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**Towards a Resilience Dashboard for the
Police Organization**

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Summary

The resilience of employees, or ability to bounce back from adversity, is important to measure for organizations if they wish to enhance it. Measuring resilience can be done using questionnaires combined with other data sources from within the organization, such as absence. In order to provide the organization with relevant and actionable information, a prototype of a resilience dashboard was developed to present these data. The dashboard was developed with the Dutch Police organization as a use case, since this organization experiences a need to enhance the resilience of their employees.

The elements of a user experience framework were used to guide the development of the dashboard. These elements range from abstract to concrete: from determining the broader goal of the dashboards, and the functionalities, to the interaction design, and look and feel of the dashboard. On the basis of earlier research it was expected that different management areas (team managers, human resources, and occupational safety and health advisors) required different kinds of dashboards. Against expectations, different management areas in the use case of Police did not require a different dashboard.

In order to adapt the dashboard to the needs of the future users, nine interviews were conducted to capture the needs of team managers, HR specialists and prevention supporters. In addition, interviews were conducted with a privacy officer within the Police organization. Needs included the need to support employee performance and wellbeing, to prevent and reduce absenteeism, to fit the right people to the right job, and to empower employees. Next to needs, participants were asked for more specific requirements concerning a resilience dashboard. Functional requirements included: data are uploaded frequently, the data are benchmarked, and the data and measured concepts are clearly defined.

Based on these needs and requirements a prototype of the dashboard was built. The participants were shown this version and were interviewed by phone about their opinions. Based on their feedback some alterations were made. Finally, in a group interview, the improved prototype was discussed leading to minor revisions.

The prototype dashboard that was developed consists of a screen with several tabs. The data can be consulted per team. The first tab is named "context" and shows data concerning the status of the team in terms of educational level, type of shift, and whether or not employees have done specific tests. The next three tabs are "demands", "resources", and "outcomes" which show factors that are used to measure resilience. The factors can be seen over time, and they can be compared with different teams, the organization as whole, or with specific goal they have set. The fourth tab is named "Dr Data" and shows the results of analyses based on large quantities of data, in combination with some advice for the organization or the team. The last tab is named "intervention" and provides support to find out more about what is going on, and to select an intervention.

Future ambitions are the implementation of the dashboard, and to develop it further with the use of data. In addition, the inclusion of employees and higher management as stakeholders is advised.

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1 Introduction

This report is a description of the development of a resilience dashboard (prototype) for the Dutch Police organization. This first chapter provides an introduction to the concept of resilience, and why a resilience dashboard could be of value to the Police organization. The second chapter describes the theoretical design framework and documents how the (qualitative) research was conducted. Chapter three describes the process of dashboard development based on the theoretical model. Lastly, Chapter four offers discussion and conclusions.

1.1 The importance of resilience

Lowering absence, improving employee wellbeing, and more importantly improving resilience (the ability to bounce back after adversity) are important goals for the Police organization (Smit et al., 2015). Absence within the Dutch Police organization is higher than the Dutch average (e.g. Huijs et al., 2014). A focus on resilience is not only a measure to decrease absence, but it can also be seen as a vital part of police craftsmanship, since it is part of the job to perform under pressure (Smit et al., 2015).

Resilience is the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma, with positive outcomes (such as health and wellbeing). Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity (Pangallo et al., 2015). This view of demands (stressful events, or tasks) and resources provides an explanation of why people handle situations differently, and with different outcomes. It is therefore essential for an organization to have insight into the demands and resources that are experienced by their employees, for the purpose of monitoring and developing effective interventions such as changes in policy, providing training or reorganizing work processes.

A model that includes demands and resources in order to explain and predict resilience outcomes is the job demands resources model (Demerouti et al., 2001; Schaufeli, & Bakker, 2004; Schaufeli & Taris, 2014). This model builds on, amongst others, the job strain model (Karasek, 1979) and the job demand-control model (Karasek & Theorell, 1990). It has been used to investigate resilience outcomes such as burnout, performance, motivation, engagement and turnover (Schaufeli & Taris, 2014; Bernston et al., 2012).

The model states that high job demands lead to strain and health impairment (the health impairment process), and that high resources lead to increased motivation and higher productivity (the motivational process; Schaufeli & Taris, 2014). Demands can be anything that places a challenge or threat on a person. Examples include things like the difficulty of the job, uncertainty of keeping the job, or role ambiguity (Bakker & Demerouti, 2007). Employees handle these demands differently based on the resources they are able to allocate, such as feedback, supervisory support, control, and participation (Demerouti et al., 2001).

Based on the job demands-resources model, a model of resilience was constructed in a related part of the project. For this model resilience is defined in terms of a process of sustained performance, motivation and health by handling demands (from

work, organization, incidents, and private circumstances) and by allocating (individual, team or organizational) resources (Paradies et al., 2015). The interplay between demands and resources predicts whether demanding circumstances lead to unfavourable outcomes such as low motivation, engagement, and productivity (Kamphuis et al., 2014). For example, a police officer may be subjected to different demands, such as a high work load, or severe incidents while on duty, and a lot of paperwork. However, if the police officer has sufficient resources, such as an optimistic outlook, support from management, colleagues, or family, and obtains recognition from the organization, outcomes may stay favourable, or return to a favourable level swiftly. Figure 1.1 depicts how the demands and resources of a person lead to certain outcomes depending on the process of appraisal, coping and available resources (Paradies et al., 2015). Measuring not only outcomes such as motivation and wellbeing, but also demands and resources, provides more actionable knowledge on how to increase the resilience outcomes.

