

## Impacts of Business Process Orientation on Creation and Retention in Business Process-Oriented Organization: Empirical Study in an Automotive Company

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**Abstract:** The aim of present study is to analyze effects of business process orientation on creation and retention of process-oriented organization with regard to executive methods of business process reengineering and business process management. Standard questionnaire was designed to evaluate these variables. After ensuring validity and reliability of the questionnaire by confirmatory factor analysis, it was distributed among a sample size (n = 183) involving managers, authors, experts of systems unit, experts of information technology and experts of strategic planning in main companies of Iran Khodro Industrial Group. Research method of present study is descriptive-correlational and path analysis method was used to test research hypothesis. Model results obtained from present study indicated that process orientation has positive and direct effect on all subsequent variables. On the other hand, business process reengineering affects creation and business process management influences retention of process-oriented organization.

**Key words:** Business process orientation, business process management, business process reengineering, process-oriented organization, reliability

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### INTRODUCTION

The concept of process orientation has been considered and developed as new attitude of management philosophy in recent two decades. It mainly emphasizes on business process instead of organizational tasks (Abdolvand *et al.*, 2008). Most thinkers believe that such philosophy rises in new form of organizations. Such new form is called process-oriented organization. They believe that such organizational form consider business process as the main organizational structure. Also, they believe that management in its traditional form, emphasizes on control mechanisms, though in process oriented organization, the main emphasis is on coordination, hence issues such as establishment and empowerment are considered in this regard which are more complicated than control mechanisms (Seltsikas, 1999).

On the other hand, most scholars believe that organizations have recognized the importance of processes in improving organizational performance and the demand for techniques, tools and plans for improving organizational business process is increased gradually. Hence, they consider business process reengineering as one method of change management in organizations which causes considerable changes in organizational performance through creating business process in organizations. In addition, business process

reengineering makes rapid and radical changes, through fundamental rethinking and changing in organizational processes and creating an integrated and cooperated set of business processes.

Business process reengineering is not only redesigning of business process in organizations but also it is redesign of information technology in organizations which results in formation of process oriented organization. It is an organization which acts based on business process and organization support them (Shin and Jemmella, 2012). Hammer and Champy believe that business process reengineering emphasizes on advantages of organizations' root redesigning, considering it as big explosion in organizations which results in process oriented organization (Brocke *et al.*, 2011). On the other hand, through development of principle of continuation, Hammer believes that business process results in sustainable competition advantage for organization when improvement occurs in them continuously. In addition, business process management is, in fact, continued improvement of business process (Trkman, 2010). Hammer, also, mentions philosophy of business process management, explaining that although every project creates advantages for organization whether in gradual or mutation form, even the best achievement for organization can be temporal and it fades away soon according to economic and competitive conditions of

organization environment. Overall, he believes that business process management is not mere a continued change project in business process rather it is a change in organization's thinking process. Moreover, he mentions the role of culture and its supportive role in business process management of process-oriented organization in a way that he introduces that as natural part of daily work of such form of organization. Although, different studies have proceeded on studying the relationship between each construct of process-orientation, business process reengineering, business process management and process oriented organization with organizational performance (both financial and non-financial), still no comprehensive result has been presented about transposition and hierarchy of these structures.

The relationship between PO and financial and non-financial performance has been considered in most studies and it was identified that higher level of process puberty results in higher level of financial and non-financial performance in organizations (Shin and Jemmella, 2012). Parker, on the other hand, considers lack of PO in organizations as the most important factor of their failure in implementation of BPM. Sinur and Thompson mention that process knowledge and practical experiences of managers are the most important factors for success of BPM systems. Overall findings of above mentioned studies indicated that relative degree of executive problems of BPM is reversely related to relative level of PO in organization (Reijers, 2006).

Finally, main objective of present study is investigation of dimensions and indexes of each of these structures and their relationship in a unified model. Through reviewing related literature, present study first investigates the relationship between each of these constructs, then it develops and validates a model in the field of developing and retention of process-based organization based on experts' opinions. The novelty of present study is related to design and explanation of retention model for process-based organization. Moreover, distinguishing between the role of business process reengineering and business process management in retention and development of process-oriented organization is the most important management point of present study.

