INCREASING THE PERCEIVED LEVEL OF PSYCHOLOGICAL SAFETY IN ORGANISATIONS USING THE HPO FRAMEWORK

ABSTRACT

To make the process of innovation successful, organisations have to create an environment that is conducive to this process. This often means they need to undertake an organisational innovation. Two potential useful organisational innovations are to create a psychological safe environment for employees, and to become a high-performance organisation (HPO). Psychological safety - defined as the collective belief that the organisation is a safe place for interpersonal risk-taking - and the HPO - defined as an organisation that achieves results that are better than those of its peer group over a longer period of time – both aim to create a working environment in which it is safe to experiment, make mistakes, give feedback and challenge colleagues and management. In this article, we aim to research the mutual connection between these two ideas, by evaluating whether becoming an HPO will increase the perceived level of psychological safety in the organisation. Using a questionnaire, containing items that measure the HPO and psychological safety levels, administered at two case companies and interviews conducted at one of these companies, we are able to confirm that there is a positive significant relation between the high performance level of an organisation and the perceived psychological safety feeling of its employees.

Keywords: psychological safety, high performance organisations, HPO

1. INTRODUCTION

To address the 'Grand challenges' of the modern era, mankind is putting much hope on technical innovation (Bours *et al*., 2022; Isaksen *et al*., 2022). And quite rightly so, as technological advancement has brought us much economic growth and prosperity, and has solved many problems in the past. To make the process of innovation successful, organisations have to create an environment that is conducive to this process. This often means they need to undertake organisational innovation (Armbruster *et al*., 2008; Vogel *et al*., 2017). With organisational innovation we mean the dynamic and iterative process of introducing a new idea, product, service, method, process, technology, or strategy into the organisation (Read, 2000; Demircioglu, 2016). Organisational innovation is aimed at increasing the capability of the organisation to be innovative in developing products and services, which in turn help to address the 'Grand challenges.'

In the literature many ideas can be found that aim to support and foster organisational innovation. In this article, we focus on two of these ideas and their mutual relationship: (1) creating a psychological safe environment for employees; and (2) becoming a high-performance organisation (HPO). Psychological safety, defined as the collective belief that the organisation is a safe place for interpersonal risk-taking (Edmondson, 1999), has long been associated with a multitude of positive organisational outcomes such as reduction in employee turnover, more engagement and commitment, higher result-orientation, more productivity, less stress, more life satisfaction because of improved work experience, better information sharing, more collaboration and better teamwork, greater skills preparedness because of better learning behaviors, more application of newly learned skills on the job, higher levels of innovativeness, and better organisational results (Edmondson and Bransby, 2023; Frazier *et al.*, 2017 ; Gallup, 2017; Gartner, 2020; Newman *et al*., 2017 ; Zak, 2017). With so many positive outcomes,

creating a psychological safe work environment is on the top of management's agenda (Edmondson and Bransby, 2023) especially because the majority of employees do not feel safe in their workplace (Brunton, 2023), which is not conductive for being innovative.

The concept of the HPO originated in the '60s of the previous age but got traction in the management world after the publication of the book bestsellers 'In Search of Excellence' (Peters and Waterman, 1982) and 'Good to Great' (Collins, 2001). An HPO, defined as an organisation that achieves results that are better than those of its peer group over a longer period of time (de Waal, 2021), continuously innovates its products, services, processes and core competencies and thus is able to deal adequately with continuously changing circumstances by rapidly developing new products, services and processes to respond to market changes. To be able to do this, an HPO encourages creativity through cultivating an internal environment of learning, openness to change, challenging of old methods, an attitude of continuously seeking improvement, and an obsession with innovation, and all this in a culture of psychological safety for employees (Bach *et al*., 2019).

According to Edmondson and Bransby (2023), a gap in the literature pertains to how leaders can create psychological safety in their organisations, and they advocate more research on specific interventions leaders can use to build psychological safety in their organisations. In addition, Newman et al. (2017) state that most of the antecedents of psychological safety can be grouped under the rubric of a supportive environment in an organisation. In fact, Khandwalla (2018) states that the first step to increase innovativeness in an organisation is that organisation adopting an organisational design that is innovation friendly. Transforming to an HPO is just such an intervention aimed at creating a supportive work environment, and therefore our research hypothesis states the following: *Becoming an HPO will increase the perceived level*

of psychological safety in the organisation. We will test this hypothesis empirically with data collected at two case companies. This data will be collected through the HPO Questionnaire, an empirically validated list of questions based on the HPO Framework (de Waal, 2012, 2020), and the Psychological Safety survey (Edmondson, 2019).