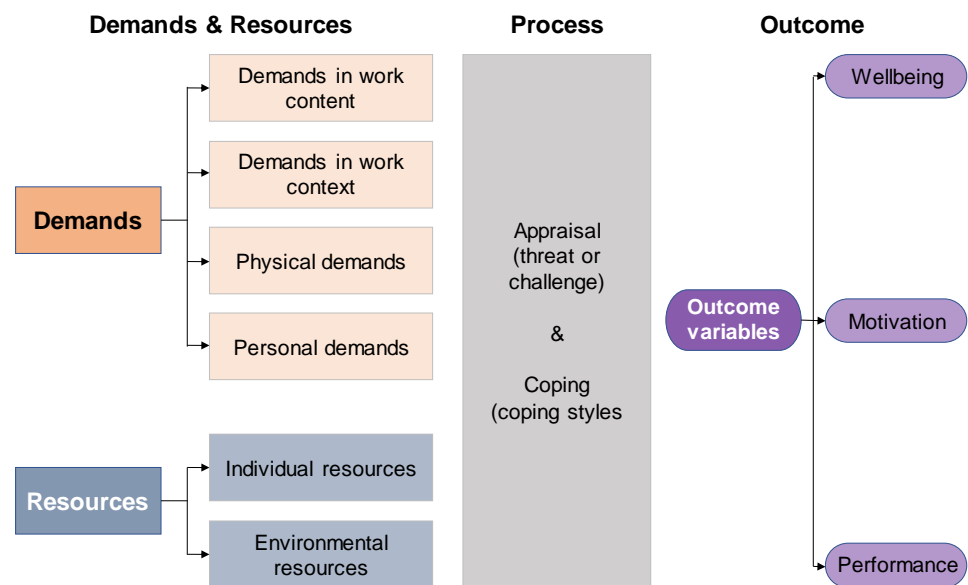


Figure 1.1 General model of resilience (Paradies et al., 2015)

1.2 Measuring resilience

Individual resilience (demands, resources, and outcomes) can be measured by questionnaires and wearables such as a smart watch. This information can provide support to the individual, via an individual dashboard (Binsch et al., 2015). Providing insight and advice into personal resilience can empower employees and hereby provide an incentive to keep filling in questionnaires, or providing data collected by wearables.

These data, which are relevant to the individual, could also be used on an aggregated level by their organization. Together with data that are already available such as sickness absence, and data from employee engagement surveys, these data could be transformed into information about the resilience of the different teams over time, with the goal to increase resilience outcomes, such as wellbeing, motivation and performance. When an organization has valid resilience information, this organization is able to formulate resilience directed goals, and steer towards these goals. For exam-

ple, one of the preconditions that employers take action for improvement in their team or organization is that they have sufficient awareness of problems, and that the right information and knowledge are available, which include relevant and specific examples (Houtman et al., 2012).

1.3 Earlier resilience dashboards

In order to present the data in a way that is flexible and provides possibilities for exploration, an interactive dashboard is an interesting solution. In recent years a resilience monitor (questionnaire) and dashboard have been developed for different parts of the Police organization (Delahaij et al., 2012; Delahaij & Kamphuis, 2014; Delahaij et al., 2014; Delahaij et al., 2015; Kamphuis et al., 2014; Kamphuis et al., 2015).

The monitor and the accompanying dashboard utilise parts of the employee engagement research that was already performed by the Police organization and several “new” questionnaires that were developed to paint a full picture of resilience. The dashboard gives an overview of the demands, resources and outcomes as measured at a given point in time. The dashboard has been evaluated positively by team managers. They find the dashboard insightful and useful to get into conversations with employees, other team managers, or unit managers (Delahaij et al., 2014; Kamphuis et al., 2015). The monitor was adapted for different target groups, such as family investigation and district investigation, to ensure that the information is applicable and actionable. One of the things that this dashboard does not yet do is show relationships between the resilience variables. Relationships would make it possible, for example, to see which (root) causes of resilience scores should be handled for the most effect on resilience.

In addition, the dashboard does not yet provide advice concerning a direction for intervention. When the right information is available, interventions to improve resilience can be chosen based on data. In the Police organization different interventions have been provided to increase (aspects of) resilience (Houtman et al., 2005). A recent list of interventions describes several new interventions such as: a “mental power” training directed at increasing internal resources and how to perform under pressure; a programme named “Fit@NP” which aims at mental power, nutrition, and exercise; a “self-screener” which can be used by an individual who wants to receive feedback at his or her mental health, in combination with a consult with a psychologist; the resilience monitor as described above; and a special debrief after a severe incident (Smit et al., 2015). The new dashboard should include the option of including existing interventions, as well as advice on an intervention direction.

