



## Management Research Review

Investigating the causal link between a management improvement technique and organizational performance: The case of the HPO framework

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### Article information:

To cite this document:

André de Waal, Robert Goedegebuure, (2017) "Investigating the causal link between a management improvement technique and organizational performance: The case of the HPO framework", Management Research Review, Vol. 40 Issue: 4, pp.429-450, doi: 10.1108/MRR-03-2016-0058

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# Investigating the causal link between a management improvement technique and organizational performance

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## The case of the HPO framework

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Received 8 March 2016  
Revised 10 August 2016  
2 November 2016  
Accepted 4 November 2016

### Abstract

**Purpose** – An important question in contemporary research is: do certain management practices cause better performance or do better performing organizations find it easier to adopt certain management practices? This question is also of importance when applying the high performance organization (HPO) framework, which is a scientifically validated technique designed to achieve and sustain a high level of performance. Many research studies correlate the HPO framework with improved organizational performance. There are, however, no studies which explicitly look at the causal relationship. This paper aims to provide empirical evidence of causality.

**Design/methodology/approach** – Longitudinal research was conducted at two companies. An HPO diagnosis was conducted at each company, after which management implemented the HPO framework. Two units at each company were selected as case studies. Data were collected, using a questionnaire and interviews, at the beginning and after 18 months, when the diagnoses were repeated. A linear regression analysis was performed to interpret the data.

**Findings** – Despite exposure to the same HPO framework techniques, organizational units achieved significantly different outcomes. In each company, one unit achieved a higher HPO score and higher organizational results, while the other unit had no change, or a lower HPO score and lower organizational results. The key factor was the manner in which unit managers applied the HPO framework.

**Practical implications** – Optimal effectiveness for the HPO framework occurs when management incorporates the HPO factors into the workplace and strives diligently to improve performance.

**Originality/value** – This research responds to the question “Do certain management practices cause better performance or do better performing organizations find it easier to adopt certain management practices?”

**Keywords** High performance organizations, Financial performance, Organizational performance, Management practices, Causality, Management quality

**Paper type** Research paper



### 1. Introduction

An issue which has for a long time occupied researchers investigating the effects of management practices on organizational performance is the direction of causality (Morrison, 2012). This issue centers around the question: do certain management practices cause better performance, or do better performing organizations find it easier to adopt certain management practices? (Bloom *et al.*, 2013a). Management researchers who study the

connections between organizations practicing certain management techniques and performance find positive correlations between the two. However, evidence of a positive correlation is not sufficient to establish with certainty that certain management practices will lead to improved performance, and not the other way around. It could even be the case that there is reciprocal causality wherein feedback occurs, with management practices and organizational performance influencing and interacting with each other (Granger, 1969; Dent, 2003; Battisti and Iona, 2009). Although this causal ambiguity has not prevented consultants and management writers from claiming that their techniques and frameworks, when executed properly, will increase organizational performance, in reality, many of these have proclaimed that “miracle cures” have had, at best, a short-lasting positive effect (Parnell *et al.*, 2012).

The issue of causality has become increasingly important as managers are struggling to choose and then allocate scarce resources to those management practices which will help, at least with a certain degree of certainty, them to improve their organization. This paper describes a study which evaluates whether applying a specific management practice, in this case de Waal's (2012a, 2012b, 2012c) high performance organization (HPO) framework, has a measureable positive impact on the performance of organizations. Our research question therefore is: *Can causality be proven to flow from implementation of the HPO framework to organizational performance?* Our hypothesis is that for the companies studied, their organizational performance is increased by applying the HPO framework (i.e. causality flows from applying the HPO framework to organizational performance), and not that because companies have increased organizational performance, they are able to apply the HPO framework (i.e. causality flows from to organizational performance to the application of the HPO framework). This research fills a gap in the current literature as it aims to show causality going from a management practice to organizational performance.

This paper is structured as follows. Section 2 discusses recent literature about the relation between management practices and performance improvement, followed by a description of the development of the HPO framework and HPO implementation studies in Section 3. Sections 4 and 5 describe the two case companies and the research methodology. The results of the research are subsequently analyzed and discussed. The conclusion suggests practical implications of the study findings, states limitations of the research presented in this paper and offers suggestions for future research.

## 2. Literature review

There is much literature that shows that some organizations achieve better performance than competitors, but the causes of this outperformance are ambiguous (Keller, 2011). The difference in performance could be due to local circumstances, types of products and services delivered, historical developments, cultural differences, industry complexity or even sheer luck (Parnell *et al.*, 2012). In addition, many of the studies show that correlations exist between the techniques and methods organizations apply and the organizational performance they achieve, but these studies do not show the direction of these correlations. This leaves open the issue of causality: does applying certain management practices lead to improved performance, or do organizations with improved performance have the means to apply certain management practices?

Causality in management studies is not easy to establish as there are quite a few variables that influence organizational performance (Morrison, 2012). There are studies that use mathematical formulas (such as the Granger causality formula) to test for causality. For example, Jin (2009) looked at the causality between research productivity and economic growth in five East Asian economies; Al-Khulaifi (2012) investigated the causality between

government revenue and expenditure in Qatar; [Guloglu and Baris Tekin \(2012\)](#) studied the causal relations among research and development expenditures, innovation and economic growth in high-income countries; and [Alexopoulos and Tombe \(2012\)](#) evaluated the effect of managerial innovations on the economy. However, these studies do not address the causal effects of specific management practices.

A growing body of research investigates correlations between specific management practices and organizational performance without showing causality. [Maes \*et al.\* \(2005\)](#) investigated the direct and indirect effects of selected management practices on the financial performance of small Belgian construction companies, using a structural model, and found that practices such as avoiding credit risks had a positive effect on financial performance. [Chalhoub \(2009\)](#) studied the effect of senior management initiatives on the performance of non-governmental organizations and found positive effects for the following factors: time span of the strategic plan; industry and government relations; and senior management's ability to maneuver in the external environment with a market-driven philosophy. [Abernathy \(2011\)](#) measured managers' perceptions of their effectiveness in administering 20 selected management practices and then looked at the correlation between the management practices perceived as most effective and organizational productivity; performance management practices correlated most strongly with productivity. [Keller \(2011\)](#) investigated the effect of 18 management practices on the performance of firms in southeast Wisconsin and found that management practices did not have a statistically significant impact on the economic performance of for-profit organizations, but had a highly significant impact on not-for-profit organizations. [Ingram \(2016\)](#) explored the role of a creative organizational climate and found that organizations seeking high performance through talent management should focus on creating a climate that supports employee creativity. [McAlearney \*et al.\* \(2016\)](#) evaluated the role of high-performance work practices (in the areas of staff engagement, staff acquisition/development, frontline empowerment and leadership alignment/development) in reducing bloodstream infections at different hospitals and found that these practices were more frequently present at the higher performing hospitals than at the lower performing ones.

