International Scholars Journals

Global Journal of Business Management ISSN 6731-4538 Vol. 4 (11), pp. 001-013, November, 2010. Available online at www.internationalscholarsjournals.org © International Scholars Journals



*Full Length Research Paper*

# Development and testing of a business process orientation model to improve employee and organizational performance

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Accepted 29 October, 2010

**This study developed and tested a business process orientation model to improve employee and organizational performance. The research team developed the model on the basis of theoretical background. Factor analysis and structural equation modeling techniques were used to test the model. The research team used a structured questionnaire to collect data from employees of private sector banks in Pakistan using the stratified sampling method. The sample size of the study was 350, with a response rate of 17%. The research team used SPSS 15.0 to check the one-to-one relationship between the variables in the model using the simple linear regression method. Furthermore, the research team used virtual partial least squares (VPLS) 1.04 to test the model on a single run. The findings validated the proposed relationships between the variables in the model. The conclusion of the study was that business process orientation had a significant impact on employee and organizational performance. Thus, a process orientation in business, eliminating inefficiencies and supplementing innovation, was strongly recommended.**

**Key words:** Business process orientation, business process innovation, business process efficiency, employee performance, organizational performance.

## INTRODUCTION

In recent organizational developments, a paradigm shift toward a process focus meant to enhance competitive-ness and performance has been visible. The traditional functional approach to management does not prioritize efficiency. This bureaucratic style gives privileges to the status quo over innovation. It has therefore become strategically important for businesses to be process-oriented to cope with intense competition and to better serve an ever-demanding pool of customers.

Researchers have explored various modes of impro-ving business processes within an organization, such as business process re- engineering, business process management, business process analysis, business pro-cess efficiency, business process mapping and business process orientation (Fields, 2007; Lockamy and McCormack, 2004; McCormack and Rauseo, 2005; McCormack, 1999; Hammer and Champy, 1993; Tenner and Detoro, 2000).

These strategic modes are equally essential to businesses in developing countries. In Pakistan, the banking sector has made revolutionary changes to improve performance during the last decade. Private sector banks in particular have shown radical improve-ments in enhancing performance and serving customers. The computerization and automation of banking processes greatly enhances customer service. Most of the public sector organizations in Pakistan, including banking enterprises, retain a traditional functional management style and thereby are not fully enjoying the benefits of process orientation.

The literature lacks empirical studies on business process orientation and their impact on performance (McCormack, 1999; Skringar et al., 2008), especially in

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developing countries like Pakistan. This paper develops and tests the business process orientation model to improve individual and organizational performance in the banking industry in Pakistan.

## LITERATURE REVIEW

Business processes are comprised of interconnected activities that transform particular inputs into customer-focused outputs working across departments (Schutta, 2006; Hammer and Champy, 1993; McCormack and Johnson, 2001; Sethi and King, 2003; Field, 2007). This study focuses on three performance parameters of business processes: orientation, efficiency and innovation.

### Business process orientation (BPO)

The business process orientation approach uses a process lens to perform activities within the organization instead of focusing on functional hierarchies, structures and divisions (McCormack and Rauseo, 2005; McCormack, 1999, 2001a; McCormack and Johnson, 2001; Davenport, 1993; Nenadal, 2008).

The process orientation emphasizes delivering value to customers by streamlining and accelerating work patterns (Schutta, 2006; McCormack and Johnson, 2001; Davenport, 1993). Interdepartmental coordination and technology play critical roles in implementing the process orientation approach in an organization (McCormack and Johnson, 2001). These elements help to improve both efficiency and effective-ness by reducing the cost of doing business and enhancing customer satisfaction (Schutta, 2006; Garvin, 1995).

The business process orientation consists of five important concepts and variables: the process view, process structures, process jobs, process management and measurement systems and process values and beliefs (McCormack, 1999; Skrinjar et al., 2008; Sussan and Johnson, 2003). The process view accentuates process thinking and process terminologies in the performance of activities in an organization (Davenport, 1993a; McCormack, 1999; Tenner and Detoro, 2000; Skrinjar et al., 2008). Process structures are the structural elements, boundaries and activities of the business process (Davenport, 1993a; McCormack and Rauseo, 2005; McCormack and Johnson, 2001). Process jobs are organizational jobs understood in terms of business processes that recognize the process owners who are responsible for them (Skrinjar et al., 2008; McCormack; 1999; McCormack; 2001b; Davenport, 1993a; McCormack and Johnson, 2001). Process values and beliefs represent a process-oriented organizational culture that emphasizes customer orientation, teamwork, empowerment, cross-functional coordination and continuous improvement (Schutta, 2006; McCormack, 1999; McCormack and Johnson, 2001). Process management and measurement systems describe methods of measuring process performance and rewards for process improvement (McCormack, 1999; McCormack; 2001b; Davenport, 1993a; McCormack and Johnson, 2001; Skrinjar et al., 2008).

### Business process innovation (BPI)

Business process innovation encourages new ideas and ways of doing work to achieve business objectives efficiently (Davenport, 1993a, b). It encourages dynamism focusing on how different business processes can be performed to achieve a desired objective (Wang and Ahmed, 2003).