Therefore, the aim is to develop a dashboard showing data at team level that is smarter, and provides more options to take action. In addition, we want the dashboard to be usable by different management areas within the Police organization. Therefore we included representatives of different target groups in the development of the dashboard.

1.4 Management areas

Resilience of employees is relevant for different parts, or management areas, of the organization, as it is connected to the aims and goals they are set to achieve in their

functions. There is an indication that the management areas (human resources management, team management, occupational safety management and health and quality management) find different types of data relevant for their work in relation to resilience (Wiezer & Putnik, 2015). For example, information related to work demands, resources and wellbeing of employees is of interest to the team manager, while the quality management is interested in a narrower range of data that pertain more specifically to the quality of the product, or service that an organization provides. To make adequate decisions and reach their own performance goals, these four different management areas use different sources of data. On the one hand, there are quantitative data, originating from, for example, employee satisfaction surveys or human resources absence data. On the other hand, there are qualitative data, based on interviews/talks with employees within the department and organization.

Large organizations usually have all four management areas carried out by different people, while smaller organizations sometimes join some of the management areas in one function and may have less extensive job descriptions for some management areas.

1.5 Aim of the current research

The aim of the current research is to develop a prototype of a resilience dashboard based on individual data, from different sources, that gives relevant information to different management areas (human resources, occupational safety and health management, quality management and team management) and could thereby be used to improve the resilience of employees and provide advice about types of intervention options.

2 Method

In this chapter the theoretical framework that was used to guide the design of the dashboard will be described, as well as the data collection, sample, and the method of analysis.

2.1 Theoretical design framework

Designing a product takes a number of phases. In this report, we use the Elements of user experience framework of Garrett (2011) to describe the steps in a systematic manner (see Figure 2.1). We explain the framework through the lens of a resilience dashboard for the Police. According to Garrett, there are five elements in this process that go from an abstract to a concrete level: strategy plane, scope plane, structure plane, skeleton plane and surface plane. Every plane builds on a plane below.

The **strategy plane** consists of user needs and site objectives. User needs concern the objectives of management employees for the use of dashboard, while site objectives concern our, researchers'/designers', objectives for the dashboard.

The **scope plane** consists of functional specifications and content requirements. Functional specifications concern the features of the dashboard such as a need to compare certain data, or a frequency of measurement of certain data and its visual presentation in a dashboard. Content requirements are the variables related to resilience that managers would find useful to have in the dashboard.

The **structure plane** consists of interaction design and information architecture. Interaction design is about how the dashboard behaves in response to the managers' use of it. Information architecture is about how the content requirements are arranged on the information space.

The **skeleton plane** consists of three elements: information design, interface design and navigation design. Information design concerns presentation of resilience relevant data on a dashboard in such a way, that managers can easily understand it. Interface design is about arranging the interface elements of dashboard in such a way that managers can interact with the functionality of the system, such as for example choosing between different benchmark options. Navigation design consists of screen elements that allow the manager to move through information architecture of the dashboard.

Last plane, **the surface plane**, consists of the visual design, which is the look of the finished dashboard prototype.

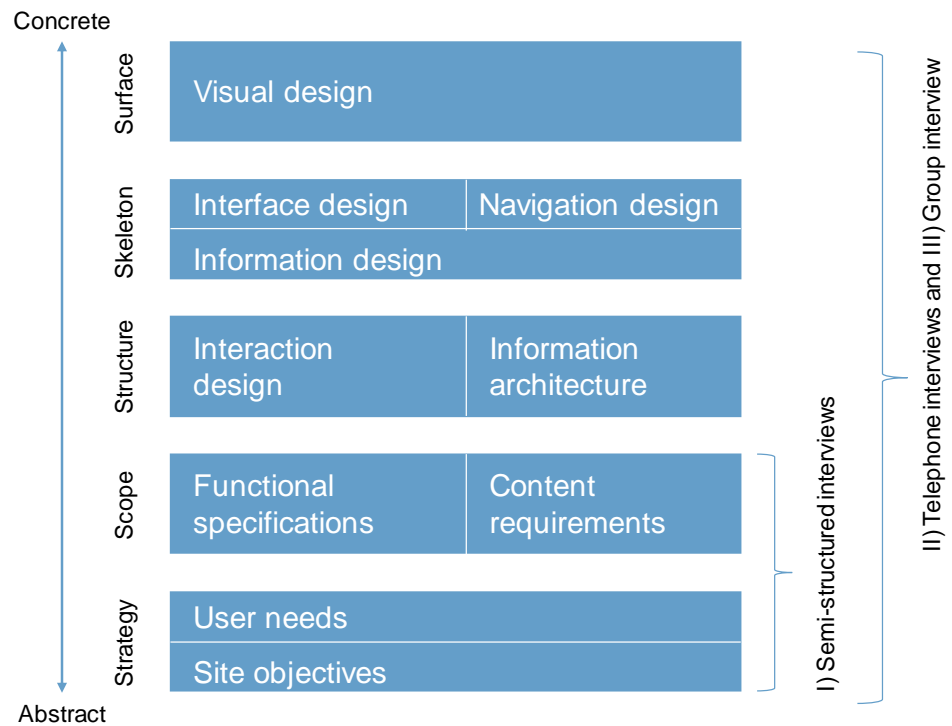


Figure 2.1 The elements of user experience (Garrett, 2011) linked to research design process

2.2 Data collection

Data collection consisted of three parts:

- I) Semi-structured interviews were conducted to examine strategy and scope planes of the dashboard; based on the input we designed a first prototype of the dashboard;
- II) Telephone interviews were conducted to test the structure, skeleton and surface design of the dashboard; based on this feedback a second prototype was created, which served as input for part 3;
- III) A group interview that was conducted at the end of the design process to validate the findings.

