple tasks is likely to be unnecessary and may even be counter-productive. Simple tasks should be tied to processes that are easier to implement; a longer implementation cycle for these tasks may indicate change management issues or other organizational problems. In other words, implementation thoroughness is simply not required for simple tasks. Thus when implementations are exceedingly long, performance on simple tasks post-standardization is expected to be lower relative to that on variable tasks. The posited “fit” between complexity and implementation thoroughness is shown in Figure 1: cells 1 and 4 indicate a good fit between implementation thoroughness and task complexity, while cells 2 and 3 indicate a poor fit.

In summary, longer process implementation times may result from two primary factors. The first factor is the need to adapt the new process to the complexity inherent in the task (cell 4). This adaptation is necessary to ensure good alignment between complex tasks and standardized processes [26]. The second factor is the need to accommodate the idiosyncratic preferences of different constituencies within the
organization. For simple tasks, longer implementation times may indicate the presence of these factors rather than a genuine need for implementation thoroughness (cell 2). In turn, the degree of “fit” between thoroughness and complexity is expected to correlate with performance improvements after standardization has occurred. This leads to my final hypothesis:

**H3: Standardized processes that take longer to implement will lead to greater performance improvement for complex tasks than for simple tasks.**

![Figure 1: Fit between implementation thoroughness and task complexity](image)

### 3. Research setting

#### 3.1 Process improvement framework

The framework I examine in this study is the eSourcing Capability Model for Service Providers, or eSCM-SP [22]. This framework was developed by the IT Services Qualification Center (ITScq) at Carnegie Mellon University specifically for providers of services outsourcing and offshoring. The eSCM-SP consists of 84 procedures, each consisting of a set of activities that must be implemented before the process is considered to be complete. Within the framework, these procedures are referred to as Practices. Each eSCM-SP Practice may be characterized along several dimensions, including Capability Level, Sourcing Lifecycle (Initiation, Delivery, Completion, or Ongoing) and Capability Area (e.g. Contracting or People Management). An example Practice is ppl03, “Establish and maintain a work environment that enables personnel to work effectively”. This Practice is at Capability Level 2 (Consistently Meeting Requirements), in Capability Area “People Management”, and is an ongoing Practice within the Sourcing Life-cycle. Certification in the eSCM-SP is a rigorous and labor-intensive process. For eSCM-SP certification to be given, each Practice within a particular Capability Level must be supported by strict evidence requirements and evaluated by an authorized external team.

#### 3.2 Research site and data

My study examines detailed performance data from an offshore service delivery center of a large, multinational company based in the U.S. The delivery center has several thousand employees and has received certification in the eSCM-SP. The center provides “back-office” business services directly to its clients, and also provides internal services to other delivery centers within the organization (i.e., “insourcing”). For this analysis, I focus on the delivery center’s external service delivery processes, which include financial services (e.g. accounts payable, billing, credit management, and insurance) and human resource services (e.g. background checking, recruitment, benefits management, and training). The research site devised an implementation plan that divided activities into three main areas: analysis (current process design, gap analysis, and recommendations); development (creation and/or customization of processes and the artifacts supporting those processes); and rollout (organizational communication, training of users, and transfer of ownership to the organization).

The research site provided a database archive containing all of its recorded external service delivery performance outcomes from April 2004 to August 2006. Because the site received eSCM-SP certification during the sample period, the database contains records related to each performance outcome both before and after the program was adopted, making ex ante and ex post comparisons possible. At the same time, because the data cover a limited time period, factors such as macroeconomic or technological changes should have a negligible impact. In addition to the performance data, I also conducted supplemental interviews with individuals at the research site to further my understanding of the site’s business processes and use of the eSCM-SP framework.

The dataset contains information including the name of the performance outcome, method of calculation, frequency of calculation, service line, task, and date. Prior to the eSCM-SP certification process, the research site defined a list of tasks to organize and track performance outcomes within each service line. A task is a logical unit of work within a business line and may consist of sub-tasks or activities, which will be described later. Figure 2 illustrates sample data for the Financial Services business line. This figure depicts some of the tasks, activities, performance outcomes, and eSCM-SP Practices associated with that business.
line. In total, the dataset contains over 400 distinct performance outcomes that were present both before and after eSCM-SP certification. Because the structure of the data is hierarchical and somewhat complex, I will refer to Figure 2 in my discussion of the dependent and independent variables in the analysis.