The traditional and routine way of doing work creates loopholes and lock-ins in systems, especially in a dynamic organizational environment. A continuous process change and innovation are imperative to challenge such ambiguities in the organization (Sethi and King, 2003). Technology and empowerment play a critical role in business process innovation (Davenport, 1993b; Talwar, 1993; Markus and Benjamin, 1997).

### Business process efficiency (BPE)

Business process efficiency defines the level of performance of business processes. The efficiency of business processes is generally measured using various parameters, such as cost, time, the extent of electronic work over manual processing and the number of people and departments involved in process execution (Arveson, 1999; Hammer and Champy, 1993; Tenner and Detoro, 2000; Stalk and Hout, 1990; Nenadal, 2008; Cook; 1996). Information technology plays a key role in improving business process efficiency (Venkatraman, 1994; Davenport, 1993a; Sethi and King, 2003; Keen, 1991; Furey, 1993; Hammer, 1990; Talwar, 1993).

### Organizational performance (OP)

Organizational performance refers to the degree to which organizational objectives are met (Lin et al., 2008). This paper measures organizational performance using parameters such as competitiveness, innovation and learning. Organizational performance can be enhanced by streamlining the organizational processes and culture to serve customers (Matin et al., 2009).

Herciu and Ogrean (2008), Singh et al. (2008) and Lopez et al. (2005) describe competitiveness as a comparison between a firm's performance and standard performance, specifically standard performance in the industry, in terms of quality, flexibility, delivery, innovation, cost and learning.

Innovation refers to the support and employment of

new ideas, formally as well as informally, used to perform work more productively and meet the organizational objectives more efficiently and effectively (Pangarkar and Kirkwood, 2008; Zolfagharian and Paswan, 2008), outcomes that are strategically vital in a competitive and dynamic environment (Deshpande et al., 1993; Monge et al., 1992).

Learning is also an important element of organizational performance (Lopez et al., 2005; Pangarkar and Kirkwood, 2008; Lin et al., 2008) because it promotes innovation and creativity in an organization (Pangarkar and Kirkwood, 2008). Learning is the process of creating, attaining and disseminating knowledge- based information to improve organizational capabilities (Jimenez et al., 2008).

### Employee performance (EP)

Employee performance is vital for business success. The literature identifies factors such as job security, workload, absenteeism, retention and on- and off-the-job training as affecting employee performance (Dibben and James, 2007; Dyer and Reeves, 1994). Employee turnover, satisfaction, commitment, esprit de corps and citizenship are some other determinants of employee performance (Dyer and Reeves, 1994; Jaworski and Kohli, 1993; Tesluk, 1999; Dyer and Reeves, 1994; Baptise, 2008).

This study uses commitment and esprit de corps as measures of employee performance. Commitment refers to the degree to which employees sacrifice for, identify with and involve themselves in achieving organizational objectives (Lancaster and Vender, 2004; Jaworski and Kohli, 1993). Employee attachment and loyalty are other measures of employee commitment (Meyer and Allen, 1991; Ogba, 2008). Esprit de corps relates to teamwork and cohesion in the context of an organization (Jaworski and Kohli, 1993; Al-Rawi, 2008). It signifies employee attachment to achieve common objectives (Robins and DeCenzo, 2001) . Effective organizational leadership and behavior create pride, commitment and dedication in employees, which are important determinants of esprit de corps (Al-Rawi, 2008; Ogba, 2008; Robins and DeCenzo, 2001; Houldsworth and Machin, 2008).

## THEORETICAL SUPPORT OF BUSINESS PROCESS ORIENTATION MODEL

This section describes the theoretical support for the interrelationships among the variables in the proposed model.

### Business process orientation and business process efficiency

Business process orientation has become a core function of every organization as they strive to cope with competitive pressure by enhancing the efficiency of business processes (Skrinjar et al., 2008). Business process orientation helps to improve business processes by reducing cost (Skrinjar et al., 2008; Tenner and Detoro, 2000; Zaheer et al., 2008a; Hammer and Champy, 1993; Harrison and Pratt, 1993 ), improving process execution time (Skrinjar et al., 2008; Tenner and Detoro, 2000; Zaheer et al., 2008a; Hammer and Champy, 1993; Ginn and Barlog, 1994; Harrington, 1991; Sethi and King, 2003; Harrison and Pratt, 1993) and eliminating bureaucratic activities such as excessive paperwork, signoffs and duplications (Zaheer et al., 2008a,b; Stalk and Hout, 1990; Arveson, 1999; Cook, 1996; Keen, 1991).

### Business process orientation and business process innovation

The effectiveness of business process orientation helps to create innovation in key processes. It envisions the new work strategies in the organization (Davenport, 1993). Business process orientation assists in the process-based allocation of resources, which is critical in developing new business work models (McCormack and Johnson, 2001). The success of business process orientation depends on process teams' innovative and creative abilities (Davenport, 1993; Harrington, 1991). Business process orientation introduces process-based structural change into an organization, which in turn leads to creative ways of achieving organizational objectives (Harrington, 1991).