**Review of literature:** In this study first, several conceptual definitions then operational definitions will be presented in ratio of each construct:

**Process Orientation or Business Process Orientation (PO or BPO):** PO is a new paradigm for organizations in

different fields of business. Unlike functionalism which divides organizations to tasks and functions such as: sale, production, supply and product development, it organizes organizations around their processes.

The main thought over PO is that in organizations, everything and everyone is organized for effective and direct servicing to customer which is the ultimate goal of process. Process orientation thought and attitude relies on the issue that personnel do not look upward (people in the hierarchy) rather they look forward (customers). Furthermore, business process concentration focuses on organizations' attempts to create business process as criteria for organizational structure and strategic planning. It also proposes to organizations to improve their performance by taking strategic attitude toward their processes.

Organizations with more changes in their business processes obtain higher level of organizational performance, better work environment for cooperation and reduced contradictions. Using management maturity of supply chain they considered 9 aspects for extrinsic structure of concentration on business processes which involve: leadership and strategy, process documentation, process performance and evaluation, organizational structure, personnel management, values and organizational culture, customer care, suppliers management, information technology and systems (Bronzo *et al.*, 2013).

In this study, process view, process occupations, evaluation and measurement of process, task integration, personnel's innovation, customer orientation and organizational performance have been conceptualized as dimensions of BPO. Process view mentions the fact that to what extent business process has comprehended and documented itself. Process occupations also emphasize on the issue that to what extent personnel's performance has been organized on business process which results in production or providing services. Task integration focuses on developing business process from tasks of different units of the organization. Personnel's innovation focuses on the fact that whether organization has a culture to empower the personnel or not. Customer orientation emphasizes on value creation for customers and also continued improvement and finally organizational performance evaluates efficiency and effectiveness business process from aspects of results quality, production time cycle, process costs and variability (Tang *et al.*, 2013).

**Business Process Reengineering (BPR):** Various studies have been carried out in the field of BPR, showing that BPR results in organization restructuring in line with

process-oriented organization (Cho and Lee, 2011). Hammer and Champy believed that BPR is fundamental rethinking, redesigning and basic designing of business process to create considerable improvement in key indexes of performance such as: costs, quality, service providing, reducing costs, delivery time, improving performance results of the organization, flexibility and innovation. Al-Mashari *et al.* (2001) consider BPR as a group of innovative plans for change with a degree of fundamentalism supported by information technology. The ultimate goal of BPR is achieving higher performance standards through creating sustainable capacities in processes of the organization.

In current study, six main factors of egalitarian leadership, collaborative working environment, top management commitment, change in management systems and use of information technology are considered as success factors and resistance to change is classified as failure factor (Abdolvand *et al.*, 2008). The most important task of egalitarian leadership is sharing view and information, establishing open relations, establishing trust and confidence among subordinates and effective use of subordinates' beliefs (Vos *et al.*, 2011). He also believes that collaborative work environment should involve conditions such as friendly interactions, trust and confidence among individuals, team work, intimate environment and appreciating the personnel. He also believes that change in management systems is substantiated in characteristics such as redesign of rewarding systems, developing new measurement tools of performance, use of updated communication methods, empowering personnel, scheduled training and education of personnel (Abdolvand *et al.*, 2008). In addition, Stanton believes that top management commitment is the necessary factor for successful administration of BPR where its real expectations, sufficient and appropriate communications with reengineering team and beneficiaries of underlying project are conceptualized by factors such as adequate knowledge of business process reengineering (Crowe *et al.*, 2002). Attaran, Vhuic and Vidovic believe that information technology is considered as a necessary element and even a natural partner of business process reengineering, referring to dimensions such as different types of software, hardware, information systems and communicative technologies which provide individuals with needed information. Lee and Dale (1998), considers factors such as fear To lose power among middle managers of the organization, fear of lose job among personnel, severity about results of project and uncomfortable sensation at new work environmen as reasons of resistance to BPR.