Based on the findings a final prototype was created (see Figure 2.2).

Semi-structured interviews took place from May to July 2017, telephone interviews took place in September 2017 and the member check group interview took place in October 2017. Participants for the study were recruited through snowball sampling. We started recruitment of participants for semi-structured interviews via the contact person (occupational health and safety manager), who has provided contact information of employees in different areas. Seven other employees were approached, but did not take part in the research because they were not given the time from their management, they passed on information of better suited candidates for our research, or they did not reply to the researcher's emails and telephone calls. At the end of every interview, participants provided us with one or two other managers to contact for this research.

Semi-structured interviews took place at the participants' work location and lasted on average one and a half hours. The topics discussed included function of the employee, current use of information in their function, objectives for use of dashboard,

needs concerning type of data and requirements for the 'look and feel' of the dashboard. See Appendix 1 for the topic list.

One week prior to the telephone interviews, participants received a dashboard prototype via email. During the telephone interview, the following topics were covered: the overall look and feel impressions, ease of use, variables and their presentation, and suggestions for improvement. See Appendix 2 for the topic list.

A group interview in the form of a workshop was organised for all participants in order to obtain more detailed feedback on the latest version of the dashboard prototype, and finetune it to their needs. In the group interview, all the elements of the user experience were examined once again and used for adjusting the prototype of the dashboard into a final version.

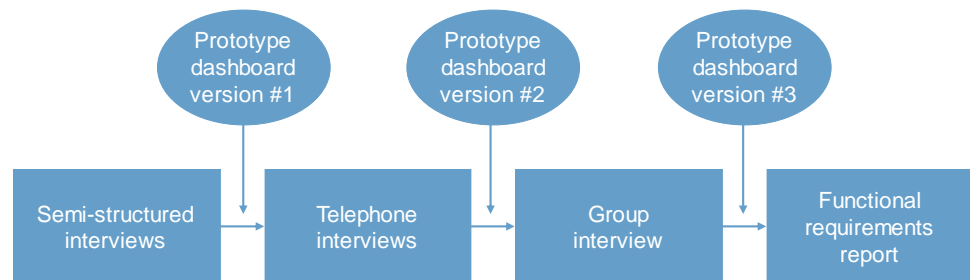


Figure 2.2 Overview of the research process

2.3 Sample

In the Police organization we found three relevant management areas: Human Resources (HR), team management, and Occupational Health and Safety management (OSH). By means of snowballing participants from the different management areas were found.

Semi-structured interviews were conducted with 10 managers in nine different locations of the national Police organization. Prior to starting the interviews, participants were informed of the research scope and were ensured of the privacy of their answers. In total, four participants worked in the human resource management area, three in occupational health and safety management (which is part of human resources), two in team management area and one was a privacy officer. Two participants who were team managers were also part of HR or occupational health and safety. One semi-structured interview was conducted via telephone due to travel distance.

In the second phase of the research design, telephone interviews took place with seven of the initial 10 participants. The third, and last part of the research design, group interview took place with four of the initial 10 participants, and one new participant from occupational health and safety.

2.4 Analysis

The data were analyzed in the following way. We first familiarized ourselves with the data. Subsequently, we organized the data into different topics, that are part of the framework of Garrett (2011). We also checked if data provided new topics, which

would fall outside of the scope of Garrett's framework and would contribute to the development of the dashboard process.

3 Results/Dashboard Requirements

In this chapter the process of the development of a prototype of the resilience dashboard will be described. The results are arranged according to the model of Garret (2011): strategy plane (user needs), scope plane (which functional content requirements), structure plane (arrangement of functionalities), skeleton plane (interaction design), and surface plane (look and feel).

For each plane the following information is given:

1. **Requirements:** what did participants mention as something they needed?
2. **Design:** how are the mentioned requirements translated into the design of the dashboard? Which requirements were not included and why?
3. **Evaluation:** how did the participants evaluate the design?

Screenshots of the final dashboard can be found in Appendix 3.

3.1 Strategy plane

3.1.1 Strategy plane: Mentioned requirements

The following needs at a strategic level were mentioned in the interviews. For each need a quote is presented as well as an indicator by which management area (Team management, Human Resources, and/or Safe and Healthy Working) the need was mentioned as relevant.

1. Need to prevent and reduce sickness absence

All participants mention high levels of absenteeism within the Police organization. This is one of their most important needs that they wish to satisfy by the use of the dashboard. Other needs that they mention (described here below) are thought to be possible solutions for contributing to lower absenteeism.