The efficient management of business processes is vital in a dynamic and competitive environment. Business process orientation and management foster a process culture based on innovation and performance (Singh et al., 2008).

### Business process orientation and organizational performance

The literature indicates the positive impact of business process orientation on organizational performance (Fitzgerald and Murphy, 1996; Kaplan and Norton, 1996; Mackay et al., 2008; McCormack and Johnson, 2001; Skrinjar et al., 2008).

Business process orientation helps to improve both the financial and the non-financial performance of an organization (Skrinjar et al., 2008). Investment in business processes creates competitive advantage for the organization and brings about significant improvements to the system (Kaplan and Norton, 1996; McCormack and Johnson, 2001).

Business process orientation focuses on the efficient transformation of input into output to meet customer requirements. In this way, it helps to achieve overall organizational goals by attaining efficiency as well as

efficacy (Fitzgerald and Murphy, 1996; Mackay et al., 2008).

### Business process orientation and employee performance

Business process orientation has a significant impact on employee performance (Sethi and King, 2003; Skrinjar et al., 2008; Uusitalo et al., 2008; Martenette et al., 2003). Skrinjar et al. (2008) examined the relationship between business process orientation and non-financial performance measures such as employee satisfaction, learning, commitment, absenteeism and working conditions. The study revealed a positive relationship between business process orientation and non-financial performance measures.

Business process orientation demands better employee performance. The quality and efficiency of business processes help to boost the performance of employees and provide better service to customers (Martenette et al., 2003; Uusitalo et al., 2008).

Business process orientation is a socio-technical approach that brings about behavioral improvement as well as material change (Sethi and King, 2003). It helps to mold employee behavior and attitude via self-management (Sethi and King, 2003; Uusitalo et al., 2008).

### Business process innovation and organizational performance

There is a positive impact of business process innovation on organizational performance (Deshpande et al., 1993; Lin and Chen, 2007; Han et al., 1998; Davenport, 1993; Pinho, 2008; Carmon and Jose, 2008; Pitt and Tucker, 2008).

Lin and Chen (2007) and Han et al. (1998) examine the relationship between innovation and business performance. The authors conclude that there is a positive impact of administrative and technological innovation on business performance.

Business process innovation helps to improve operational efficiency. Process change initiatives bring about business efficiency by reducing time and cost. Novel ideas about doing business may be expensive in the short run, but they have a long-term impact on performance measures (Davenport, 1993).

Pinho (2008) examined different types of innovation, such as process innovation, product innovation and technology innovation, to reveal their impact on performance. An analysis of small and medium-sized enterprises revealed a positive effect of innovation on organizational performance.

Roberts and Amit (1995) analyzed the impact of product and process innovation on business performance in Australian retail banks. Both types of innovation help to build competitive advantage for the business, which in turn, leads to better performance. Banks with a high level of innovation showed better performance than banks with relatively low level of innovation.

Carmon and Jose (2008) observed the mediating effect of technological and administrative innovation between market orientation and business performance. An empirical investigation of cultural organizations revealed a significant mediating role for process innovation.

### Business process efficiency and employee performance

The literature shows a significant impact of business process efficiency on employee performance and proficiency (Certo, 2001; Hammer and Champy, 1993; Luthans, 1997; Pangarkar and Kirkwood, 2008; Roy, 2005).

Business processes are the reason for the existence of any business; they encompass what it produces and delivers. It is absolutely necessary for every organization to identify key business processes and excel at them to achieve strategic goals and long-term viability (Pangarkar and Kirkwood, 2008). The efficiency of business processes has a significant, positive impact on quality and productivity (Hammer and Champy, 1993).

Bureaucratic business processes, which involve a lack of empowerment, an autocratic style, centralized decision-making, no performance feedback, excessive approvals/signoffs and delaying tactics, are a source of stress on organizations that impedes the performance level of employees (Luthans, 1997).

Today, businesses tend to build a supportive organizational climate with more autonomy and flexibility, mainly based on performance instead of on rules, to improve employee performance. Organizations that still employ a bureaucratic management style and rigid structure face job stress, which negatively impacts employee performance (Certo, 2001).

## PROPOSED MODEL AND HYPOTHESIS

### Proposed model

The following conceptual model is proposed on the basis of the literature review and theoretical background (Figure 1).

McCormack (1999) developed the original model of business process orientation to examine its impact on performance through interdepartmental connectedness and conflict. The research team introduced the important consequences of business process orientation, such as business process efficiency and business process innovation, to develop and test the modified form of the