[Muduli \*et al.\* \(2016\)](#) examined the relevance of high-performance work systems in the Indian context and found that implementing such a system, while concurrently strengthening employee engagement, increases the performance of companies. This finding was mirrored by [Garg and Punia \(2015\)](#) in their study of Indian organizations and [Garcia-Chas \*et al.\* \(2016\)](#) in their evaluation of Spanish organizations. [Vercic and Zerfass \(2016\)](#) looked at the characteristics that make a communications department excellent (in the sense of advisory influence, executive influence, success and competence) and found that such a department was not simply better at communication but employed more experienced people in higher positions and in more strategic roles; based its work on different processes with more listening and research; and produced more strategic communication strategies.

[Bloom \*et al.\* \(2013a\)](#) surveyed management practices in over 30,000 plants across the USA. They found that structured management practices are tightly linked to better organizational performance in the sense that organizations that adopt structured practices for performance monitoring, target setting and incentives enjoy greater productivity and profitability, higher rates of innovation and faster employment growth.

[Bloom \*et al.\* \(2013b\)](#) evaluated the use of managerial consulting services in textile plants in India to determine whether they improved performance. The researchers divided a group of small to medium-sized textile plants into two groups. Firms in both groups received an introduction into basic management practices and lean

manufacturing techniques, after which firms in one category received continuous consulting services for an extended period of time. The other firms did not receive any further support and, if they wanted, had to implement the management practices themselves. After one year, firms with support had achieved a 17 per cent increase in productivity, improved quality and reduced inventories and had within three years opened additional production facilities. The other firms only achieved a limited increase in performance. Bloom *et al.* concluded that the difference in results between the firms with continuous support and the unsupported firms was due to the fact that one group had adopted management practices while the other had not; thus, that causality flowed from management practices to organizational performance. Despite the commendability of the Bloom *et al.*'s (2013b) Indian study, some critical remarks can be made. The study took a specific view of management practices, i.e. mainly operational techniques and methods. But there is much more to management practices which should be taken into account, specifically, strategic, leadership and human research techniques such as establishing vision and strategy, coaching and inspiring (Waldman *et al.*, 2012). Also, the study population consisted of different organizations. Although these firms were all operating in the textile sector, they differed in size, age, strategies, environments, internal conditions, business models, cost structures and culture, which made them difficult to compare (Dervitsiotis, 2000; Campenhausen and Petrisch, 2004; Pfeffer and Sutton, 2006).

Thus, there is still a need for further study into the cause and effect relationship between management practices and organizational performance that takes a broader view of management practices and at the same time controls for different firm characteristics. This paper describes research that uses de Waal's HPO framework (de Waal, 2012a, 2012b), a scientifically validated framework, containing practices which have been positively correlated with competitive performance.

### 3. High performance organization framework

#### 3.1 High performance organization research

There have been many studies of HPOs, but none of these actually resulted in a universal theory, model or framework which could be applied in different organizational settings. Then, a few years ago, the HPO framework – incorporating the research results of multiple disciplines – was developed after an extensive review of 290 academic and practitioner publications on high performance (de Waal, 2006, rev. 2010, 2012a, 2012b). In that study, an HPO was defined as:

[...] an organization that achieves financial and non-financial results that are exceedingly better than those of its peer group over a period of time of five years or more, by focusing in a disciplined way on that what really matters to the organization.

For each of the 290 studies, elements that the authors indicated as being important for becoming an HPO were identified and placed in categories labeled "potential HPO characteristic". For each of the potential HPO characteristics, the "weighted importance" was calculated, i.e. the number of times that it occurred in the examined studies. Finally, the characteristics with the highest weighted importance were considered the HPO characteristics. These characteristics were subsequently included in an HPO survey which was administered worldwide and encompassed over 3,200 respondents. In this survey, the respondents were asked to indicate how well they thought their organizations were performing as to the HPO characteristics (on a scale of 1 to 10) and also the results of the organization they worked at compared to those of peer groups. The competitive performance was calculated in two ways:

- (1) *Relative performance (RP)*: This is performance of the organization versus performance of its peer group.
- (2) *Historic performance (HP)*: This is the performance of the organization in the past three-five years versus the performance of its peers during the same time period.

These subjective measures of organizational performance are established indicators of real performance (Dawes, 1999; Devinney *et al.*, 2005; Glaister and Buckley, 1998).

Using factor analysis, 35 characteristics with both a significant and a strong correlation with organizational performance were extracted, identified and categorized into five factors. The factor scales showed acceptable reliability (Hair *et al.*, 1998) with Cronbach alpha close to or above 0.70. To verify whether these HPO factors were correlated with competitive performance, a correlation matrix was constructed. All five factors correlated with RP and HP (de Waal, 2010). To test whether the HPO factors were correlated with each other, another matrix was constructed. All factors correlated with each other, meaning that when an organization works on improving one of the factors, the other factors will also improve. Thus, the HPO framework may be characterized as a complementary system (Milgrom and Roberts, 1995) in which the return on one HPO factor becomes higher in the presence of the other HPO factors. The five HPO factors are as follows (in the Appendix the detailed HPO characteristics are given):

- (1) *Management quality*: Belief and trust in others and fair treatment are encouraged. Managers are trustworthy, committed, enthusiastic and respectful; have a decisive, action-focused decision-making style; hold employees accountable for performance results; and communicate values and strategy throughout the organization so that everyone knows and embraces these.
- (2) *Openness and action-orientation*: HPO has an open culture, which means that management values the opinions of employees and involves them in important organizational processes. Mistakes are allowed and regarded as an opportunity to learn. Employees dialogue, exchange knowledge and develop new ideas aimed at improving performance. Managers are personally involved in experimenting, thereby fostering an environment of change.
- (3) *Long-term orientation*: An HPO grows through partnerships with suppliers and customers; long-term commitment is extended to all stakeholders. Vacancies are filled by high-potential internal candidates, if possible, and people are encouraged to become leaders. An HPO creates a safe and secure workplace (both physically and mentally) and dismisses employees only as a last resort.
- (4) *Continuous improvement and renewal*: HPO continuously improves, simplifies and aligns its processes and innovates its products and services, creating new sources of competitive advantage to respond to market developments. HPO manages its core competences efficiently and outsources non-core competences.
- (5) *Employee quality*: HPO assembles and recruits a diverse and complementary management team and workforce with maximum work flexibility. The workforce is trained to be resilient and flexible; encouraged to develop skills to achieve extraordinary results; and held responsible for their performance, leading to increased creativity and better results.