The remainder of this article is structured as follows. The next two section describe the concepts of HPO respectively of psychological safety and their relation with innovation. Subsequently, the research approach used to test the hypothesis is discussed, and the empirical research results are given and analysed. The article ends with a conclusion, research limitations and opportunities for future research.

2. HPO AND INNOVATION

2.1 Connection between innovativeness and the high performance organisation

In the literature many studies can be found that, in quite different settings and contexts, link the level of high performance of an organisation with its ability to be innovative. For example, as early as 1994, Damanpour and Evan (1984) concluded, in their research at public libraries, that non-managerial and technical innovations have a higher correlation in high-performance organisations than in low-performance organisations, that managerial and non-managerial innovation complement each other in HPOs, and that the adoption of non-managerial innovations tended to trigger the adoption of technical innovations more readily than the reverse. Florida and Davison (2001) surveyed manufacturing plants that had adopted an environmental management system, and found that HPOs in general are environmentally innovative companies and have a high capacity for and commitment to innovation. Tuominen *et al.* (2004) explored the relationship between dimensions of adaptability of an organisation and its innovativeness, and found significant differences between low- and high-performing firms, as measured by their

innovativeness. Jones (2005) noted that an HPO is multifaceted and can be defined at several levels, including its level of high innovativeness. Tomer and Sadler (2007) described the ideal firm, the Z firm, which has developed its internal organisational capabilities in such a way that the firm is both highly competitive and highly responsible, and finds solutions for problems that are both acceptable to society and are sufficiently profitable in the long run. These firms are, according to these authors, HPOs, firms that are highly competitive and innovative as well as highly socially responsible. Mahdee and Teague (2014) assessed the efforts of Malaysian universities to upgrade their performance, and found that universities that became high performance universities not only created strong internal systems but also ensured they increased their intellectual capital by becoming more innovative. Vargas (2015) analysed empirical evidence related to leadership, organisational learning, innovation, and high performance and found that these are highly interrelated. Honyenuga *et al.* (2019) surveyed insurance companies in Ghana and found a strong positive relation between being an HPO and its level of innovation and its organisational performance. Puriwat and Hoonsopon (2021) noted, in their research on the performance of new product development teams, that organisations that are agile (which is one of the hallmarks of HPOs) are better in introducing novel products or services to the market in a turbulent environment. Finally, Xanthopoulou *et al.* (2023) investigated the relationships among HPOs, knowledge-management best practices, and organisational innovation in the Greek public sector, and concluded that the relationship between an HPO and innovation is significant and that HPOs tend to foster a conducive environment which promotes and supports innovation. Thus, from this literature review we can conclude there is a strong positive relationship between being an HPO and having a high level of innovativeness.

2.2 The HPO Framework

As mentioned before, we are using the HPO Framework (de Waal, 2012a+b) in our research. This framework constitutes a conceptual, scientifically validated structure (Do and Mai, 2020) which organisations can use for analysing how high performing they are and to decide which capabilities need to be strengthened in order to improve organisational performance and make it sustainable (de Waal and Goedegebuure, 2017). We are using the HPO Framework in our research as Do and Mai (2020) stated, based on an extensive literature review, that "across the HPO literature, we found only the HPO framework developed by de Waal as an example of scientifically validated conceptualization of HPO." In addition, this framework has been extensively tested in practice, as reported by Iqbal *et al.* (2022) based on a bibliometric Analysis of the HPO literature.

The framework was developed after an extensive review of 290 academic and practitioner publications on high performance. For each of the 290 studies elements that the authors indicated as being important for becoming a HPO were identified and categorized. Because different authors used different terminologies, similar elements were put in the same category. The resulting 189 categories were labelled '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 89 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 organisations were performing as to the HPO characteristics (on a scale of 1 to 10) and also how the results of the organisation they worked at compared to those of peer groups. The data of the respondents was statistically analysed (de Waal, 2012a+b, 2020), yielding five factors, all correlated with competitive performance.