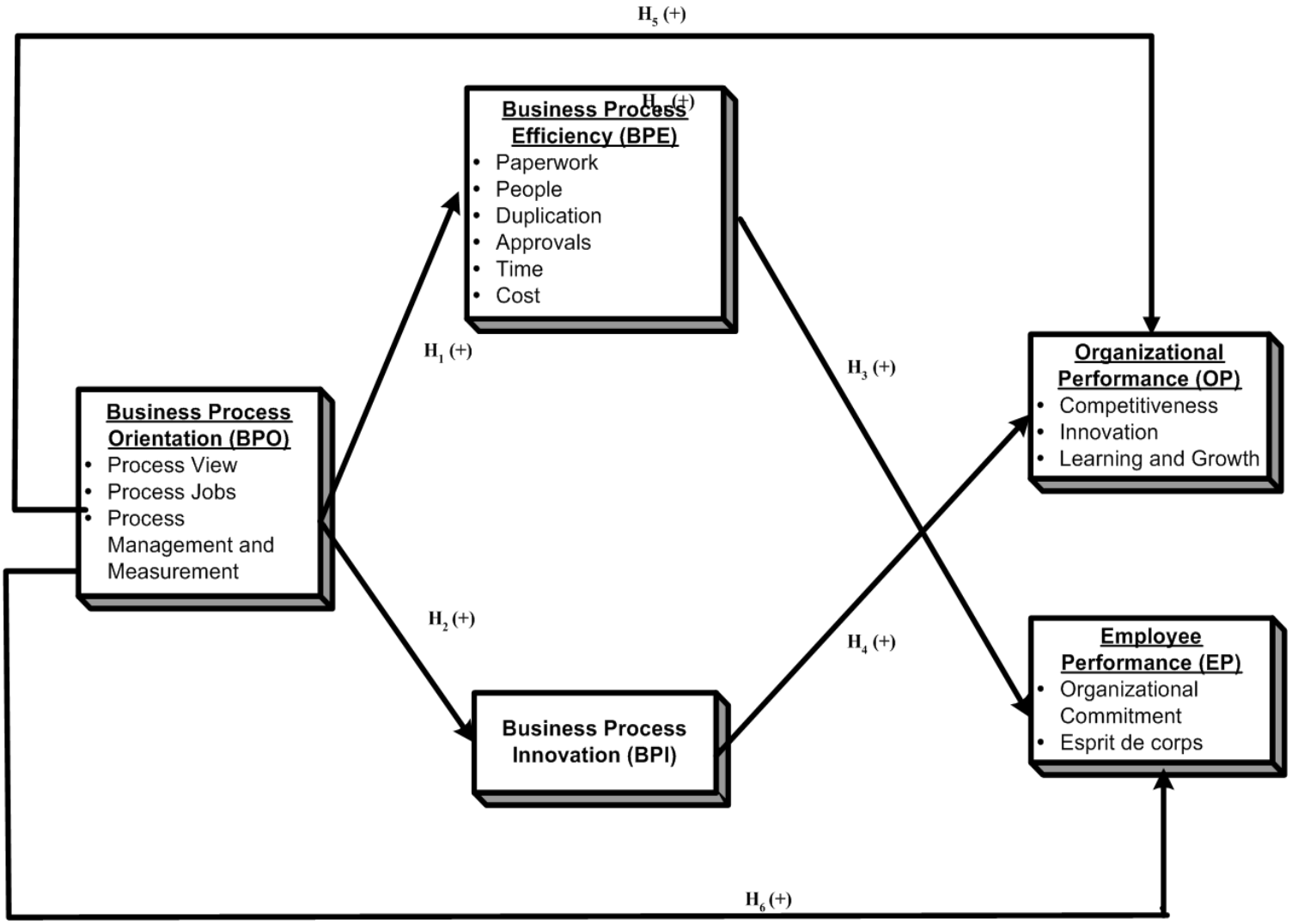


**Figure 1.** Conceptual model and path diagram.

business process orientation model.

## Hypotheses

The following hypotheses have been developed from the literature review:

$H_1$: Business process orientation has a significant positive impact on business process efficiency.

$H_2$: Business process orientation has a significant positive impact on business process innovation.

$H_3$: Business process efficiency has a significant positive impact on employee performance.

$H_4$: Business process innovation has a significant positive impact on organizational performance.

$H_5$: Business process orientation has a significant positive impact on organizational performance.

$H_6$: Business process orientation has a significant positive impact on employee performance.

## METHODOLOGY

This study is descriptive in nature and is conducted to test the hypotheses based on the business process orientation model.

### Instrument and Measures

The research team used a survey questionnaire based on scale items that were developed, validated and tested in past studies. The research team conducted informal interviews with a panel of experts and bank employees to incorporate expert opinion into the development of the questionnaire. Accordingly, a few changes were incorporated into the item wording and the selection of items to make the concepts expressed in the questionnaire clear and comprehensible to the respondents.

The survey questionnaire consisted of six parts. First, it measured the demographics of the respondents. Second, it measured the business process orientation. To measure the

**Table 1.** Demographic and organizational profile of respondents.

| Variable | Category | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 218 | 69.2 |
| | Female | 97 | 30.8 |
| Age (years) | 25 or below | 109 | 34.6 |
| | 26 - 35 | 109 | 40.6 |
| | 36 - 45 | 39 | 12.4 |
| | 46 or above | 39 | 12.4 |
| Education | Undergraduate | 4 | 1.3 |
| | Graduate | 79 | 25.1 |
| | Masters | 198 | 62.9 |
| | M.Phil | 26 | 8.3 |
| | PhD | 5 | 1.6 |
| | Other | 3 | 1.0 |
| Job experience (years) | 1 - 5 | 187 | 59.4 |
| | 6 - 10 | 55 | 17.5 |
| | 11 - 15 | 31 | 9.8 |
| | 16 or above | 42 | 13.3 |
| Position/Designation | Executive | 24 | 7.6 |
| | Officer | 291 | 92.4 |