"It is our goal to get absenteeism under 6.5% this year" - Interview 9, OHS.

Mentioned by: Team Management/Human Resources/Occupational Health and Safety.

2. Need to support employee performance

All participants see themselves as responsible for providing support for their employees. Especially team managers are concerned with enhancing circumstances in order to increase the wellbeing of their people and the performance of their team. In addition, they are responsible for results regarding crime rates (performance).

"It is my job to make sure people can do their work properly." - Interview 1, Team manager.

Mentioned by: Team Management/~~Human Resources/Occupational Health and Safety.~~

3. Need for the right people at the right place (person-job fit)

The recent reorganization (started in 2013), in which 26 different police units were merged into 10 units. Unlike before the reorganization, currently all support functions such as HR, OHS and quality management are centralised in one location. This has also caused people to change jobs within the new organization. According to some participants, a group of employees ended up in jobs that may not suit them very well, causing underperformance. In order to increase performance and decrease absenteeism, it would help to increase mobility within as well as to jobs outside of the Police organizations. In addition, it was mentioned that within the organization there are shortages in some functions, while for others there is a surplus.

"We ask ourselves how we can get people to become more flexible, so we can place the right people at the right job. People are reluctant to consider a job they don't know." - Interview 5, HR.

"The question: 'are you in the right job?' has a negative vibe. We have an organization with a lot of different functions. That could be an advantage. You could say: 'you are not performing the best you could. What do you need?'" - Interview 6, Team manager.

"Unions have a strong position in this organization. That is of course a good thing, however, a lot of people have been placed in a job that they cannot handle." - Interview 7 OHS.

Mentioned by: Team Management/Human Resources/Occupational Safety Management and Health.

4. Need for insight into the progress of reintegration processes

When an employee is diagnosed as 'unable to work' by an occupational doctor, the employer is obliged to start a reintegration process to ensure the employee is given sufficient support to get back to work (in the same function, a different function within the organization, or a function outside of the organization). Safe and Healthy Working has the duty to monitor and support these processes and the direct manager plays an important role in the reintegration trajectory. However, since the reorganization, the process of reintegration and monitoring of its processes is not going smoothly due to difficulties with the software programme.

"Since the reorganization we work with an on team system. For me it is unclear what the processes are behind this system, and who are the people? Who can I call to fix an error in the system?" - Interview 9, OHS.

Mentioned by: Team Management/~~Human Resources~~/Occupational Health and Safety.

5. Need for Reliable and up-to-date Data

Many participants identified the need for reliable data, which would help them make impartial decisions. Such factual data would give insight to the team managers into the performance of the team, on basis of which they could guide their employees. For HR and OHS, they would use dashboard findings to give advice to the team managers on things they should pay attention to. In addition, teams are quite large, which

makes it hard for team managers to monitor wellbeing of all employees within the team.

Currently data are fragmented and sometimes a lot of time goes by between data collection moments, interpretation, and acting on the findings. When data are available real-time, direct action can be taken. The Police organization is starting with “people analytics”. There are plans being executed by HR to develop twelve dashboards to aid a manager to run his team. At the present moment, there are four: “capacity management”, “formation”, “absence”, and “financial control”. The other dashboards will be amongst others: “availability/capacity management 2”, “authorizations”, “screening”, “external hires”, “certificates”, and “resources” (weapons).

“I would like to base my decisions on factual information, data, instead of feeling.” - Interview 1, team manager.

“The span of control has gotten bigger, a manager hardly sees his employees. We just don’t know.” - Interview 7, VGW.

An advantage of the dashboards that are being developed is the possibility to look into detail per topic. However, what they still miss is seeing the connections between the difference aspects (e.g. how does absence relate to capacity management?). Cause and effect relations cannot be drawn in the current dashboard system.

Mentioned by: Team Management/Human Resources/Occupational Health and Safety.

6. Need to prioritize actions

Several participants mention that specifying target groups that score high on absence can help to prioritize: where to start with interventions. Furthermore, information about health aspects of different teams and departments could also give good insight for the management into the health related aspects that need extra attention in particular parts of the organization.

“If you know that absenteeism is most common within a specific age group, you can start there.” - Interview 6, team manager.

Mentioned by: Team Management/~~Human Resources/Occupational Health and Safety.~~

7. Need for Data Explanations

Besides obtaining factual information (such as absence rates or employee engagement), participants also have a need to understand the reasons why certain situations occur (e.g. what is sickness absence high and why is engagement low?). It would help them if the dashboard could make cause and effect visible between variables. In this way managers would know what to pay attention to, if they wish to bring about change (e.g. lower sickness absence or increase engagement).

“I would like to know the story behind the numbers that I see, so dashboards should give also the context information. Everything below a certain function level is more absent than the higher function levels. Why could that be?” - Interview 6, team manager.

“Combing data, that is what is missing. We need to become smarter about that. We often have to guess: why would this group have so much absence? It is a big problem for this organization.” - Interview 8, OHS.

Mentioned by: Team Management/Human Resources/Occupational Health and Safety.