The five HPO factors are (in Appendix 1 the HPO characteristics are listed):

- *Continuous Improvement and Renewal*. An HPO compensates for dying strategies by renewing them and making them unique. The organisation continuously improves, simplifies, and aligns its processes and innovates its products and services, creating new sources of competitive advantage to respond to market developments. Furthermore, the HPO manages its core competences efficiently, and sources out non-core competences.
- *Openness and Action-Orientation*. An HPO has an open culture, which means that management values the opinions of employees and involves them in important organisational processes. Making mistakes is allowed and regarded as an opportunity to learn. Employees spend a lot of time on dialogue, knowledge exchange, and learning, to develop new ideas aimed at increasing their performance and make the organisation performance driven. Managers are personally involved in experimenting thereby fostering an environment of change in the organisation.
- *Management Quality*. Belief and trust in others and fair treatment are encouraged in an HPO. Managers are trustworthy, live with integrity, show commitment, enthusiasm, and respect, and have a decisive, action-focused decision-making style. Management holds people accountable for their results by maintaining clear accountability for performance. Values and strategy are communicated throughout the organisation, so everyone knows and embraces these.
- *Employee Quality*. An HPO assembles and recruits a diverse and complementary management team and workforce with maximum resilience and flexibility. Employees are encouraged to develop their skills to accomplish extraordinary results and are held responsible for their performance, as a result of which creativity is increased, leading to better results.
- *Long-term Orientation*. An HPO grows through partnerships with suppliers and customers, so long-term commitment is extended to all stakeholders. Vacancies are filled by high-potential internal candidates first, and people are encouraged to become leaders. An HPO creates a safe and secure workplace (both physical and mental), and dismisses employees only as a last resort.

The 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 organisation, and the lower the HPO scores the lower the competitive performance.

2.3 The HPO Framework, innovation and psychological safety

In the HPO Framework, HPO characteristic 8 reads 'The organisation continuously innovates its products, processes and services'. Looking more closely at how this works out in practice (de Waal, 2012b), it becomes clear that people in an HPO are continuously innovating products, services, processes and core competencies thus constantly creating new sources of competitive advantage for the organisation. They rapidly develop new products, services and processes to respond to market changes. To be able to do this, they encourage creativity through cultivating an environment of learning, openness to change, challenging of old methods, an attitude of continuously seeking improvement, and an obsession with innovation. People in an HPO foster generating and experimenting with new ideas and then excel at implementing these. They continuously innovate current core activities while simultaneously developing new activities, and look for both incremental and disruptive innovations. They know what the unique core competencies of the organisation are, master these and then develop and renew these. They stick to what the company does best, keep core competencies inside the organisation and outsource non-core competencies.

In the HPO Framework, HPO characteristic 35 reads 'The organisation is a secure workplace for employees.' Again looking closer at the HPO in practice (de Waal, 2012b), it turns out that the managers in an HPO create a secure workplace by giving people a sense of psychological

safety. They work on retaining employees and do not lay off people until it cannot be avoided. They create an open atmosphere in which employees can voice criticisms and concerns, put forward ideas, are heard by management, and have the freedom to act and to do their jobs as they see fit. HPO managers also work on increasing the self-confidence of people as confident people feel more secure in their job and their activities, dare to speak up and in general behave more like high performance individuals. HPO managers make sure people know that failure to achieve the agreed upon targets will not get them fired, instead they will get trained in identified areas of weakness or will be moved in the organisation to places where their skills are more appropriate.

3. PSYCHOLOGICAL SAFETY AND INNOVATION

Edmondson and Bransby (2023) describe psychological safety as a state of reduced interpersonal risk and a psychological safe workplace as a work environment where people believe that candor is expected and possible. They state that many employees face a level of interpersonal risk that harms their ability to learn, innovate, and perform at work, and argue that organisations have to create a workplace where people can speak up, ask for help, offer ideas, provide dissenting views, and collaborate effectively across boundaries. In a psychological safe work environment, employees respect each other's competence, are not rejected by colleagues for speaking up, voicing ideas or voicing concerns, engage in constructive conflict, feel that it is safe to experiment and take risks, engage in open communication and dialogue, and seek feedback (Edmondson, 1999; Edmondson & Lei, 2014; Newman *et al*., 2017).