HPO research shows that there is a direct and positive relationship between the five HPO factors and competitive performance: the higher the scores on the HPO factors (HPO scores), the better the results of the organization, and the lower the HPO scores, the lower



the competitive performance. Research also shows that all HPO factors need to have high scores for an organization to achieve excellent results. An organization can evaluate its HPO status by performing an HPO diagnosis in which management and employees complete a questionnaire, containing questions on the 35 HPO characteristics with possible answers on an absolute scale of 1 (very poor) to 10 (excellent). Average scores indicate points where the organization has to take action to become an HPO. The HPO framework is based on the assumption that organizations dedicated to improving their management practices will experience better results.

### *3.2 Relation between high performance organization framework and organizational performance*

Since the development of the HPO framework, multiple studies have been performed which show a positive correlation between the HPO scores of an organization and its performance. For example, the HPO framework was applied at a large European multinational in the retailing industry. People in 15 country divisions filled in the HPO questionnaire, and, subsequently, the average HPO score per country division was calculated. In addition, the financial results of the country divisions [measured as the earnings before interest, tax and amortisation (EBITA)/employee ratio] were collected. There was a direct link apparent between the average HPO scores and the financial results: country divisions that had the highest HPO scores also had the highest financial results, and country divisions with the lowest HPO scores had the lowest financial results (de Waal, 2012a, 2012b, 2012c). Similar research was conducted at three regions of a Dutch temporary employment agency, with the same positive results (de Waal and Meingast, 2011).

In Vietnam, the HPO questionnaire was sent to employees of 26 banks in Ho Chi Minh City and Hanoi, and average HPO scores were calculated for the banks. In addition, financial results of these banks were collected and a financial ranking was made from best to worst financially performing bank. To test for correlation between HPO factors and competitive performance, a multiple regression analysis was performed, which showed that competitive performance was a linear function of the five HPO factors (de Waal *et al.*, 2009). Similar research was performed at banks in Tanzania (Yusuph, 2010), Tanzanian manufacturing firms (Godfrey, 2010), Dutch swimming pools (de Waal and Linders, 2008) and Peruvian mining companies (de Waal and Orcotoma Escalante, 2011). All studies suggested a positive relation between the HPO questionnaire scores and competitive performance.

Another type of research investigated the effects of applying the HPO framework. Researchers sought to determine whether organizations that performed an HPO diagnosis and subsequently worked on addressing the HPO attention points, thus strengthening their internal organization, actually improved their performance. A private university in Tanzania, Iringa University College, wanted to increase the quality of its internal organization and, therefore, conducted two HPO diagnoses, two years apart. In the intermediate period, the organization worked on its HPO attention points. At the time of the second HPO diagnosis, the college reported the following increases in performance which it attributed to working with the HPO framework:

- It now ranked among the top ten peer East African universities.
- It achieved national and international recognition and awareness.
- It recruited and retained more students.
- It raised the quality of education.
- It expanded its facilities considerably.
- It attained higher employee satisfaction.
- It became financially stable (de Waal and Chachage, 2011).

Nabil Bank Limited, the first foreign joint venture bank of Nepal, conducted two HPO diagnoses over a time span of two years. During these diagnoses, the performance of Nabil Bank was compared with its peer group of Nepalese banks. This comparison showed that both for return on assets and non-performing loans, Nabil Bank was the best bank in the peer group (de Waal and Frijns, 2011).

The Dutch unit of a large European manufacturer and supplier of kitchen and bathroom fixtures decided to conduct two HPO diagnoses. As a result of working on the HPO attention points, the management of the company stated that the organization had gained a renewed spirit and that the winner mentality had returned. Specifically:

- The company achieved an increase in openness and action orientation because departments now came together routinely to jointly discuss and take action.
- Many new products had been introduced successfully, and there was a new successful market approach.

Sales and profits doubled and market share was won in a difficult competitive market (de Waal, 2012b).

A British consortium of IT companies, working for the British Ministry of Defense, used the HPO diagnosis to increase the quality of its cooperation and to achieve the results that were agreed upon with the Ministry. To this end, the consortium conducted several HPO diagnoses over a period of four years and during the intermediate periods worked on the HPO attention points. The consortium noticed:

- better relations, more trust and more communication among partner organizations;
- increased engagement of employees;
- significantly more applications delivered to a larger number of users worldwide; and
- external recognition from British governmental committees as being an example of successful cooperation on a grand scale (de Waal, 2012b).

A banana grower and exporter in The Philippines noticed, after working on the HPO diagnosis attention points, that an HPO mind-set had arisen throughout the organization:

- commitment to one goal and one team, with dialoguing a key activity;
- an increase in the net productive area from 50 hectares per year to 250 hectares;
- an improvement in the quality of the bananas from 50 to 90 per cent Grade “A”; and
- an improvement in revenue (de Waal and de Haas, 2013).

A Dutch cable company, after conducting its first HPO diagnosis, worked diligently on its HPO attention points and achieved an increase of 0.6 points on its HPO score. The company acknowledged several non-financial benefits of working with the HPO framework:

- a renewed sense of employee pride;
- a widespread feeling of trust; and
- a sense of belonging to a worthwhile organization.

These subjective improvements also translated into financial benefits:

- More than 70 per cent of the goals listed in the company’s improvement plans were realized.
- Employee satisfaction scores increased by 13 per cent.
- The company’s profits almost doubled (de Waal *et al.*, 2015).



The aforementioned studies give a clear indication that there is a strong relation between the HPO framework and organizational performance. However, none of these studies specifically looked at causality between the two variables. In the next section, a causality study is described.

#### 4. Methodology

As Sheehan (2014) and Volberda *et al.* (2013) stated, to establish causality, the design of the research has to be “predictive”, which requires collection of data in at least two time periods. Therefore, the research described in this paper is longitudinal in design; data were collected at the case companies at two points in time, with approximately 18 months in between the collection times. A longitudinal study can be defined as research in which “data are collected on one or more variables for two or more time periods, thus allowing at least measurement of change and possibly explanation of change” (Menard, 2008, p. 3). To measure the effectiveness of an organizational improvement technique, in this case the HPO framework, the type of longitudinal study was used that looks at the improvement of a certain phenomenon over time, in this case organizational performance (Rainer, 2011). In addition, the longitudinal methodology was prospective and *a priori* focused, meaning that the study was based on repeated data collection from the same subjects over a period of time (Hassett and Paavilainen-Mäntymäki, 2013). The study had a pre-analysis research design in which mode of data collection and analysis is structured in advance (Alfodi and Hassett, 2013).