8. Need for a Conversation Starter

Participants also mentioned that they would like to use the information from the dashboard as a way to start conversation with the team or with an employee, in order to come to a common solution to the problem. Some of the participants expressed the wish to have more open conversations with employees. For example, if they would see a worrying result in the dashboard, that could be a reason to start a conversation. Also, they said that some topics are hard to bring about, and that the dashboard could be a ‘neutral’ manner to start, sometimes painful, but very much needed conversations.

“I would use dashboards as a source for good talk with employees. Dashboard findings give you a reason to start discussions on certain topics” - Interview 4, team manager HR.

“We started an initiative to support managers on how to start a conversation with an employee.” - Interview 9, HR.

Mentioned by: Team Management/Human Resources/~~Occupational Health and Safety.~~

9. Need for Solid Interventions

Several participants mentioned that within the Police organization a lot of pilot interventions have been introduced, for example to reduce stress, and become more fit, but that it is unknown to what extent they have been used, and how well these have worked. Currently, all managers find their own solutions for problems that may be common in other parts of the organization. Participants expressed a need to be able to share these experiences and the effects of interventions with each other.

“There is so much happening already within the organization. It would be of great value if we could share experiences.” - Interview 9, OHS.

“Some teams are not yet balanced since we are still in the reorganization period. I need specific advise, what do I need to do to get a balanced team?” - Interview 4, HR manager.

Mentioned by: Team Management/Human Resources/Occupational Health and Safety.

10. Need for evaluating interventions

One of the participants mentioned that it would be useful to see whether a change in policy had an effect on wellbeing and performance. For example the policy that employees older than 55 were allowed to work less hours without a full pay cut for these hours. What kind of effect did it have on their health and wellbeing? In addition, there

have been different kinds of interventions in different parts of the Police organization, with vast differences in usefulness and effect.

“Some interventions in the form of a short training fall short of having an effect. People go to the training and afterwards they get back to their daily work and forget all about it.” - Interview 4, HR manager.

Mentioned by: Team Management/Human Resources/Occupational Health and Safety

11. Need for Collaboration

Need for cooperation between HR, Occupational health and safety (OHS) and team management was identified. HR and OHS give advice to the team management, and it is important that this advice is followed up on, to see what the effects are of the actions taken. In addition, the employees themselves also need to take responsibility for their own progress. Furthermore, HR employees do not always know which challenges police teams are facing, which prevents them from giving the most suitable advice to team managers.

“Managers do not often ask HR about extra insight into the data regarding absence and other variables in their team.” - Interview 2, HR.

“I have noticed that team managers often think they have knowledge on everything. They invent things that have already been invented. They do not ask for the expertise which is available within OSH.” - Interview 9, OSH.

“Teams in different part of the Netherlands differ in the challenges they are facing. By knowing more about this, HR advisors can become a better business partner.” - Interview 4, HR manager.

Mentioned by: Team Management/Human Resources/Occupational Safety Management and Health.

12. Need to exchange information

There was also a clear need for better exchange of information within each management layer. For example, there have been initiatives concerning resilience in different parts of the Police organization, without them knowing of each other's existence. Another example is that HR is developing different resilience dashboards, but that not all HR managers are aware of them.

“In a recent meeting with several HR employees it became clear that what they wished with regard to HR analytics is already being developed by us.” - Interview 2 HR.

Mentioned by: ~~Team Management~~/Human Resources/Occupational Health and Safety.

13. Need to empower employees

Participants also identified a need for employees to use the dashboard data. One of the participants suggested to make parts of the dashboard also available to employ-

ees and to involve them in the goals of the team. Using a personal dashboard could also be beneficial for their personal development.

The dashboard could also be used as a way to raise awareness about the importance of health, especially among employees themselves. By having insight into the information about their own health, they may become triggered to do something about health aspects on which they score sub-optimally.

“An added value of the dashboard is that employees themselves get insight into their personal data.” - Interview 3, privacy officer.

“We ask: what is your contribution to the team goals? Hereby we stimulate personal development.” - Interview 5, HR.

“Discuss at the team meetings: when you see this, what would be your ideas? How could we make it better?” - Interview 6, Team Manager.

“I think it would be very good if the dashboard could help people become aware of the importance of health and become interested in issues such as alcohol, smoking, overweight, inactivity, importance of good sleep.” - Interview 10, OSH.

Mentioned by: Team Management/Human Resources/Occupational Health and Safety.

14. Need to protect Image

One of the participants mentioned worrying about how having a lot of information about how the Police organization is functioning could make the organization vulnerable in case of a disclosure of administration (Wet openbaar bestuur verzoek). This means that by law a journalist (citizen) is allowed to request all information that is available. This could lead to bad press in case of poor scores on certain variables.

Mentioned by: ~~Team Management/Human Resources/Occupational Health and Safety.~~

3.1.2 Strategy plane: Design

Addressed needs

For the current resilience dashboard, we focused on satisfying the following organizational needs: need to support employee performance, need to prevent and reduce sickness absence, need for right people on the right spot, need for reliable and up-to-date data, need to prioritize, need for explanation, need for a conversation starter, need for solid interventions, need for evaluating interventions, and need to exchange information. For each need is described how it was addressed in the design of the dashboard.