Source: Field data.

business process orientation, the research team adapted the 15-item scale developed and tested by McCormack (1999). Three dimensions of business process orientation: the process view, process jobs and process management and measurement systems were measured using five items, three items and seven items, respectively. Third, it measured business process innovation using a 3-item scale developed by Das and Joshi (2007). Fourth, it measured business process efficiency using a 21-item scale that was also used and validated by Zaheer et al. (2008) . Seven dimensions of business process efficiency: paperwork, people, duplication, approvals, time, cost and IT usage were measured in separate parts. The first part consisted of three items and measured 'paperwork'. The second part, consisting of two items, measured 'people'. The third part, consisting three items, measured 'duplication'. The fourth part consisted of three items and measured 'approvals'. The fifth part, consisting of four items, measured 'time'. The sixth part, consisting of three items, measured 'cost'. The last part, consisting of three items, measured IT usage. Fifth, it measured employee performance using a 9-item scale used by Jaworski and Kohli (1993). Two separate parts, consisting of three items and six items, respectively, measured the two dimensions of employee performance, organizational commitment and esprit de corps. Finally, it then measures organizational performance using a 9-item scale. This scale consisted of three parts. The first part, with three items, measured 'competitiveness'. The second part, with four items, measured 'innovation'. The last part, with three items, measured 'learning and growth'. The research team coded the items of each construct either positively or negatively to create a consistent framework.

The researcher used visual partial least squares (VPLS) software 1.02 to compute the composite reliability and average variance extracted. The statistics either met or were very close to the prescribed criteria.

**Sample**

Based on the recent developments and reengineering of business processes, the research team selected private sector domestic banks as the population of this study. Out of 26 private sector banks in Pakistan, the research team chose 5 banks to approach, including 2 privatized banks and 3 private banks as categorized by the State Bank of Pakistan (2007) to distribute 1,868 questionnaires among their employees all over Pakistan using the stratified random sampling method. With a response rate of 17%, the research team received 315 valid responses, which became the sample size of this study. A sample of 315 met the minimum sample size criteria of 100 for a factor analysis, 10 times the number of the variable of study for a regression analysis and 10 times the number of items in the construct for partial least squares analysis (Gefen et al., 2000; Hair et al., 1992; Roscoe, 1975 ).

**Procedure**

The research team used Structural Equation Modeling to test the hypothesized relationship between the variables in the business process orientation model. Based on past research (Sajjad, 2008; Gefen et al., 2000), this study used the partial least squares (PLS) method to test the model. PLS is a second-generation SEM method used to test the model in a single run (Gefen et al., 2000).

## ANALYSIS AND RESULTS

Table 1 reveals the demographic profile of the respondents.

**Table 2.** Reliability statistics of scales.

| Constructs/Variables | Number of items | Cronbach's alpha coefficient | Guttman split-half coefficient |
|---|---|---|---|
| **Business process orientation** | | | |
| Process view | 5 | 0.74 | 0.67 |
| Process jobs | 3 | 0.64 | 0.58 |
| Process management and measurement systems | 7 | 0.81 | 0.78 |
| Process Innovation | 3 | 0.73 | 0.60 |
| **Business process efficiency** | | | |
| Paperwork | 3 | 0.76 | 0.67 |
| People | 2 | 0.62 | 0.62 |
| Duplication | 3 | 0.77 | 0.68 |
| Approvals | 3 | 0.76 | 0.70 |
| Time | 3 | 0.74 | 0.65 |
| Cost | 3 | 0.75 | 0.66 |
| Information systems | 3 | 0.82 | 0.72 |
| **Employee performance** | | | |
| Organizational commitment | 3 | 0.81 | 0.68 |
| Esprit de Corps | 6 | 0.69 | 0.67 |
| **Organizational performance** | | | |
| Competitiveness | 3 | 0.77 | 0.71 |
| Innovation | 4 | 0.90 | 0.90 |
| Learning and Growth | 3 | 0.81 | 0.70 |

Source: Field data.

## Reliability and validity

The research team computed Cronbach's alpha and Guttman split-half coefficients to assess the reliability of the scale (Decoster, 2005) as shown in Table 2.

The values for both the coefficients were above or near to the minimum acceptable value of 0.6 in all cases, which confirms the reliability of the scale.

The research team extracted the dimensions of variables from past studies and finalized the instrument by incorporating expert opinion to ensure the face and content validity of the scale (Kumar, 2007). To confirm construct validity, the researcher compared the results with those of past literature. Furthermore, the research team used factor analysis to confirm the unifactorial variables.

The research team examined the symmetry of the sample distribution by computing skewness and kurtosis statistics. All of the values lie well within the recommended range of prescribed limits of ±2, thus ensuring the normality of the data. Table 3 presents the univariate statistics for the shape of the distribution.