In relation to the connection between a psychological safe working environment and the capabilities of an organisation for innovation, a strong link can be found in the literature. For example, Gu et al. (2013) investigated the mediating roles of psychological safety and learning

from mistakes between the three dimensions of social capital and innovation at team level in Chinese high-tech companies, and found both to fully mediate the relationship between the relational capital and innovation in the teams. Using a sample of research-oriented teams in Chinese universities, Chen *et al.* (2016) showed that team psychological safety mediated the positive relationship between collectivism-oriented human resource management and innovation performance. Javid *et al.* (2019) examined inclusive leadership as a predictor of innovative work behavior with the mediating role of psychological safety in textile firms in Pakistan, and found that psychological safety mediates the positive effect of inclusive leadership on innovative work behavior. Andersson *et al*. (2020) conceptualized psychological safety as an organisational level phenomenon and showed that it is positively related to Norwegian SMEs' innovation performance and their product-, process-, service-, and business model innovation capabilities.

Based on a sample of Chinese companies, Cao and Zhang (2020) showed that workplace friendship is positively related to innovative behavior and psychological safety functioned as a mediator between them. Neukam and Bollinger (2022) noted, during their case studies of technological companies, that firms need to provide an environment where psychological safety is high so that employees feel free to share knowledge and include diverse perspectives through open and trustful interactions, which in turn positively influences creativity and innovation. Staneju (2022) conducted a literature review into the role of psychological safety in the process of knowledge sharing, and found that psychological safety is important for both preserving and encouraging knowledge and innovation by fostering a working environment in which employees are willing to question traditional ways of working, propose and develop new products and services, and to try out new work approaches without the fear of failing or repercussion. Mehmood et al. (2022) explored the impact of entrepreneurial leadership on team creativity through team psychological

safety and knowledge sharing among manufacturing firms in Pakistan, and found that team psychological safety and knowledge sharing positively mediated the relationship between entrepreneurial leadership and team creativity, and thus increased the innovativeness of these firms. Sacramento *et al*. (2023) argued that openness to experience (i.e. an individual's propensity to be imaginative, unconventional, and flexible in their work) in a team leads to a climate of team psychological safety, which in turn leads to higher team creativity and thus more innovativeness. After testing their hypothesis in three studies (among students, and in the UK automotive industry and Portuguese healthcare sector), they found positive associations between the constructs. A survey of manufacturing companies in China, conducted by Cai *et al.* (2023), showed that supervisor developmental feedback had a positive effect on employee innovative behavior through psychological safety, which increased competitive advantage and improved organisational performance. Finally, Zhao *et al.* (2023) explored the impact of ambidextrous human resource practices on employees' innovation performance while examining the mediating effect of psychological safety, and noted that employee psychological safety mediated the relationship between the HR practices and innovation performance. Thus, from this literature review we can conclude there is a strong positive relationship between creating a psychological safe working environment and having a high level of innovativeness.

4. RESEARCH APPROACH

4.1 Method of study

For this exploratory study a qualitative approach in the form of two descriptive case studies was employed (Kwok, 2012). Exploratory research is an unstructured research design to gain information on the studied phenomenon (Yin, 2009). A descriptive case study describes, based on observing, collected data and reporting, the situation of an organisation. The case study format makes it possible for researchers to directly interact with people in the organisation in its natural

setting, with the means of interviews, which leads to greater understanding (Yin, 2009). Qualitative research aims to attain in-depth understanding of a phenomenon, in this case the connection between the HPO framework and the psychological safety of employees, at two different companies (Patton, 1987). Qualitative research is suitable when there is insufficient theory and literature on the topic to be researched (Yilmaz, 2013). In this case extensive research has been done on the development and application of the HPO framework, but not on the relation between this framework and psychological safety. In this study, a questionnaire was administered at the two case companies, to collect the opinions of respondents, in a numerical way, on how far their organisation was on the way to the HPO status and how psychological safe the employees felt in these companies (Gog 2015). Additional at one case company semi-structured interviews were also conducted (Yilmaz, 2013) using an interview guide (Zikmund et al., 2004). The main advantages of using a qualitative approach in addition to quantitative data collection, is that it allows what, why, how questions, to better understand the nature of the phenomenon (Benbasat *et al*., 1987).

4.2 Measurement scales

Edmondson (1999, 2019) developed and validated a 7-item scale to measure psychological safety. This scale includes items that capture the perception of employees of how colleagues react to them, whether one can be his/herself and whether it is easy to ask for support and to experiment without fear of rejection. Newman *et al.* (2017) noted that, in a review of 42 studies that measured psychological safety, most of these studies used Edmondson's scale or versions thereof. In addition, Edmondson's scale has consistently been found to be reliable across these studies, and therefore we decided to use it in our research.