The longitudinal study was performed at two organizations. At each company, an HPO diagnosis was conducted in two departments which had agreed to implement the HPO framework. Each department’s use of the HPO framework and its subsequent performance was evaluated and compared with the other department’s use and performance in the same organization. This research method used internal benchmarking to control for organizational and cultural differences (Southard and Parente, 2007). Thus, problems connected with incomparability were avoided (Battisti and Iona, 2009).

##### 4.1 Service company

A company based in The Netherlands and active in the service industry (Service) was an average-performing company seeking to become an HPO. Service employed approximately 1,500 people in seven departments at its headquarters and with common processes, systems and procedures. For instance, all departments were subject to the same yearly budget process, the same quarterly and monthly reporting cycle and the same yearly evaluation and reward process. In 2010, the first HPO diagnosis was conducted. Service’s managers and employees completed the HPO questionnaire, and interviews were conducted by the authors. Table I provides information about the respondents.

The purpose of the interviews was to obtain more information about particular HPO scores and also to understand work processes and culture in the departments. After the diagnosis, the board of management stipulated that each department had to participate in the HPO transformation and, therefore, had to work on the HPO attention points. However, each

**Table I.**  
Research population at  
Service, first and  
second HPO diagnoses

Respondents	2010			2012		
	Total respondents	Managers	Employees	Total respondents	Managers	Employees
Service company	1,020 (response rate: 56.6%)	91	929	2,293 (response rate: 76.4%)	207	2,086
D1	108	8	100	173	12	161
D2	32	4	28	30	5	25

department had the freedom to decide how to proceed with addressing and improving the HPO factors and could decide for itself the best course of action to become high performing.

This case study focuses on two of the departments with the most divergent results: sales department D1 and staff department D2. D1 was responsible for marketing and selling the company's products to clients. D2 was charged with supporting the board of management with specialist advice. Figure 1 depicts the HPO scores for both departments in 2010.

On average, an HPO scores at least 8.5 (de Waal, 2012a, 2012b, 2012c). Thus, average HPO scores of 6.1 for D1 and 6.4 for D2 suggest that both departments were only average-performing and had to pay attention to improving HPO factors, in particular: continuous improvement and renewal (CI) and long-term orientation (LTO). For D1, the attention points were:

- simplification of its accountability structure;
- execution of processes (company-wide and standardized) and tasks and better alignment of processes and tasks (CI); and
- to put organizational interest above departmental interest and therefore work together with other departments to create a client-focused strategy (LTO).

For D2, the attention points were: more cooperation with line departments to develop true partnerships and determine how to improve, simplify and align execution of processes (CI). D2 also had to put organizational interests above departmental interest, collaborate with stakeholders and add value for stakeholders and the company (LTO).

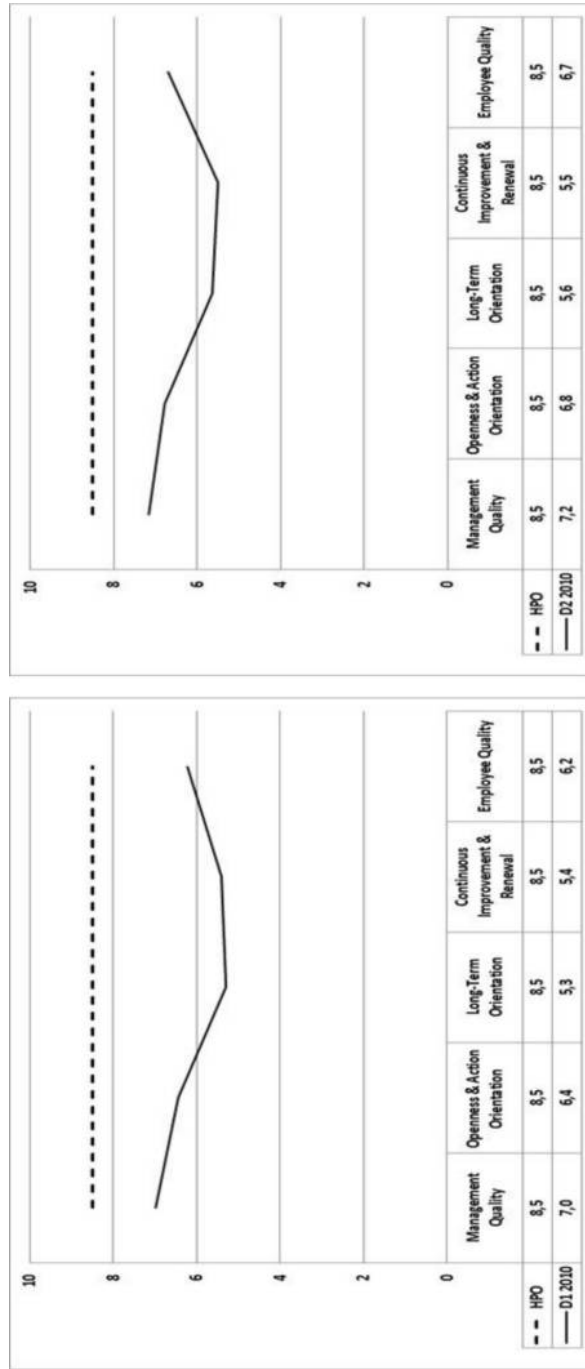
The second HPO diagnosis followed 1.5 years later in the summer of 2012 and was conducted in a similar manner as the first diagnosis. This meant that the HPO questionnaire was once again distributed and the scores were analyzed, after which interviews took place (Table I). In general, most departments achieved an increase in HPO scores. Figure 2 depicts the HPO scores of this second diagnosis for both departments.

A linear regression analysis was performed on the data from 2010 and 2012 to evaluate whether this increase in HPO scores was significant and to evaluate whether the increase was caused by a general (positive) effect which occurred during the years 2010-2012 and/or an effect generated by the department. Table II gives the results of the regression analysis.