To check the assumptions regarding factor analysis, the research team analyzed the inter-variable correlation pattern. All variables were reasonably correlated that is greater than 0.3 and less than 0.8 (Field, 2005). Furthermore, the research team analyzed the data for multicollinearity and singularity. The reasonable value of the determinants of the correlation matrices, which were greater than 0.00001 for the different variables, confirmed that the data did not suffer from multicollinearity or singularity (Field, 2005).

To further analyze the preconditions of factor analysis, the research team computed measures of sampling adequacy (MSA), performed the Kaiser-Meyer-Olkin (KMO) test and completed Bartlett's Test of Sphericity. The measure of sampling adequacy was greater than 0.5 for individual variables and for the set of variables. The Kaiser-Meyer-Olkin measure was greater than 0.5 for all variables. The value of Bartlett's Test of Sphericity was significant (less than 0.05) for all variables. All these values ranged within the recommended limits (Hutcheson and Sofroniou, 1999; Kaiser, 1974; Field, 2005).

After checking the assumptions of the factor analysis, the research team conducted principal component factor analysis to obtain a factor solution. An iterative process method was used that involved repeating the factor analysis process to achieve the best factor solution. As a result, a total of 36 items were extracted out of 57 items.

In order to confirm convergent and discriminate validity,

**Table 3.** Univariate statistic for shape of distribution.

| Constructs/Variables | Skewness | Kurtosis |
|---|---|---|
| **Business Process Orientation** | | |
| Process View | -0.474 | -0.058 |
| Process Jobs | -0.557 | 0.267 |
| Process Management and Measurement Systems | -0.512 | 0.082 |
| Process Innovation | -0.623 | -0.121 |
| **Business Process Efficiency** | | |
| Paperwork | -0.124 | -0.662 |
| People | -0.261 | -0.772 |
| Duplication | 0.014 | -0.743 |
| Approvals | -0.310 | -0.584 |
| Time | -0.009 | -0.665 |
| Cost | -0.208 | -0.604 |
| Information Systems | -0.738 | 0.031 |
| **Employee Performance** | | |
| Organizational Commitment | -0.477 | -0.355 |
| Esprit de Corps | -0.413 | -0.701 |
| **Organizational Performance** | | |
| Competitiveness | -0.591 | -0.076 |
| Innovation | -0.599 | -0.396 |
| Learning and Growth | -0.395 | -0.542 |

Source: Field data.

the research team computed composite reliability and average variance extracted (AVE) for the revised variables by using visual partial least square (VPLS) version 1.04. All of the revised variables exhibited either greater than minimum or nearly equal to minimum acceptable composite reliability of 0.6 and AVE of 0.4, which confirmed the convergent reliability of the variables (Diamantopoulos and Siguaw, 2000. The pattern of the factor loading of each item as compared to the cross-loadings of other variables' items and the comparison between the square root of the AVE and inter- variable correlations, ensured the discriminate validity of the variables (Vlachos et al., 2008; Bhattacherjee and Sanford, 2006; Pavlou and Gefen, 2004).

### Descriptive analysis

Figure 2 presents the mean values of the variables. The mean value of all the variables is greater than 3.5 except for business process efficiency, which has the lowest mean of 2.82. The higher mean value of BPO, BPI, OP and EP indicates the better implementation of the business process orientation concept by the banks, which yields innovation and better performance. The lower value of BPE signifies that the banks still need to improve on its efficiency of business processes.

## TESTING THE MODEL OF EMPLOYEE AND ORGANIZATIONAL PERFORMANCE

The research team used both linear regression and the PLS methods to test the business process orientation model. The research team checked the assumptions of normal distribution, the linear relationship of the variables and the homogeneity of variances. The main objective of the study was to test the proposed model of employee and organizational performance. Both the linear regression and the PLS techniques were used to test the model, as explained in the subsequent sections.

### Linear regression method

The research team used the linear regression method to test the hypothesized relationships between the constructs of the model. This approach is consistent with past research (Sajjad, 2008; Lee et al., 2003; Nilson, 2005; Morris et al., 2005) . The following assumptions of the linear regression were checked using both descriptive statistics and graphical methods so that the results of re-gression can be confidently interpreted. 1) Normal distribution of errors. 2) Linear relationship of variables. 3) Homogeneity of variance (Homoskasidicity)