<table>
<thead>
<tr>
<th>Task</th>
<th>Activity</th>
<th>Outcome</th>
<th>eSCM Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts</td>
<td>Vendor Payments</td>
<td>% paid on time, by value</td>
<td>del04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% paid on time, by volume</td>
<td>del04</td>
</tr>
<tr>
<td></td>
<td></td>
<td># of invoices paid</td>
<td>kmc08</td>
</tr>
<tr>
<td></td>
<td>Help Desk</td>
<td>% of invoices paid</td>
<td>del04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value of invoices paid</td>
<td>kmc08</td>
</tr>
<tr>
<td></td>
<td>Error Management</td>
<td># of outstanding help</td>
<td>del04</td>
</tr>
<tr>
<td>Cash</td>
<td>Emergency Payments</td>
<td>% action on emergency payments</td>
<td>del04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and same-day payment requests</td>
<td></td>
</tr>
<tr>
<td>Accounting</td>
<td>Reconciliation</td>
<td>% paid on time, by volume</td>
<td>del04</td>
</tr>
</tbody>
</table>

Figure 2: Data structure with examples from financial services

3.3 Dependent variable

The unit of observation for the study is the actual value of a particular performance outcome recorded during a particular calendar month. Performance outcomes that were recorded on a weekly basis (19% of the observations) have been averaged so that only one observation per month exists in the dataset, facilitating comparison across outcomes. Outcomes are expressed as percentages scaled from 0 (low) to 100 (high), with higher numbers indicating more favorable outcomes. For example, Figure 2 depicts an outcome called “% of activities completed as per schedule”. A value of 95 for this outcome would mean that 95% of the activities were completed according to schedule; a value of 80 would mean that only 80% were completed, a less desirable outcome.

3.4 Independent variables

3.4.1. Standardization. Standardization is indicated by a binary variable based on the certification date of a particular eSCM-SP Practice, where 1 = certified and 0 = not certified. I mapped each activity in the dataset to an eSCM-SP Practice. This mapping was based on the alignment of the activity with the performance objectives of the particular Practice. Only the Practices that were implemented by the site and validated during the certification process were considered in this mapping. The mapping was then independently validated by a team of two of the eSCM-SP authors. The initial inter-rater agreement between the team of eSCM-SP authors and myself was calculated at $\kappa = 0.8697$, which indicates substantial agreement given the number of possible categories for assignment. In the cases where the initial assignments differed, agreement was reached through subsequent discussion. For example, in Figure 2 the activity “Vendor Payments – % paid on time, by value” is tied to the eSCM-SP Practice del04 (Verify Service Commitments). Because this Practice was certified in February 2005, all observations for this activity that occur after this date would be considered standardized. Certification dates were defined exogenously by the organization based on the timeframe of the model’s implementation, and are not related to any particular service line or set of outcomes in the data.

3.4.2. Task complexity. The dataset contains performance outcomes for 77 distinct tasks, which were defined exogenously by the organization. The measure of task complexity indicates potential variation in task execution by counting the number of distinct activities that characterize each task. An activity is a facet of the task that requires action; it may be thought of as a sub-task, or a unit of work within a task. The number of activities for a particular task is derived from the descriptions of all of the unique performance outcomes for that task. For example, two of the performance outcomes for the Financial Services business line are “# of invoices paid” and “value of invoices paid”. Although these are different performance outcomes they measure different aspects of a single activity (i.e., Vendor Payments), so in terms of task complexity the two outcomes would be indicative of a single activity. Thus, the task “Accounts Payable” (see Figure 2) contains six distinct performance outcomes but only three distinct activities, resulting in a task complexity measure of three. A greater number of activities indicates greater complexity, because the tasks are lengthier and there is a higher likelihood of variation in execution. This definition of task complexity is congruent with the concept of “task specializations” as captured in the MIT Process Handbook [27]. In other words, while a task may have a general set of desired outcomes, there may be multiple ways to execute that task [27]; a greater number of specializations indicates greater variability and complexity. I counted the number of distinct activities for each task and then had the counts validated by an independent coder. The independent coder agreed with the initial assessments in 71 out of 77 cases (92.2%); the remaining two cases were reconciled through subsequent discussion. Because the measure of task complexity is continuous and is interacted with other variables, I have centered it so that its mean is zero [1].