The regression model is:

$$HPOFACTOR = \beta_0 + \beta_1 \times year2012 + \beta_2 \times staff + \beta_3 \times year2012 \times staff$$

In this formula, HPOFACTOR stands for each of the five HPO factors; "year 2012" is a dummy-variable (0 for 2010; 1 for 2012), and "staff" is a dummy variable for D2 (0 for D1; 1 for D2). The interesting part in the model is the coefficient for the interaction term ( $\beta_3$ ), which signifies the difference in the change of the score for the HPO factor from 2010 to 2012. As shown in Table II, the coefficients for staff are non-significant, by design, as units are selected with approximately the same HPO scores in the starting year 2010. The coefficient for year 2012 is the increase in the HPO factor for D1; for D2, this coefficient has to be adjusted by the interaction term. For example, for the HPO factor management quality, the score for D1 increases by 0.464, while the score for D2 decreases by  $0.464 - 0.683 = -0.219$ . The difference in the change is not significant for management quality at the 5 per cent level of significance; but for all other HPO factors, the differences between the two departments are significant. The negative signs for the coefficients for the interaction terms indicate that the changes are always lower for D2. Figure 3 gives a graphic depiction of the regression results, showing that for all HPO factors, the scores for D2 are lower than those for D1 in 2012.



**Figure 1.**  
HPO scores for D1 and  
D2 of Service in 2010

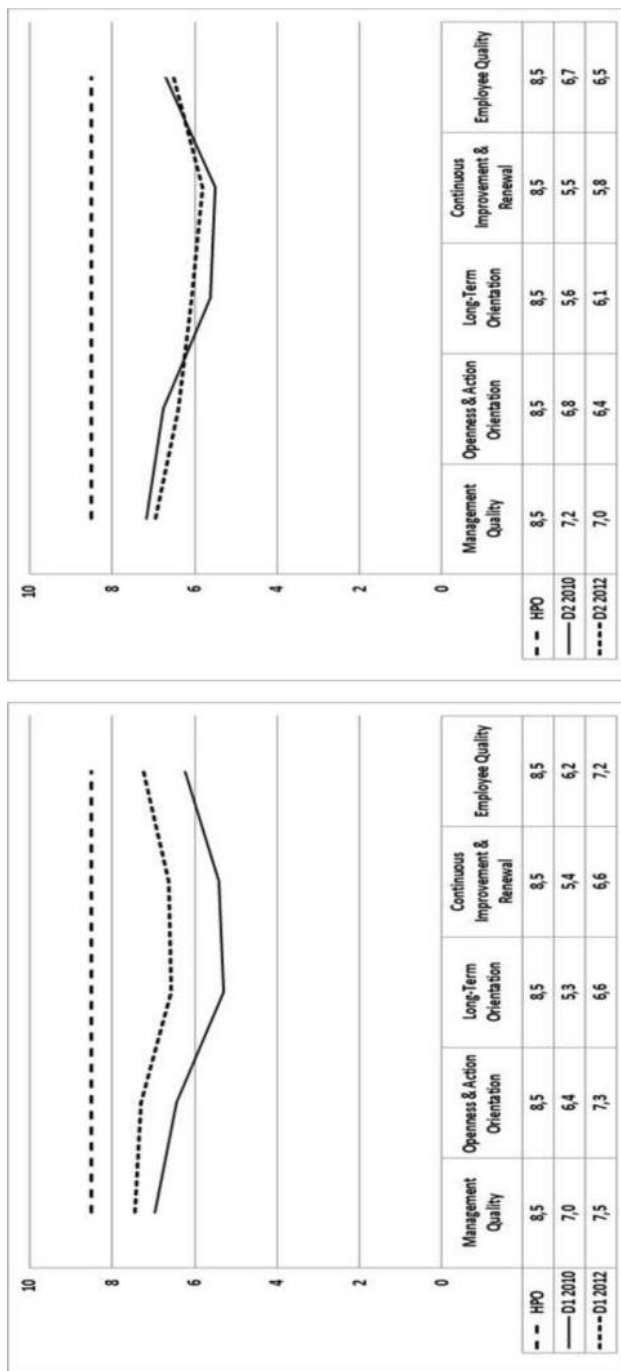


Figure 2. Service departments, comparison of HPO scores, 2010 and 2012

The average HPO score for D1 increased in 18 months from 6.1 to 7.0, while the average HPO score for D2 stayed the same. Scores for HPO factors were mostly significant, as Table II shows. During the period 2011-2012, no other improvement projects than the HPO transformation were conducted at Service and neither department had its own initiatives. However, interviews with managers and employees of both departments revealed a noted difference in management attitude toward the HPO transformation. In 2011, the newly appointed D1 management team took all HPO attention points seriously and worked dedicatedly on improving these. As a result, D1's results showed a considerable improvement: higher employee satisfaction, higher turnover, higher profitability and a higher share in Service's revenues. HPO attention points for this department now mainly dealt with involving employees in even more important processes, such as setting a customer-focused strategy for the department; simplifying work processes and accompanying accountabilities; and strengthening the coaching skills of the managers in the department.

In contrast, from the interviews conducted at D2, it became clear that D2's management did not focus on the HPO attention points whatsoever. This created frustration among employees and resentment of management and its style of leadership. This frustration was exacerbated by the fact that promises made after the first HPO diagnosis were not fulfilled. As a result, performance of D2 deteriorated, resulting in decreased line department satisfaction with the service provided to them by D2 and an atmosphere of general resignation among D2 employees. The advice for D2 was, therefore, not to identify new HPO attention points as the "old" attentions points were still valid. Management now had to become serious about addressing these attention points to turn the tide in the department.

The conclusion reached after the second HPO diagnosis at Service was that departments which dedicated attention to the HPO management practices achieved positive results.