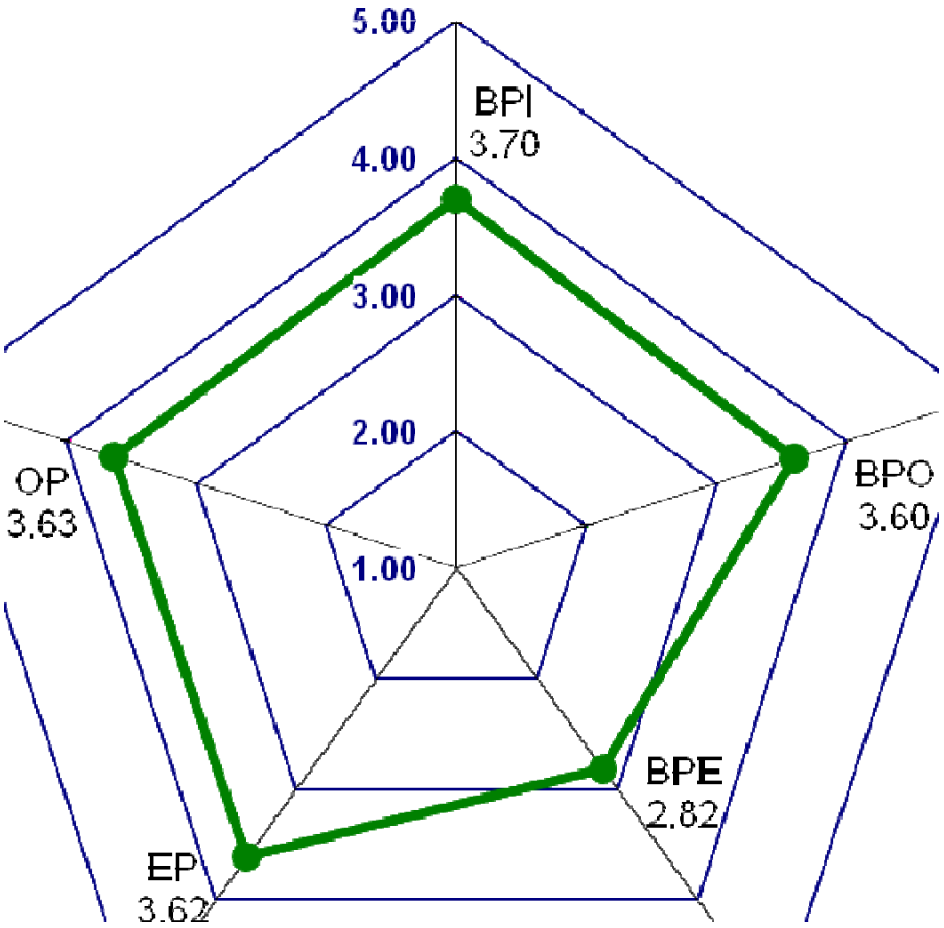


**Figure 2.** Graphical representation of mean values of variables.

Since the sample data were cross-sectional, the assumption of independence was not checked. In cross-sectional data, the assumption of independence is irrelevant because the data are not collected in any meaningful sequence (Carver and Nash, 2000).

## Model testing

The research team used both the regression method and the partial least squares (PLS) method to test the proposed model consistent with past studies (Abdi, 2007; Sajjad, 2008; Srite, 2006; Bhattacherjee and Sanford, 2006).

With the regression method, the research team used the coefficient of determination ($R^2$) and standardized regression coefficients ( ) to measure the strength of the relationship between the variables (McCormack, 1999, 2001). Figure 3 reveals the strength and direction of the relationship in the business process orientation model.

The relationship between the different constructs of the proposed model is significant ($p < 0.01$) and positive.

Furthermore, the research team used the bootstrapping technique of PLS to confirm the relationship between the variables (Abdi, 2007; Gefen et al., 2000; Calantone et al., 2006; Sajjad, 2008).

Table 4 reveals the bootstrap PLS results for structural model using visual partial least squares (VPLS) version 1.04.

The results are consistent with the output of the linear regression method, as there is a significant relationship ($p < 0.05$) between all of the variables, as proposed in the model. Based on the results of both the linear regression method and the PLS method, all of the hypotheses ($H_1$-$H_7$) are accepted.

## DISCUSSION AND CONCLUSION

The statistically significant and positive relationship between business process orientation and organizational performance are consistent with past research (McCormack, 1999; Skrinjar et al., 2008) . The strength of this relationship is weaker ($R^2 = 0.074$, $= 0.272$) than that indicated by the values of similar parameters ($R^2 = 0.135$, $= 0.279$) computed by McCormack (1999) and