- › The need to support employee performance will be addressed in the dashboard by developing the following aspects that will be monitored: work resources, work demands and health outcomes.

- › The need for the right people on the right spot will be addressed in the Status (overview) part of the dashboard. Here the managers will be able to see what the functions in their team are (requirements), and also how these requirements are filled (actual situation). On basis of this overview they will see if they have surplus or deficiency in people, and if there is a match on level of education.
- › In order to fulfil the need for reliable and up-to-date data, need to prevent and reduce sickness absence, need to prioritize, need for explanation, and need for a conversation starter, the Dr. Data application was developed. Dr. Data helps to find connections between factors, such as causes of sickness absence. More on Dr. Data is explained below.
- › The need for solid interventions, the need for evaluating interventions, and the need to exchange information were addressed by the Intervention application. More on the intervention application is explained below.

Excluded needs

For the development of the resilience dashboard prototype some of the needs identified by participants were not (yet) addressed. We did not include the needs concerning the individual employees and their empowerment. This decision was made because we wished to focus primarily on organizational needs. The empowerment of the individual is the focus of another part of the project. We also decided not to develop the dashboard for the monitoring purposes of reintegration trajectories, as that seemed to be a need of a different, very specific nature, and organizational software for this purpose already exists. One other need that the dashboard did not fully address was the need for collaboration between different stakeholders within the organization. We believe that the dashboard aids this need by providing the same information to the different management systems. However, we have focussed on the primary use of the dashboard for now. In a next step a tool to collaborate and divide tasks could be added. The need to protect the image was also not addressed as it falls beyond the scope of development of the dashboard since it has to do with policies and law.

Design of the Dr. Data and the Interventions application

Here we explain how we envisage the Dr. Data and the Intervention parts of dashboard, that were designed to fulfil the needs identified by the participants.

Dr. Data

Dr. Data is a module that has the ability to analyze the data in a (near) real time fashion and find relationships between variables and patterns over time. Based on the findings of its analysis Dr. Data will give advice on which action to take. The goal of the module is to predict problems concerning resilience (such as absence) in advance, and to provide suggestions for interventions - all data driven. One way Dr. Data could do this is by continuous learning from data that are provided through organizational systems, questionnaires, and other data sources. Based on historical data the system could recognize similar situations in the past and how these would play out with the current data. This would be immensely valuable since Dr. Data might find relationships that go against one's intuition or gut feeling, and can help counter faulty assumptions that have been relied on in the past. For these analyses to work properly, and come to valid advice, a large amount of data is necessary. When these data lack, the module could perform analyses on less data, with the use of theoretical

information on resilience. For this reason the concept of resilience patterns was explored and included in Appendix 4. Unfortunately, no ready available resilience patterns were found.

Intervention application

The intervention application is useful when Dr. Data is not yet sufficiently developed to perform analyses and can also serve as an inspiration source for tools that could be used by managers to deal with the challenges they face. Working with this module provides support with the design of custom interventions by providing guidance in the process and insight into possibilities. It was inspired by the work pressure guide that was developed to support organizations in coping with stress in the workplace (Bakhuys Roozeboom et al., 2016; Wiezer et al., 2012). The guide describes a process of intervention development and implementation and provides support, such as questions managers could use to talk to their employees, and a database with interventions. This database could also include the interventions already used within the police organization, such as AS FIT@NP. In short, the guide describes the following steps:

1. Measure work stress and engage employees to discuss whether something should be done;
2. Find the causes and prioritize, ask employees, find the problem behind the problem;
3. Find solutions and prioritize, solutions that make stressful situations less stressful, solutions that empower the employee, customize the solutions to the organization, consult employees;
4. Make a plan;
5. Evaluate.

The data that this module generates can be used by Dr. Data.

3.1.3 *Strategy plane: Evaluation by participants*

Participants of the telephone and group interviews felt that the prototype of the resilience dashboard satisfied their needs. They thought that by using the dashboard they would be able to improve their work related tasks and improve health and wellbeing of their employees. They hoped that such a dashboard could actually be developed. Participants did not identify any needs that were left unsatisfied.

3.2 **Scope plane**

3.2.1 *Scope plane's functional specifications: Mentioned requirements*

In the interviews several required functional specifications were mentioned.

Restricted access to individual level data

Some participants believed that individual level data from a dashboard should only be visible to the employee filling in the information, so that he or she can see how they do, and compare themselves with the average score within their team. This could be a prerequisite for employees to partake in the questionnaires. Lastly, they also

thought that it should be clear for the employee how their data would be protected (e.g. that no results are to be shared if less than 10 employees take part).

“The data may be available, but we need to agree on what we will use it for. Not all data may be used to determine the performance of an employee.” - Interview 3, privacy officer.

Some team managers, however, wished to have insight into individual level data for some variables, if that is allowed by the law. Other team managers believed only information on team level would be already sufficient.

“I am responsible for a lot of people, and I do not see them much anymore. I have to go on the moments that I see a person to determine how he or she is doing. It would be useful to have data at the personal level.” - Interview 4, HR manager.