3.4.3. Implementation duration. This is measured as the duration of the implementation of each Practice
within the eSCM-SP, log-transformed to mitigate skew. This variable is also centered so that its mean is zero, since it is continuous and interacted with other variables. I use implementation duration instead of implementation cost or effort for three reasons. First, given a relatively fixed supply of resources, duration is a close facsimile for implementation effort and cost [38]. Second, duration indicates the total amount of time that the organization must have personnel and other resources participating in the project. This is particularly important during the implementation of process improvements due to the potential for disruption in the daily activities of organizational members. For example, while the implementation project is ongoing, new client decisions will need to be made with two sets of processes in mind. In addition, some work may need to be done twice – for example, reporting or documentation of decisions using two different methods or templates. Finally, in my data duration is the cleanest and most straightforward measure of implementation thoroughness. Using an effort variable such as full-time equivalents (FTE’s) would be feasible but would require me to make assumptions about work schedules and the allocation of Practices among team members.

3.4.4. Control variables. I include a time trend variable (monthcounter) to control for performance improvements over time that may be independent of process standardization. This variable is set to “1” for the first month in the observation period and is increased by 1 in each subsequent month.

3.6. Statistical model

The data have been constructed in panel form with the individual performance outcome as the panel identifier \( i \) and the calendar month as the time identifier \( t \). Both a Hausman model comparison test (\( \chi^2 = 2683.02, p < 0.000 \)) and a test of the residuals (\( F_{1,413} = 42.52, p < 0.000 \)) indicated the presence of autocorrelation in the data [14]. An additional Hausman test confirmed the presence of heteroskedasticity (\( \chi^2 = 245.84, p < 0.000 \)) in the data. Therefore, I used a panel-corrected feasible generalized least squares (GLS) model for the analysis. This type of specification is appropriate for data with a large number of panel groups, and allows me to correct for both autocorrelation and heteroskedasticity across panel groups [4]. The autocorrelation coefficient in the final model was 0.894. The fully specified model is as follows, where \( i \) indicates the eSCM Practice and \( t \) is the month:

\[
performance_{it} = \beta_1 standardization_{it} + \beta_2 monthcounter_{it} + \beta_3 duration_{it} + \beta_4 complexity_{it} + \beta_5 (standardization_{it} \times duration_{it}) + \beta_6 (standardization_{it} \times complexity_{it}) + \beta_7 (duration_{it} \times complexity_{it}) + \varepsilon_{it}
\]

4. Results

Coefficients and standard errors for the GLS regressions are reported in Table 1. The main set of results is displayed in Table 1, Column 3.

<table>
<thead>
<tr>
<th></th>
<th>(1) Performance</th>
<th>(2) Performance</th>
<th>(3) Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>standardization</td>
<td>0.124</td>
<td>-1.185</td>
<td>-0.465</td>
</tr>
<tr>
<td>(0.109)**</td>
<td>(0.205)**</td>
<td>(0.228)*</td>
<td></td>
</tr>
<tr>
<td>monthcounter</td>
<td>-0.021</td>
<td>-0.021</td>
<td>-0.019</td>
</tr>
<tr>
<td>(0.007)**</td>
<td>(0.008)**</td>
<td>(0.007)**</td>
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</tr>
<tr>
<td>duration</td>
<td>23.366</td>
<td>10.862</td>
<td>15.767</td>
</tr>
<tr>
<td>(1.119)**</td>
<td>(1.626)**</td>
<td>(2.090)**</td>
<td></td>
</tr>
<tr>
<td>complexity</td>
<td>-0.023</td>
<td>-0.033</td>
<td>-0.150</td>
</tr>
<tr>
<td>(0.006)**</td>
<td>(0.014)*</td>
<td>(0.031)**</td>
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<tr>
<td>standardization x duration</td>
<td>17.799</td>
<td>8.722</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.120)**</td>
<td>(2.521)**</td>
<td></td>
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<tr>
<td>standardization x complexity</td>
<td>0.016</td>
<td>0.250</td>
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<tr>
<td></td>
<td>(0.016)</td>
<td>(0.038)**</td>
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<tr>
<td>duration x complexity</td>
<td>1.597</td>
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<tr>
<td></td>
<td>(0.377)**</td>
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<tr>
<td>standardization x duration x complexity</td>
<td>-3.152</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(0.454)**</td>
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<tr>
<td>Constant</td>
<td>98.014</td>
<td>98.927</td>
<td>98.456</td>
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<tr>
<td>(0.114)**</td>
<td>(0.152)**</td>
<td>(0.181)**</td>
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<tr>
<td>Observations</td>
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<td>8088</td>
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<tr>
<td># of panels</td>
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<td>419</td>
</tr>
<tr>
<td>Chi-squared</td>
<td>466.83</td>
<td>509.59</td>
<td>528.94</td>
</tr>
</tbody>
</table>