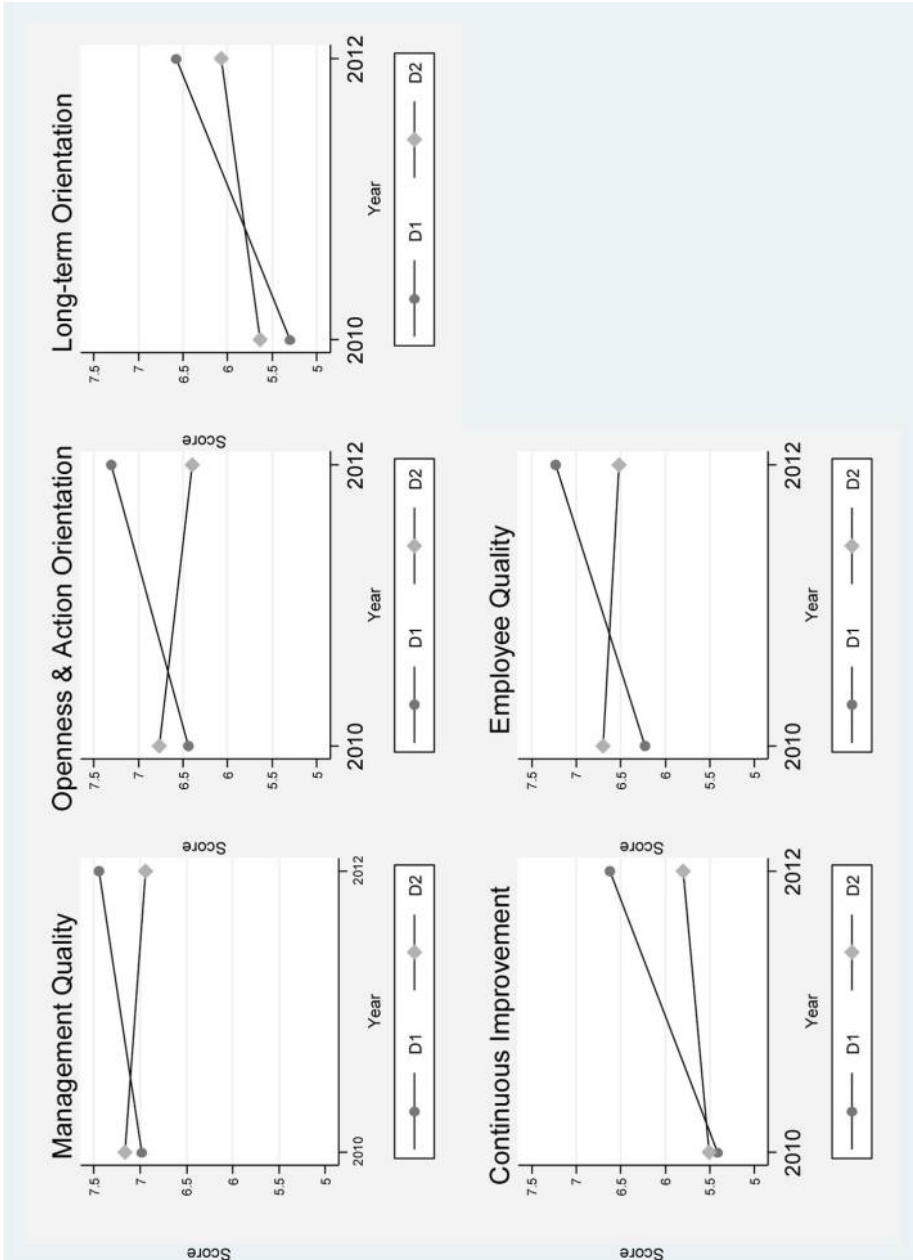
#### 4.2 Technology company

Based in the UK, a technology company (Technology) was also an average performing company seeking to become an HPO. Technology employed approximately 5,000 people working in 12 locations scattered all over Great Britain, each basically offering the same type of technology services in its region and, as with Service, using the same processes, systems and procedures. Two company-wide HPO diagnoses were performed, basically in the same manner as described for Service, the first done in 2011 and the second 1.5 years later, i.e. at the end of 2012. Table III provides information on the respondents.

Variable	(1) Management quality	(2) Openness and action orientation	(3) Long-term orientation	(4) Continuous improvement	(5) Employee quality
Yr 2012 (dummy)	0.464* (2.411)	0.868*** (5.023)	1.281*** (6.937)	1.210*** (6.887)	1.008*** (5.844)
Staff (dummy)	0.181 (0.583)	0.329 (1.177)	0.334 (1.120)	0.096 (0.337)	0.475 (1.706)
Yr 2012*staff	-0.683 (-1.559)	-1.236** (-3.146)	-0.843* (-2.008)	-0.920* (-2.303)	-1.194** (-3.043)
Constant	6.983*** (45.735)	6.442*** (47.032)	5.297*** (36.186)	5.412*** (38.854)	6.228*** (45.550)
N	333	333	333	333	333
R <sup>2</sup>	0.021	0.084	0.134	0.144	0.099

Notes: *t*-statistics in parentheses; \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001

**Table II.**  
Results of the  
regression analyses  
for Service



**Figure 3.**  
Overall HPO scores for  
D1 and D2 of Service



In general, most locations achieved an increase in HPO scores. Figure 4 shows the HPO scores for both locations L1 and L2 for the years 2011 and 2012.

A linear regression analysis was performed on the data from 2011 to 2012 to evaluate whether this increase in HPO score was significant. Table IV gives the results of the regression analysis for two locations: L1 is location with the highest HPO score, and L2 is the location with the lowest HPO score.

The regression model is similar to that of the previous case:

$$HPOFACTOR = \beta_0 + \beta_1 \times year2012 + \beta_2 \times L1 + \beta_3 \times year2012 \times L1$$

In this formula, HPOFACTOR stands for each of the five HPO factors; year 2012 is a dummy variable (0 for 2011; 1 for 2012), and L1 is a dummy variable for the better performing location (0 for L2; 1 for L1). Again, the interesting part in the model is the coefficient for the interaction term ( $\beta_3$ ), which signifies the difference in the change in the score for the HPO factor, from 2011 to 2012. In contrast to the previous case and as shown in Table IV, the coefficients for location L1 are significant, indicating that L1 was outperforming L2 at the start. The coefficient for year 2012 signifies the change (a decrease) in the performance of L2, as illustrated in Figure 5. The overall improvement in the scores for L1 can be calculated as the sum of the coefficients for year 2012 and for the interaction term, which is positive for all HPO factors, as the absolute values of the coefficients of the interaction terms are larger than those of the year 2012 coefficients. However, even though the patterns in Figure 5 suggest systematic better performance for L1 (improvements for all factors for L1 versus declines for all factors for L2), none of these differences is statistically significant at the 5 per cent level of significance.

During the 18-month study period, L1's average HPO score increased from 6.95 to 7.14, while the average HPO score for L2 decreased from 6.25 to 6.02 over the same period. Just as with Service, no other improvement projects were conducted in the period 2011-2012 than the HPO project and neither location introduced its own initiatives. Interviews at both locations with managers and employees revealed, just as with Service, a difference in management attitude toward the HPO project. At L1, the management team slowly decided to take up the attention points, while at L2 – a notorious closed location where there was not much interaction with other locations – management took a “not invented here” approach with respect to HPO and decided to continue with, what they called, business as usual. In this location, employees complained about a lack of leadership and a lack of development opportunities, leading them to become resentful toward their managers.

As a result of the different management attitudes, the locations showed a noticeable difference in performance. While L1 increased the services delivered over this period and achieved an increase in profitability, L2 actually delivered the same amount of service but with a lower profit margin. Again, just as at Service, it was clear that the location which paid attention to HPO management practices, even though not as much as it could have done, achieved better results than the location which basically ignored the HPO attention points.