**Process-Oriented Organization (POO):** POO is defined as an organization which unlike organizational pyramid has been organized around processes, process-oriented approach, customers and outputs (Love *et al.*, 1998). Process-oriented organization has clearly recognized this issue and improves all of its processes for customer's satisfaction, design and management (Skrinjar *et al.*, 2007). POO is not mere a sole concept rather it should be described as a family of organizations which have different puberty levels of organizational processes such as process-focused organization, process-based organization and process-oriented organization (Corallo *et al.*, 2010). POO can be considered as next step of process orientation concept where process thinking is developed in organization and responsibilities are determined for process management among lower level managers (Vos *et al.*, 2011). In operational definition of multi-dimensional structure of POO an evaluation model with seven main dimensions is developed which involves business process documentation and design, top management commitment, process ownership, process performance evaluation, process culture, process structure and continuous improvement methods in processes (Kohlbacher, 2010). Kiraka and Manning consider business process documentation and design dimension as necessity for management in process-oriented organizations which causes recognition of business process in organization, showing that how business processes interact with each other.

Furthermore, Edwards's point out top management commitment aspect, believing that this aspect shows to what deal organization managers support process plans. Hammer and Stanton consider process ownership as distinguishing factor of POO. This aspect evaluates the role of process owners in executive activities of the organization. This dimension, also, investigates the limit which evaluates process performance. Armistead and Machin consider cultural appropriateness as an important issue, since individuals and processes play a role in output production. This dimension, evaluates organizational culture form aspects of team work, tendency for change and customer care, personal accountability and cooperative leadership. A POO considers process approach in its structure and such approach relies on the fact that structure is formed following processes. Finally, the organization is evaluated from aspects of use of continuous improvement methods in processes, existence of experts and personnel's skills in the fields of redesign, project management and change management (Kohlbacher and Gruenwald, 2011).

**Business Process Management (BPM):** Many studies have been done to adjust BPR in a way that advocates of continuous improvement method consider BPR as destructive and hasty which impedes formation of POO (Munive-Hernandez *et al.*, 2004). Zairi considers BPR as structured approach for continuous analysis and improvement of main activities such as production, marketing, communications and other important factors in organization's activities. Association of Business Process Management Professionals sees BPM as management field which focuses on organizational processes (Segatto *et al.*, 2013). BPM is a distinguished method from comprehensive quality management. Hammer and Champy consider it distinguished from BPR (Palmborg, 2009). Using exploratory factor analysis, Trkman investigated 5 critical factors of success for BPM entitled as: strategic alignment, performance measurement, organizational changes, information systems support and the staff's empowerment and training (Trkman, 2013).

**Objectives:** Present study proposes a model in which BPO is considered as management thinking, being influential as one method of creating POO through BPR. Although, such changes can be considerable and fundamental, as it was mentioned earlier, the issue of BPM is developed after creating POO for sustainability of competitive advantages caused by business process and retention of POO (Fig. 1). One of the main effects of which are continuous improvement in business processes.

**Rationale of study:** Strategic alignment is alignment of process objectives with organizational objectives, top management's active cooperation their overall consensus in using BPM and still more importantly personnel's understanding of such alignment as necessary executive methods in organization. Kumar *et al.* (2011) believe that the aim of performance measurement aspect is assurance of process-based alignment with organizational objectives. Organization should index process objectives, control them continuously and evaluate effectiveness of processes. By organizational changes, we mean that organizations don't need to replace process-based

structure with traditional structure rather they should know how to combine professionalism and profession of task structure with accountability and adjustment of process-based type (Skrinjar *et al.*, 2008). Groznik and Maslaric believe that information systems support based on BPM and capability of such systems in providing appropriate information of business process efficiency to managers and use of information technology in understanding customers' needs of necessary executive methods are considered as critical factors of success. Indolca *et al.* consider staff's empowerment and training as prerequisite of BPM success. Reijers and Mansar, Trkman and Mac Cormack believe that empowered personnel can make their decisions directly which causes clarification of operations and shortened time of doing things (Trkman, 2013).