De Waal (2012, 2020) developed an HPO Questionnaire to measure the level of high performance of an organisation, and validated this questionnaire in many different contexts of industries, countries, organisational sizes and organisation types (Iqbal *et al.*, 2022). We decided therefore to use this questionnaire in our research.

4.3 The case companies

Swagelok Nederland Sales & Service B.V. (Swagelok NL) is an independent distributor of the USA Swagelok organisation with a focus on the Dutch region, of components for gas- and fluid systems. The company offers high quality Swagelok products and services like certified training programs, field surveys and assembly capabilities. The most important markets for the Dutch region are the Semiconductor-, Chemical-, and (green) Energy market. The Swagelok NL team consists of 48 employees and is located in Waddinxveen, The Netherlands. As a leader in gas- and fluid systems Swagelok NL is committed to support Dutch companies to solve their technical challenges in their energy transition with special focus on four areas: analytical instrumentation, high purity systems, gas distribution and hydrogen applications. The company provides seminars, practical solutions and training. Our research into psychological safety and HPO at Swagelok was part of the ongoing HPO-transformation at the company. Every HPO Diagnosis was accompanied with an extra theme, which in this case was psychological safety. In total, 43 employees responded to the combined HPO and Psychological Safety questionnaire.

The second case company preferred to stay anonymous. XYZ is a professional services company that performs support activities for its clients. The company is part of a bigger conglomerate and it employs approximately 70 people, consisting of professionals who mainly work on client sites in client teams, and support staff working in the office. XYZ had no safety policy while there were employees who had problems that seemed to be related to psychological safety. This was the

reason to conduct an organisational analysis at the organisation. Our research into psychological safety and HPO at XYZ was part of the business studies of one of the authors. In total, 21 employees responded to the combined HPO and Psychological Safety questionnaire.

5. RESEARCH RESULTS AND ANALYSIS

5.1 The statistical relation between the HPO framework and psychological safety

First, we evaluated the reliability of the psychological safety and HPO scales. The results show that the seven psychological safety items form one psychological safety factor, see Table 1. This means that the items that form the psychological safety scale have internal coherence, and seems to be a reliable representation of the feeling of safety within an organisation.

Scale	**Cronbach's alpha**	**N items**
HPO complete	0.971	35
Subscale CI	0.916	8
Subscale OAO	0.890	6
Subscale MQ	0.945	12
Subscale EQ	0.788	4
Subscale LTO	0.751	5
Safety	0.931	7

Table 1: Reliability statistics

Table 1 also show that the HPO factors have a high reliability, an outcome that has been achieved several times in the past, see for instance Bagorogoza *et al.* (2023), de Waal (2022), de Waal and van der Heijden (2015), de Waal *et al*. (2014), Hattingh *et al.* (2018), Santos and de Waal (2020). Subsequently, we averaged the HPO subscales across the items and did the same for the Psychological Safety scale, to then compute the correlations (Pearson's correlation) between each HPO subscale and the Psychological Safety subscale. The results are given in Table 2, with more detail provided in the Appendix.

Scale	Pearson's *r*	P	N
HPO complete	0.624	<0.01	64
Subscale CI	0.523	<0.01	64
Subscale OAO	0.594	<0.01	64
Subscale MQ	0.568	<0.01	64
Subscale EQ	0.565	<0.01	64
Subscale LTO	0.610	<0.01	64

Table 2: Pearson's correlations between the Safety subscale and the HPO scales.

Table 2 (and the Appendix) shows that the psychological safety scale is a good supplement to the HPO scale with regard to safety because the correlations of the safety factor with the HPO factors are high but not absurdly high (so this factor has to do with the HPO factors but is clearly not the same). And as the relations are positive and significant, we can conclude that our research hypothesis *Becoming an HPO will increase the perceived level of psychological safety in the organisation* has been validated.

5.2 The case company scores

In Table 3 the HPO characteristic and psychological safety scores of the two case companies (i.e. the averages for all respondents of an organisation) are given. In Figure 1 the HPO factor scores are depicted.