**Table III.**  
Research population at  
Technology, first and  
second HPO diagnoses

Respondents	2011			2012		
	Total respondents	Managers	Employees	Total respondents	Managers	Employees
Technology company	1,020 (response rate: 63.4%)	91	929	1,436 (response rate: 57.4%)	65	1,371
L1	219	15	204	165	8	157
L2	81	5	76	61	3	58

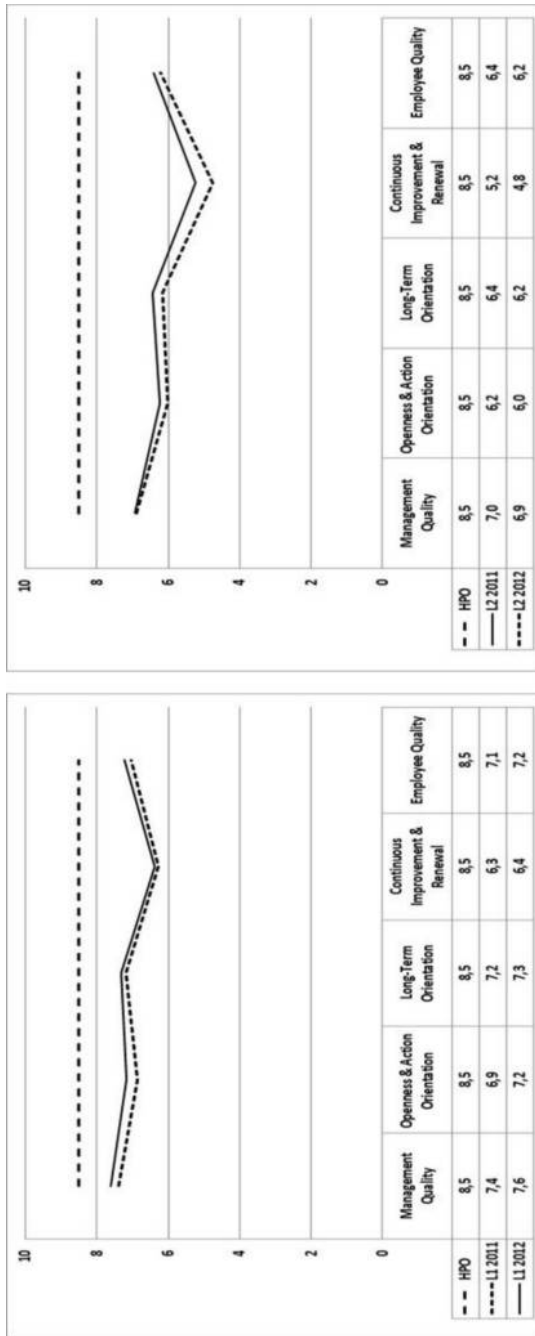


Figure 4.  
Technology unit's  
HPO scores, 2011 and  
2012

## 5. Conclusions

### 5.1 Discussion of the findings and practical implications

The starting positions for the Service departments (D1 and D2) were identical as were the starting positions for the Technology units (L1 and L2). The only improvement initiative in the time period evaluated was implementing the HPO framework. At each company, developments in the organizational environment affected both departments respective units equally. The only difference was the dedication with which management addressed the HPO attention points. In fact, this difference was crucial to the outcome.

Several relatively recent studies illustrate why D1 and L1 in the case companies performed so much better than their counterparts, D2 and L2, after implementation of the HPO framework. The empirical evidence matches the findings of Wolf (2008), who, in a review of what caused the performance differences between 12 facilities of a health-care provider, found that two of the main reasons for these differences were the quality of management and the way effective managers inspired and communicated with their employees. The importance of management commitment to improvement demonstrated in this study also matches the research of Gostick and Elton (2012), who saw the results of badly performing departments increase after managers from well-performing departments were transferred to these low-performing units. Also, Foss and Klein (2014), after studying leading organizations, came to the conclusion that management authority is essential in situations where decision-making has to be fast, internal coordination is needed and crucial knowledge is concentrated in the management team.

This longitudinal study suggests a clear causal link between the HPO framework and increased organizational performance. Thus, our research question, *Can causality be proven to flow from implementation of the HPO framework to organizational performance?*, can be answered in an affirmatively way. In addition, our hypothesis, that for the companies studied, their organizational performance is increased by applying the HPO framework (i.e. causality flows from applying the HPO framework to organizational performance) and not that because companies have increased organizational performance, they are able to apply the HPO framework (i.e. causality flows from to organizational performance to the application of the HPO framework), is proven.

The theoretical implication of our study is that the longitudinal study design seems to be a suitable method to evaluate possible causal links between certain management practices and organizational performance, and we urge other researchers in the field to apply more longitudinal studies. This can make sure that the management practice under investigation is not one that just has a short lasting positive effect (Axson, 2010; Parnell *et al.*, 2012). This will contribute to decrease the gap in the extant literature where there is a distinct lack of studies that evaluate the effectiveness of organizational improvement techniques

Variable	(1) Management quality	(2) Openness and action orientation	(3) Long-term orientation	(4) Continuous improvement	(5) Employee quality
yr 2012	-0.044 (-0.163)	-0.222 (-0.906)	-0.270 (-1.140)	-0.463 (-1.869)	-0.184 (-0.787)
L1	0.435 (1.791)	0.615** (2.826)	0.735*** (3.492)	1.048*** (4.772)	0.641** (3.082)
L1*yr 2012	0.267 (0.770)	0.534 (1.720)	0.400 (1.332)	0.546 (1.743)	0.350 (1.179)
Constant	6.950*** (33.589)	6.241*** (33.662)	6.444*** (35.947)	5.235*** (27.982)	6.414*** (36.187)
N	522	522	522	522	522
R <sup>2</sup>	0.021	0.063	0.076	0.134	0.059

Notes: *t*-statistics in parentheses; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.00$