The interaction between standardization and duration is positive and significant (\( \beta_5 = 8.722; p < 0.000 \)), fully supporting hypothesis 1. This result suggests that after standardization has occurred, each standard deviation in implementation duration results in a roughly 1.53% increase in performance. Although this average effect may appear small it is in fact a materially significant improvement, since the predicted baseline performance level across outcomes is 98.46%. Allowing for longer durations in the implementation stage has enabled the organization to realize greater performance improvements in the utilization stage. Figure 3 illustrates this pattern further. In this figure, the “dur low” line indicates performance on outcomes that are tied to eSCM Practices with low implementation durations (one standard deviation below the mean). For these outcomes, performance is
actually worse after standardization occurs. The “dur high” line indicates performance on outcomes tied to high implementation durations (one standard deviation above the mean). Performance on these outcomes is slightly higher post-standardization. Taken together, these lines may indicate that process implementations with low durations actually decrease performance, while process implementations with higher durations increase performance significantly.

Figure 3: Relationship between Duration and Standardization

The interaction between standardization and complexity is also positive and significant ($\beta_6 = 0.250; p < 0.000$), fully supporting hypothesis 2. This result indicates that standardization has a higher performance impact on complex tasks than on simple tasks. Figure 4 illustrates this effect, where “comp low” indicates task complexity taken at one standard deviation below the mean and “comp high” indicates task complexity taken at one standard deviation above the mean. Prior to standardization, performance on complex tasks is significantly lower than performance on simple tasks. After standardization, performance on complex tasks has increased significantly more than performance on simple tasks, to the extent that performance on complex tasks is actually higher. This may indicate that complex tasks have a higher number of routines or exceptions, while standardized processes help lower the negative effect of these exceptions on performance.

To test hypothesis 3, I examine the coefficient on the three-way interaction between standardization, complexity, and duration. This coefficient is negative and significant, so hypothesis 3 is disconfirmed ($\beta_8 = -3.152; p < 0.000$). This result indicates that once standardization occurs, complex tasks experience a lower performance improvement after longer implementations than after shorter implementations. To better understand this outcome, it is necessary to examine the coefficients on the other interaction variables. The interactions standardization × complexity, standardization × duration, and duration × complexity are all positive and statistically significant. This suggests that only the unique combination of a high implementation duration, high complexity, and standardization is associated with lower performance. Figure 5 shows this graphically. Performance on complex tasks improves significantly following implementations with high duration and decreases significantly following implementations with low duration. Further, the difference in performance improvement between shorter and longer implementations is less for complex tasks than it is for simple ones. Figure 5 suggests that while complex tasks either benefit or experience small decreases in performance from standardization, simple tasks only benefit from standardization if they have sufficiently thorough implementations; otherwise, performance suffers significantly. Simple tasks are expected to have higher performance in general, and also expected to be less likely to encounter problems and exceptions. This finding may suggest that tasks that are less likely to require a standardized process are more likely to be harmed by a standardized process unless it is implemented thoroughly.

Figure 4: Relationship between task complexity and standardization

5. Discussion

This study has important implications for scholars who examine the implementation of process standards and the resulting performance improvements, particularly in the services setting. First, prior qualitative and empirical studies have separately examined characteristics of process implementation and the implications of new processes on performance [28,41]. In contrast, this study demonstrates a direct link between implementation times and resulting
performance improvements. Because implementation and the realization of performance improvement are salient stages in the adoption of technical and process innovations [11, 17], demonstrating a link between these stages represents a potentially significant theoretical contribution. My study also contributes to the process standardization literature by incorporating the effect of task complexity, a salient characteristic of work in the services setting. Finally, prior research has shown mixed performance results following process standardization; and to the best of my knowledge, no empirical studies have examined the adoption of a comprehensive process standardization framework in the context of BPO services.