HPO factors/characteristics	Swagelok	XYZ
Continuous Improvement and Renewal		
1. The organisation has a strategy that sets it clearly apart from other organisation	7,5	7,0
2. Processes are continuously improved.	7,3	6,7
3. Processes are continuously simplified.	6,0	5,8
4. Processes are continuously aligned.	6,5	6,2
5. Everything that matters to performance is explicitly reported.	7,3	6,6
6. Both financial and non-financial information is reported to managers and employees.	7,7	5,9
7. Core competencies are continuously innovated.	7,3	6,3
8. Products, processes, and services are continuously innovated.	7,2	5,9
Openness and Action Orientation		

HPO factors/characteristics	Swagelok	XYZ
9. Managers frequently engages in a dialogue with employees.	7,0	6,8
10. Employees spend much time on communication, knowledge exchange and learning.	6,6	6,3
11. Employees are always involved in important processes.	7,1	5,4
12. Managers allow making mistakes.	7,5	7,8
13. Managers welcome change.	7,5	7,3
14. The organisation is performance driven.	8,5	7,7
Management Quality		
15. Managers are trusted by organisational members.	7,1	7,6
16. Managers have integrity.	7,7	8,0
17. Managers are a role model for employees.	7,3	7,5
18. Managers are fast decision makers.	6,7	7,2
19. Managers are fast action takers.	6,8	7,2
20. Managers coach employees to achieve better results.	6,8	7,3
21. Managers focus on achieving results.	8,3	7,9
22. Managers are very effective.	7,1	7,2
23. Managers are strong leaders.	7,2	7,3
24. Managers are confident.	7,3	7,7
25. Managers are decisive with regard to non-performers.	6,3	6,5
Employee Quality		
26. Managers always hold employees responsible for their results.	7,6	7,2
27. Managers inspire employees to accomplish extraordinary results.	7,3	6,7
28. Employees are resilient and flexible.	7,6	7,3
29. The organisation has a diverse and complementary workforce.	6,8	6,0
Long-Term Orientation		
30. The organisation maintains good and long-term relationships with all stakeholders.	7,8	7,0
31. The organisation is aimed at servicing the customers as best as possible.	7,5	8,0
32. The organisation grows through partnerships with suppliers and/or customers.	7,1	6,4
33. Managers have been with the company for a long time.	5,3	6,1
34. New managers are promoted from within the organisation.	7,7	7,8
35. The organisation is a secure workplace for both managers and employees.	**7,8**	**7,0**
Psychological Safety		
P1. When someone in the organisation makes a mistake, it is not held against that person.	7,2	7,6
P2. In this organisation it is easy to discuss sensitive topics and problems.	7,0	7,5
P3. In this organisation, people are not rejected because they are different.	7,9	8,0
P4. It is absolutely safe to take a risk in this organisation.	6,8	7,3
P5. It is easy to ask colleagues in the organisation for help.	8,1	8,4
P6. No one in this organisation is knowingly acting in a way that undermines colleague's efforts.	8,0	8,1

HPO factors/characteristics	Swagelok	XYZ
P7. Everybody's unique skills and talents are valued and used by the colleagues.	7,7	7,9
Average psychological safety score	**7,5**	**7,8**