**Table IV.**  
Results of the  
regression analyses  
for Technology

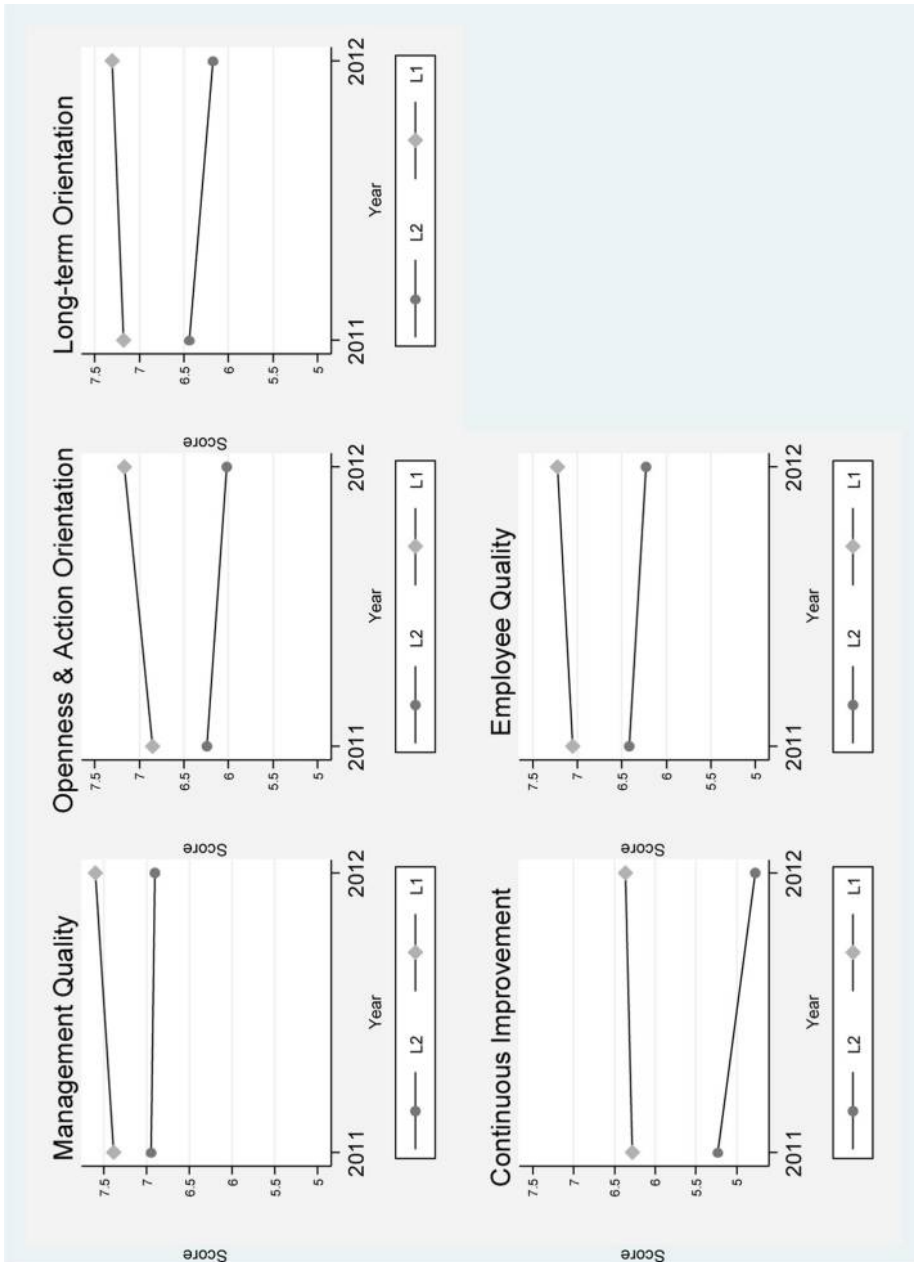


Figure 5.  
Overall HPO scores for  
L1 and L2 of  
Technology

(Rosenzweig, 2007; HakemZadeh and Baba, 2016). The practical implication of our research is that managers will have a better understanding of what is required from them as leaders when they choose the HPO framework as a means to transform their organizations into high performing ones.

### 5.2 Limitations of the study

The main limitation of the research is that, although coming close, causality could not be technically shown with 100 per cent certainty because we could not control for the personal circumstances of the managers of the departments/units, which could have had an effect. Another limitation is that despite the fact that two case companies in two countries were studied, the research results cannot be generalized. In this research, most endogenous (i.e. internal organizational components) and even exogenous (i.e. circumstances in the surroundings of the organizations) variables were in principal controlled for. It cannot be ruled out that certain organizational components and local circumstances were not taken into account.

### 5.3 Future research

More research is needed in different types of organizations, especially non-profit and governmental, and in different countries, specifically non-Western countries. Also, longitudinal research over a longer period of time could be useful to see whether the initial differences in performance will be lasting over time (Axson, 2010; Parnell *et al.*, 2012). This will contribute to filling the gap in the extant literature where there is a distinct lack of studies that evaluate the effectiveness of organizational improvement techniques (Rosenzweig, 2007; HakemZadeh and Baba, 2016). Finally, more detailed research on specific management practices could reveal which of these practices has the largest positive effect on organizational performance.

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## Appendix. The five HPO factors with their 35 characteristics

### *Continuous improvement.*

- (1) The organization has adopted a strategy that sets it clearly apart from other organizations.
- (2) In the organization, processes are continuously improved.
- (3) In the organization, processes are continuously simplified.
- (4) In the organization, processes are continuously aligned.
- (5) In the organization, everything that matters to performance is explicitly reported.
- (6) In the organization, both financial and non-financial information is reported to organizational members.
- (7) The organization continuously innovates its core competencies.
- (8) The organization continuously innovates its products, processes and services.

### *Openness and action orientation.*

- (9) The management frequently engages in a dialog with employees.
- (10) Organizational members spend much time on communication, knowledge exchange and learning.
- (11) Organizational members are always involved in important processes.
- (12) The management allows for the making of mistakes.
- (13) The management welcomes change.
- (14) The organization is performance-driven.

### *Management quality.*

- (15) The management is trusted by organizational members.
- (16) The management has integrity.
- (17) The management is a role model for organizational members.
- (18) The management applies fast decision-making.

- (19) The management applies fast action-taking.
- (20) The management coaches organizational members to achieve better results.
- (21) The management focuses on achieving results.
- (22) The management is very effective.
- (23) The management applies strong leadership.
- (24) The management is confident.
- (25) The management is decisive with regard to non-performers.

*Employee quality.*

- (26) The management always holds organizational members responsible for their results.
- (27) The management inspires organizational members to accomplish extraordinary results.
- (28) Organizational members are trained to be resilient and flexible.
- (29) The organization has a diverse and complementary workforce. Long-term orientation
- (30) The organization maintains good and long-term relationships with all stakeholders.
- (31) The organization is aimed at servicing the customers as best as possible.
- (32) The organization grows through partnerships with suppliers and/or customers.
- (33) The management has been with the company for a long time.
- (34) The organization is a secure workplace for organizational members.
- (35) New management is promoted from within the organization.

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