The study’s primary finding is that by itself, process standardization does not result in a significant improvement in service delivery performance; in fact, it is associated with a slight decrease in performance. This finding is congruent with prior studies that have suggested that long-term performance gains as a result of standardization may be preceded by short-term losses [8]. Instead, the effect of standardization on performance is dominated by the effect of implementation thoroughness. Figure 3 demonstrates that post-standardization, tasks associated with longer durations perform significantly better than those associated with shorter durations. Apart from the interaction between duration and standardization, duration is also significantly related to performance both prior to and after standardization ($\beta_3 = 15.767$; $p < 0.000$). This may suggest that the organization viewed certain tasks and outcomes as particularly important, and allocated more implementation time to the accompanying processes to ensure a high level of performance. For example, adherence to service level agreements (SLA’s) is paramount for maintaining customer satisfaction in the services setting and must be maintained no matter what the cost to the service provider. Performance on tasks related to SLA’s would therefore need to be consistently high both prior to and after standardization.

Figure 4 shows that prior to standardization task complexity is associated with generally lower performance, which by itself is not surprising. However, complex tasks are also associated with the greatest level of performance improvement after standardization occurs. This finding persists whether implementation duration is evaluated at its mean (as in Figure 4) or evaluated below its mean (as in Figure 5). The robustness of this result suggests that process standardization is effective particularly at reducing the negative effects of task complexity, in spite of the fact that standardization could conceivably impose some procedural rigidity on task execution. From a managerial perspective, this finding suggests that organizations implementing process standardization frameworks should place additional emphasis on adapting processes to meet the needs of complex tasks. In addition, organizations that are characterized by complexity in tasks may be able to realize the greatest improvements from process standardization. While services firms have been slower to adopt standardization frameworks that manufacturing companies, their high levels of task complexity may make them appropriate candidates for process standardization [9].

6. Conclusion

The results provide an interesting comparison between the effects of implementation duration and task complexity, and their effects on performance post-standardization. Figure 5 shows that after higher implementation durations, performance generally improves for simple tasks and decreases slightly for complex tasks. Likewise, complex tasks improve post-standardization after lower implementation durations but not after higher durations. Although hypothesis 3 was rejected – complex tasks improve to a greater extent after short implementations than longer ones – Figure 5 clearly illustrates that both complexity and implementation duration may be associated with increased performance post-standardization. The rejection of hypothesis 3 is counter-intuitive, and may be due to the fact that tasks associated with higher implementation durations have a higher performance baseline pre-standardization; in other words, they likely have less room to improve. This finding provides an opportunity for future research.

This study has examined the effects of process standardization on performance in offshore service delivery, including the moderating effects of implementation duration and task complexity. I find
that longer, more thorough process implementations are associated with higher increases in performance. In addition, performance on complex tasks improves more after process standardization than performance on simple tasks. Counter to expectations, complex tasks show greater performance improvement post-standardization after low implementation durations than after high implementation durations. This may be attributable to a higher baseline performance level for these tasks prior to standardization.

This study contributes to existing literature in three ways. First, I advance the understanding of when and how process standardization is most likely to generate performance improvement. Specifically, I examine the impact of process standardization, implementation duration, and task complexity on multiple performance outcomes. Second, I extend theory on the adoption of process innovations by examining the relationship between two important stages – implementation of processes and their utilization in achieving performance gains. Finally, I quantify the benefits of process standardization frameworks in a setting that has not been extensively studied in the literature: the delivery of IT and business services.

This study focuses on process standardization in the context of IT and business services. I do not make the assertion that process standardization is appropriate, or will lead to performance improvement, for all service tasks. For example, some have argued that process standardization may be unrelated to, or even inhibit, performance on creative tasks such as research and development [37]. In contrast, this study examines the delivery of more repetitive “back-office” services which should be more amenable to process standardization. The dataset that I examine covers over 400 different outcomes across a number of service lines and organizational tasks that are used by many large service providers. Therefore, the results should be generalizable to a number of organizations that provide IT and business services.

7. References