Table 3: The HPO characteristic scores for both case companies

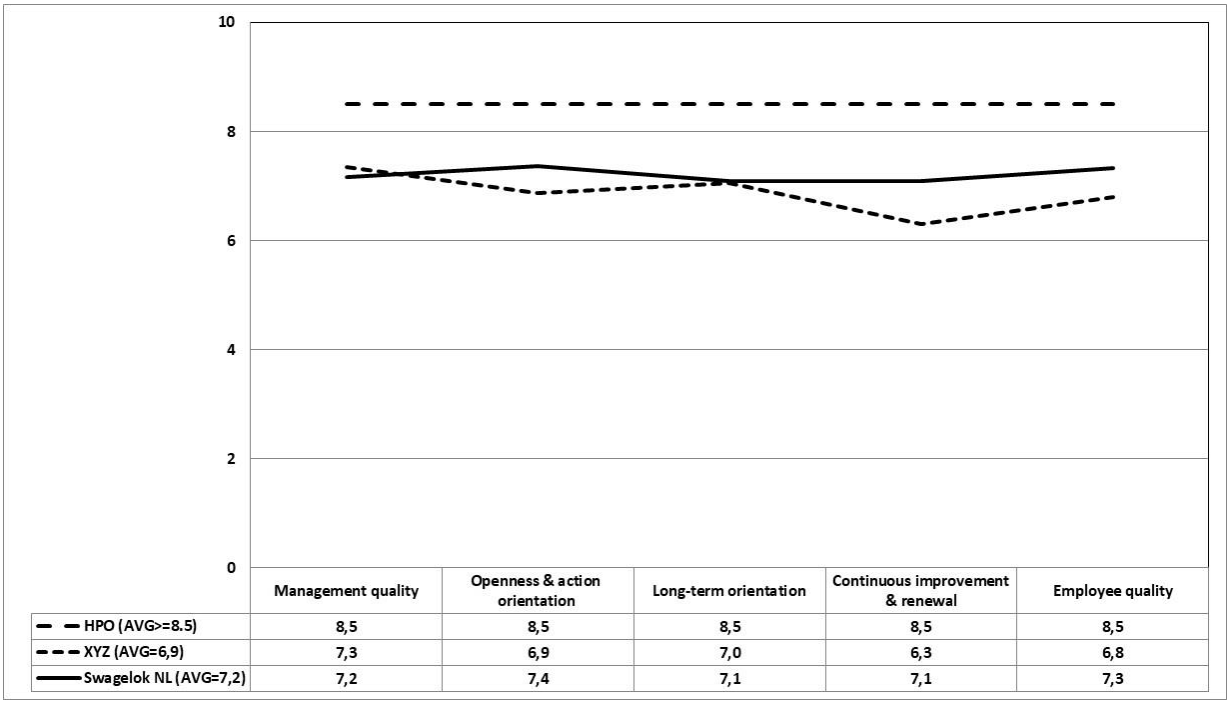

Figure 1: The HPO factor scores for both case companies

Figure 1 shows that both case companies are not at the HPO level yet (which is at 8.5), and that Swagelok NL is more in balance than XYZ (as its score line is almost straight, depicting the fact that all HPO factors are equally important and therefore should have more or less the same score). More importantly, Table 3 shows that, on face value, there seems to be a relation between the HPO score on characteristic 35 'The organisation is a secure workplace for both managers and employees' and the average psychological safety score, for both case companies, as these scores are in the same range when taking into account the standard deviation for both the HPO scores and the safety scores (1.6 respectively 1.9 for Swagelok; 1.7 respectively 1.5 for XYZ)

5.3 The interviews

At one of the case companies, XYZ, interviews were held to discuss the scores from the questionnaire and to find possible causes and explanations for these scores. No interviews could be held at Swagelok NL due to time constraints. In-depth interviews give interviewees the opportunity to freely express themselves in sharing information and giving their perceptions of issues that could be helping or hampering achieving psychological safety at their organisation (Pole & Lampard, 2002; Rabionet, 2011). The interviewees were interviewed at the company's premises, and consisted of two managers and six employees of XYZ. Each respondent had been with the company for a considerable time. Notes were taken during the interviews. Subsequently, the data from the interviews were transcribed and analysed thematically along the lines of the HPO factors (Huberman and Miles Matthew, 2002). A summary of the interview results is given underneath:

- *HPO factor Management quality* - Leadership is an important topic for a psychologically safe working environment. The interviews revealed a number of issues, namely the failure of employees to follow the training plan, a lack of decisiveness in following up on agreements, and a limited awareness of the core competencies. Much of this could be traced back to a lack of clarity among the employees about their tasks, responsibilities and authorities. Therefore management had to urgently revise the current job descriptions so that these tasks, responsibilities and authorities not only became clearer but were also assigned to the right people in the right place in the organisation.
- *HPO factor Openness & Action Orientation* - At first glance the interviews seemed to indicate there was sufficient dialogue between managers and employees and between the various departments. Yet, not all employees dared to speak to each other about undesirable behavior or work results. Based on more probing during the interviews, a lack of understanding of and trust

with business processes was identified, especially the hand-over process from the work preparation/planning department to the professionals in the field. This lack of optimal process coordination and lack of courage to address each other did not contribute to a psychologically safe working environment according to the interviewees. A possible way forward was to organize regular meetings in which planning and auditors could discuss issues and develop mutual understanding and respect. In addition, it seemed advisable to carry out a personality test, coupled with team training, to promote dialogue and communication between departments and colleagues.

- *HPO factor Long-term orientation* - Employees felt they did not get enough structural information on the processes they could in influence a positive manner, such as customer satisfaction and complaints. They therefore felt sometimes that they were unjustly and unfairly address by management on disappointing results in this area. Management therefore had to start paying structural attention to the results of customer satisfaction and complaints during meetings, assessment and progress discussions.
- *HPO factor Continuous Improvement and Renewal* - Employees had little familiarity with XYZ's quality management system, and the organisation lacked a safety management system. Improvements were addressed by the organisation, but there was no structural approach for evaluating improvements and employees were not familiar with any procedure for this. This made them uncertain how to handle quality and safety issues. The organisation was advised to finalize the concept procedures in the field of safety, that had indeed been developed and were available, into final versions and communicate these plans to employees. Also, the reporting of unsafe situations and status of improvements had to monitored in accordance with the finalized procedures.
- *HPO factor Employee quality* - There were opportunities for XYZ to improve psychological safety by training employees in flexibility and resilience and by utilizing their talents, in a way

that mutual cooperation would be promoted. Management was urged to conduct personality tests and use the results to make better use of the talents of employees.