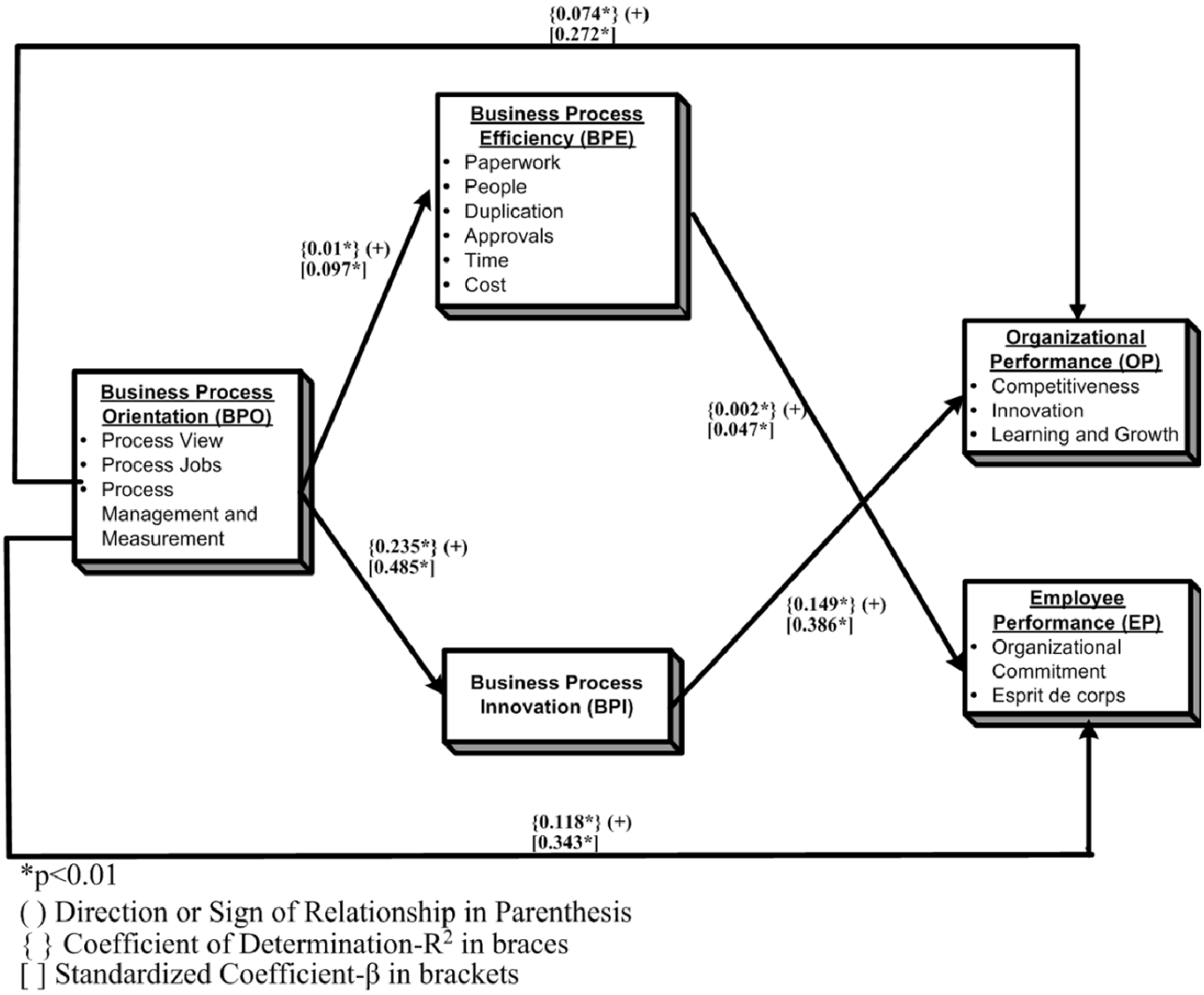


**Figure 3.** Testing the business process orientation model.

**Table 4.** Bootstrap-structural model.

| | Entire sample estimate | Mean of sub-sample | SE | t-statistic |
|---|---|---|---|---|
| BPO-BPE | 0.19 | 0.1951 | 0.0557 | 3.377 |
| BPO-BPI | 0.48 | 0.4801 | 0.0425 | 11.2041 |
| BPO-OP | 0.30 | 0.3059 | 0.0489 | 6.1548 |
| BPO-EP | 0.50 | 0.5052 | 0.0382 | 13.0753 |
| BPE-EP | 0.10 | 0.1045 | 0.0651 | 1.5059 |
| BPI-OP | 0.36 | 0.3594 | 0.0585 | 6.1572 |

Source: Field data.

Skrinjar et al. (2008). This study also indicates a statistically significant and positive relationship between business process orientation and employee performance, consistent with past studies (McCormack, 1999, 2001a). The strength of this relationship is weaker ($R^2$ = 0.118, = 0.343), compared to the results indicated by ($R^2$ = 0.135, = 0.5) McCormack (1999) and McCormack (2001a) studies. The findings reveal an emphasis on process orientation in business as intended to improve employee and organizational performance in the banking sector of

Pakistan.

This study reveals a significant and positive relationship between business process orientation and business process efficiency, as is consistent with theoretical studies (Skrinjar et al., 2008; Tenner and Detoro, 2000; Zaheer et al., 2008a; Hammer and Champy, 1993; Harrington, 1991; Harrison and Pratt, 1993; Cook, 1996; Sethi and King, 2003).

Business process orientation is also a good predictor of business process innovation, as revealed by the significant and positive relationship indicated. This is consistent with past theories (Davenport, 1993; McCormack and Johnson, 2001; Harrington, 1991; Singh et al., 2008).

This study reveals a significant and positive relationship between business process efficiency and employee performance, consistent with past theoretical studies (Certo, 2001; Hammer and Champy, 1993; Luthans, 1997; Pangarkar and Kirkwood, 2008; Roy, 2005). The significant positive relationship between business process innovation and organizational performance also supports the results of past theoretical research (Deshpande et al., 1993; Lin and Chen, 2007; Han et al., 1998; Davenport, 1993; Pinho, 2008; Carmon and Jose, 2008; Pitt and Tucker, 2008).

In summary, this study supports the conceptual model of business process orientation as intended to improve employee and organizational performance based on field data and statistical results. Business process orientation helps to improve performance directly and indirectly. Process- oriented businesses tend to perform well because of enhanced efficiency and support for innovation.

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