**MATERIALS AND METHODS**

Present study is applied from objective aspect, correlational from data collection method and it relies on operational data collection method. Statistical population of present study (n = 323) involves managers, operators and experts of methods and systems unites, information technology unites and strategic planning unites of main companies of Iran Khodro Industrial Group. Using Morgan and Kerjisi table, sample size was estimated 175. Considering large number of questionnaires, 230 questioners were distributed among statistical population in simple random sampling method and finally data analysis was carried out on 183 questioners. In this study, the scholars used standard questionnaires for data collection. Tang *et al.* (2013) questionnaire was used for evaluation of BPO's aspects which includes process view, process occupations, evaluation and measurement of process, task integration, personnel's innovation, customer orientation and organizational performance, Abdolvand *et al.* (2008) questionnaire was used to evaluate key factors of success in BPR which involves egalitarian leadership, collaborative working environment, top management commitment, supportive management, use of information technology and resistance to change. Kohlbacher and Gruenwald (2011) questionnaire was used to evaluate POO's aspects which involve business process documentation and design, top management commitment, process ownership, process performance evaluation, process culture, process structure and continuous improvement methods in processes. Trkman (2013)'s questionnaire was used to evaluate key factors of success in BPM Method which involve strategic alignment, performance measurement, organizational changes, information systems support and

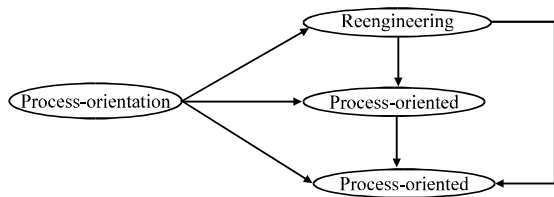


Fig. 1: Research conceptual model

Table 1: Research main components test based on factor loadings and t<sub>0</sub> values

Research constructs	Alpha cronbach	Main components	Load factor	t-values	Test result
Business process orientation or process orientation	0.771	Process view	0.73	38.69	Was confirmed
		Process occupational	0.72	37.79	Was confirmed
		Evaluation and measurement of processes	0.73	38.98	Was confirmed
		Task integration	0.59	29.39	Was confirmed
		Customer orientation	0.59	29.39	Was confirmed
		The employee's innovation	0.71	37.08	Was confirmed
Business process reengineering	0.787	Organizational performance	0.73	39.02	Was confirmed
		Egalitarian leadership	0.64	32.29	Was confirmed
		Collaborative working environment	0.69	35.90	Was confirmed
		Top management commitment	0.73	38.64	Was confirmed
		Supportive management	0.66	33.81	Was confirmed
		Use of information technology	0.70	36.66	Was confirmed
Process oriented organization	0.822	Resistance to change	0.58	28.85	Was confirmed
		Top management commitment	0.67	34.90	Was confirmed
		Process culture	0.69	36.32	Was confirmed
		Continuous improvement methods	0.70	36.86	Was confirmed
		Process performance evaluation	0.72	37.99	Was confirmed
		Process structure	0.71	37.45	Was confirmed
Business process management	0.779	Process owner	0.72	38.25	Was confirmed
		Process documentation and design	0.65	33.36	Was confirmed
		Strategic alignment	0.67	34.28	Was confirmed
		Performance measurement	0.73	38.51	Was confirmed
		Organizational changes	0.70	36.33	Was confirmed
		Information systems support	0.66	33.36	Was confirmed
		Staff's empowerment and training	0.52	24.90	Was confirmed

Table 2: Research main hypothesis test based on path coefficient and t<sub>0</sub> values

Research main hypothesis test (relationships between latent variables of the study)	Path coefficient	t <sub>0</sub> values	Test result
Relationship between BPO and BPR	0.90	29.81	Was confirmed
Relationship between BPO and POO	0.25	4.84	Was confirmed
Relationship between BPO and BPM	0.49	8.42	Was confirmed
Relationship between BPR and POO	0.71	12.63	Was confirmed
Relationship between BPR and BPM	-0.46	-4.26	Was confirmed
Relationship between POO and BPM	0.92	8.96	Was confirmed

the staff's empowerment and training. Reliability of scales was examined by Cronbach's alpha in SPSS Software and following values were obtained:

BPO or PO ( $\alpha = 0.771$ ), BPR ( $\alpha = 0.787$ ), POO ( $\alpha = 0.822$ ) and BPM ( $\alpha = 0.779$ ). These results indicate that the questionnaire has appropriate and relatively high reliability. The main data analysis method of present study is Structural Equation Modeling (SEM) which was carried out using LISREL Software (Version 8.5). Confirmatory factor analysis method was used to investigate model fitness and correlation of research components with latent constructs (research variables) and path analysis method was used to test research hypothesis. In this study most highlighted hypotheses will analyze that whether the relationship between BPO and BPR, POO and BPM is significant or not. Moreover, this research will investigate the relationship between BPR and POO, BPM, respectively. In this study, the status of main components (Table 1) of BPO, BPR, POO and BPM are investigated based on factor loadings and t-test, using confirmatory factor analysis method. Results of this analysis can be seen in Table 2. As it can be seen t<sub>0</sub> value of all components is >1.96 at error level of 0.05. Moreover, all components of the study were confirmed.

Table 3: Fit indexes of model

Fit indexes	Standard values	Statistic values	Result of model fitting
$\chi^2/df$	<3	1.250	Appropriate fit
RMSEA	Smaller than 0.05	0.037	Appropriate fit
GFI	Between 0-1	0.880	Appropriate fit
AGFI	Between 0-1	0.900	Appropriate fit

The aim of evaluating overall fit of the model is to determine to what extent whole model is in balance and compatible with experimental data. Model fit indexes of the study are  $\chi^2$  ratio to degree of freedom ( $\chi^2/df$ ), mean square error of approximation root or RMSEA, Goodness of Fit Index or GFI and Adjusted Good of Fit Index or (AGFI). Values of these indexes along with their standard values can be seen in Table 2.

Considering fit indices (Table 3), it can be concluded that model of research Construct's level has appropriate fit. After studying the relationship between components with latent variables, the path analysis method is used in this study to investigate research hypothesis which shows how strong are statistics' value in predicted relations. Path coefficients between research constructs or latent variable in the form of measured model at standard and significant mode obtained using LISREL Software which can be seen in Fig. 2 and 3.