6. CONCLUSION, CONTRIBUTIONS, LIMITATIONS AND FUTURE RESEARCH

This research set out to validate the research hypothesis *Becoming an HPO will increase the perceived level of psychological safety in the organisation*. Based on a questionnaire, containing items that measure the performance level of- and the psychological safety environment in an organisation, and subsequent statistical analysis we showed that the factors of an HPO are all correlated with psychological safety in a positive way. Thus, we concluded that becoming an HPO will indeed increase the psychological safety in an organisation. In addition, the interviews at one of the case companies provided quantitative evidence that psychological safety as perceived by employees can be improved by undertaking targeted actions for each HPO factor.

The theoretical contribution of our research can be found in the addition the research results provide to both the literature on high performance, and then especially on the HPO Framework (de Waal, 2012), and the literature on psychological safety. The fact that the psychological safety scale of Edmondson (1999, 2019) was once again validated is not that spectacular as this has been done before multiple times. But the connection made between this scale and the HPO measurement scale certainly is novel and thus can serve for further expansion into research into psychological safety in organisations and specifically HPOs. In addition, the interviews added to our knowledge about specific interventions leaders can use to build psychological safety in organisations, thus addressing, according to Edmondson and Bransby (2023, a ‘glaring gap’ in the literature pertaining to how to create psychological safety. This last part also constitutes the practical contribution of our research, as organisations and their leaders now have additional

information at their disposal with which they can increase the psychological safety as perceived by their employees.

There are several limitations to our study, that in itself provide opportunities for future research. The most obvious limitation is the low number of respondents in the study. And although we obtained date from two organisations operating in different sectors, we have to be careful to generalize our findings. Thus, future research should aim to get data from larger numbers of respondents, from multiple organisations in different sectors and of different organisational sizes. Research in different cultural settings would also be welcome, to evaluate the cultural influences on perceived psychological safety and on improvement actions. Another opportunity for future research is to conduct longitudinal studies, to evaluate whether increasing the HPO scores, and thus the high performance level of an organisation, indeed results in increased psychological safety feelings among the employees of that organisation. Such studies also give the opportunity to identify and gauge additional actions aimed at creating and maintaining a psychological safe working environment.

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APPENDIX – DETAILED CORRELATION SCORES

Factor		HPO overall mean	Continuous Improvement	Openness and Action orientation	Management Quality	Employee Quality	Long-Term Orientation	Psychological Safety
HPO overall mean	Correlation Sig. (2-tailed) N	1.000 . 64	.869** .000 64	.930** .000 64	.933** .000 64	.881** .000 64	.912** .000 64	.624** .000 64
Continuous Improvement	Correlation Sig. (2-tailed) N	.869** .000 64	1.000 . 64	.765** .000 64	.695** .000 64	.736** .000 64	.738** .000 64	.523** .000 64
Openness and Action orientation	Correlation Sig. (2-tailed) N	.930** .000 64	.765** .000 64	1.000 . 64	.833** .000 64	.820** .000 64	.825** .000 64	.594** .000 64
Management Quality	Correlation Sig. (2-tailed) N	.933** .000 64	.695** .000 64	.833** .000 64	1.000 . 64	.759** .000 64	.830** .000 64	.568** .000 64
Employee Quality	Correlation Sig. (2-tailed) N	.881** .000 64	.736** .000 64	.820** .000 64	.759** .000 64	1.000 . 64	.833** .000 64	.565** .000 64
Long-Term Orientation	Correlation Sig. (2-tailed) N	.912** .000 64	.738** .000 64	.825** .000 64	.830** .000 64	.833** .000 64	1.000 . 64	.610** .000 64
Psychological Safety	Correlation Sig. (2-tailed) N	.624** .000 64	.523** .000 64	.594** .000 64	.568** .000 64	.565** .000 64	.610** .000 64	1.000 . 64

*** correlation is significant at the 0.01 level (2-tailed)*