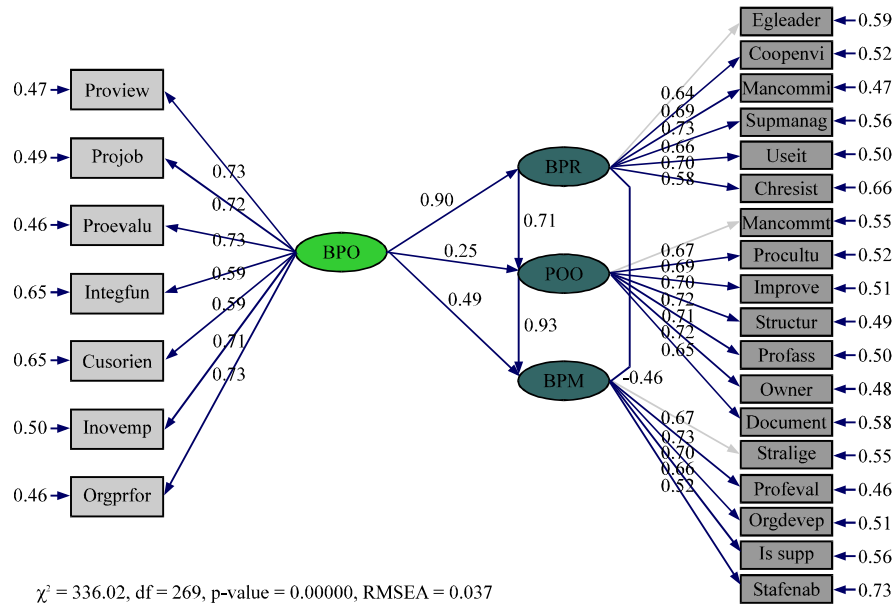


Fig. 2: Measurement model at standard mode

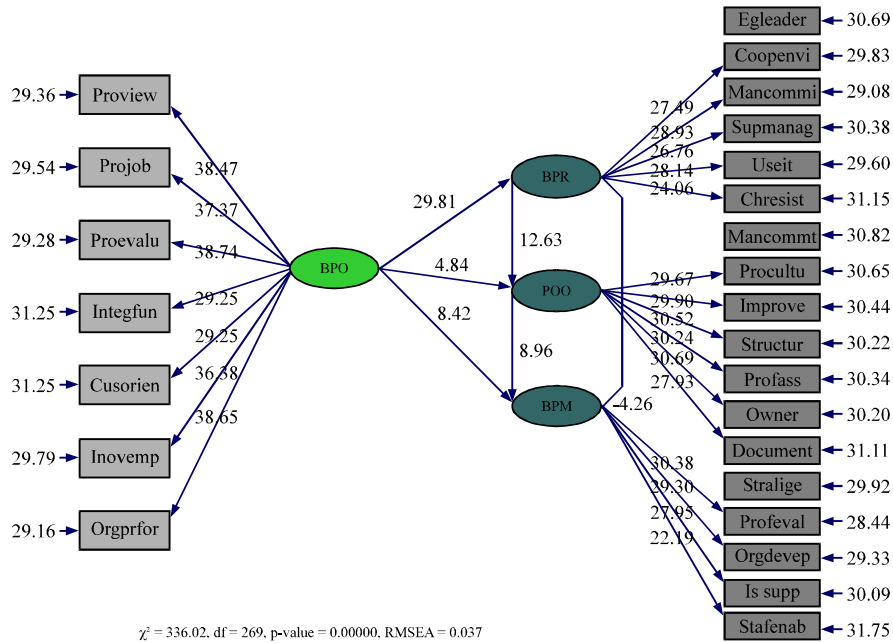


Fig. 3: Measurement model at significant mode

### RESULTS

Results and conclusions of research hypothesis test have been presented (Table 2), considering path coefficients between research variables in the form of measurement model at standard and significant mode.

According to Table 3, it can be claimed that BPO has significant and direct relationship with three latent variables (the main variables of the study) which are BPR ( $t = 29.81 > 1.96$ ), POO ( $t = 4.84 > 1.96$ ) and BPM ( $t = 8.42 > 1.96$ ). Moreover, BPR has significant and direct relationship with POO ( $t = 12.63 > 1.96$ ) and POO has direct and significant relationship with BPM ( $t = 8.96 > 1.96$ ).

Overall, it can be concluded that BPO has positive effect on other variables of research. On the other hand, BPR has positive effect on POO but negative effect on BPM. POO has also positive effect on BPM. Therefore, it can be concluded that BPO influences POO once directly and once by BPR and POO affects BPM.

## DISCUSSION

The aim of present study was to investigate and explain the role of BPO, BPR and BPM in development and retention of POO. Results of present study indicated that BPO influences POO directly and indirectly, its indirect effect is considerable through BPR. Other studies have also indicated BPR as the most important factor in development of POO (Hellsten and Klefsjo, 2000). Present study indicated weak correlation between BPO and POO. This is while some studies have distinguished between BPO and POO (Creed *et al.*, 2008) and some other researchers considered no difference between these two concepts (Kohlbacher, 2010). Results of present study confirmed the relationship between POO and BPM. Hence according to the results of previous studies BPM is an important factor in retention of POO (Segatto *et al.*, 2013). Present study indicated a reverse relationship BPR and BPM. Previous studies have only preceded on differences between these two methods from aspects of nature of improvement caused by them in the organization (Skrinjar *et al.*, 2008). Findings of present study indicated that whenever a POO is formed by BPR, using BPM, the organization attempts to retention of POO which is in fact, a return to official organization. The novelty of present study helps managers and researchers to focus not only on formation stage of the faces of organization but also on retention stage of the faces of organization through time when investigating organizational face. On the other hand, analysis method used in this study indicated that paying attention to executive methods (BPR, BPM) and philosophy (BPO) can be widely influential in development and retention of POO in a way that executive methods which are resulted from the faces of organization philosophy can result in formation and retention of the faces of organization.

## CONCLUSION

Moreover, in this study, the term POO was considered as a sole concept from process maturity point, so it is suggested that the effect of process maturity variable to be investigated in determination of executive methods of POO creation and retention. Considering the research objective, not studying the role of organizational

performance in POO development and retention and considering that the relationship between each of latent variables and organizational performance has been considered individually in previous studies, so it is proposed that the role of each of main variables to be studied on organizational performance.

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