“It would help me to receive information on group level. It would help me more to receive data at the individual level.” - Interview 6, team manager.

Differences in accessibility per role

Some participants thought there should be different access to information, depending on their role. For example, a company doctor was identified by some participants as the only one who could have access to individual data on health aspects, should the employee agree on sharing the data.

Data management outside of the organization

The participants informed us of the importance of giving the reassurance to the employees that their data will be safe and protected. Only when the employees trust the privacy of their answers will they participate and give input. One of the suggested ways to do this would be to outsource the data to a third party, so that it is not ‘owned’ by the Police, but by a ‘neutral’ third party who would safeguard privacy issues.

Data is updated frequently

The dashboard should be frequently updated with new data. Once a day updates on soft data (originating from surveys) were seen as too frequent and too burdensome for employees, while daily updates on sickness absence and formation of the team were seen as very much needed.

Data and concepts are explained

Participants mentioned that there should be definitions of the concepts available, so that everyone using the dashboard has the same interpretation of the findings.

“It would be useful to include definition of all variables or concepts. This way people with different functions interpret them the same way.” - Interview 2 HR manager.

Data are benchmarked with other teams and the performance in the past

Participants expressed a wish to see the performance of the team over time, i.e. there should be benchmarking in relation to the past. There should also be benchmarking in relation to other teams and the rest of the organization.

"I would like to have an overview of the means and benchmark it with the past performance of the team and benchmark it with performance of other teams." - Interview 1, team manager.

Data sources are combined

Participants would like the possibility of combining different sources of information such as behaviour and feelings of employees, and developments in the outside context, 'hard' data, in order to see if there are relations between different types of data.

"It would be very interesting to relate the behaviour of policemen and the challenges they face on the beat (at work)" - Participant 5, HR manager.

Effects of interventions can be monitored

Participants wished to monitor all the interventions that they have set about in order to deal with certain issues, and to measure the effect of these interventions. They also wish to be able to add external influences that may play a role, which can help them with interpretation of the data (e.g. major events in the external environment, such as reorganization, that can have direct effect on the team).

"You need a picture of the situation, what happened between two points in time? We just had a transition phase, that had an effect, but also the spirit of the time, within the organization and in the society. How much influence do these things have?" - Interview 8, OSH.

The application is easy to use

At the present moment there were systems available in which data concerning teams could be viewed. However, they were not user friendly in the sense that it required effort to login. Furthermore, software use was not intuitive.

"There are different systems that I have to use. I could not log in, and when I finally could it did not make sense." - Interview 6, Team manager.

Employees are stimulated to supply data

Several participants express their concern regarding the low response to questionnaires within the organization. In order to stimulate employees to fill in questionnaires they need to experience that the outcomes of these questionnaires are taken seriously, according to some participants.

3.2.2 *Scope plane's functional specifications: Design*

Addressed requirements

For the prototype of the dashboard we selected the following requirements: data are updated frequently, data concepts are explained, data are benchmarked with other teams and the past, data sources are combined, and data application is easy to use.

The dashboard is designed in such a way that it allows data to be updated at different frequencies. There are no restrictions on how often particular data points are to be filled in. Every concept will be explained when one goes over the concept with the cursor. Benchmarks will be available as follows: the user can choose which teams to compare oneself with and can choose moments of comparison. Ease of use is a

requirement we especially paid attention to. It was important for us that the dashboard is clear and intuitive to use and have also checked this with participants in our interviews.

Excluded requirements

In the current prototype there are no real data, so some of the specifications could not be implemented. Aspects relating to the privacy of the data were not designed in this phase of the development. This is an essential specification to be worked on in the next phase, when the actual, 'live' prototype is to be developed. Based on the results we have gathered in this research, we advise to follow the current privacy legal obligations. This would mean that health related data could not be shared with the employer, not even on a group level and that in this sense also some of the suggestions concerning differences in accessibility per role cannot be implemented. Furthermore, the issue of managing the data would also need to be tackled, for instance a neutral third party could keep the raw data sources. Stimulation of employees to supply the data was identified as crucial for implementation and full benefit of the dashboard. This aspect however, was not in the focus of the development of the prototype dashboard itself. This part should be paid attention to when it comes to preparation for actual implementation of the dashboard in an organization.

3.2.3 *Scope plane's functional specifications: Evaluation*

Participants understood the decisions we have made concerning functional requirements. For example, our argumentation concerning the importance of privacy was understood, so they agreed with not being able to see the data on the individual level. No functionalities were missed by the participants. Changes they suggested were about specific details, so no functionalities had to be adapted.

3.2.4 *Scope plane's content specifications: Mentioned requirements*

In the interviews several specifications regarding the content of the dashboard were identified. Below we present variables that were mentioned as useful for their work during phase one of this research (face to face interviews).

1. Background information per team level

The person should be able to compare all variables in Tabs 2-4 with variables in Tab 1.

- › Function level, including level of education required per function level.
- › Diversity (Sex, age, ethnicity, educational level).
- › Number of years working for the Police.
- › Number of years working in the current function.
- › Formation/staffing:
 - Under or overstaffed;
 - Insight into lack of people for certain functions;
 - Insight into overload of people for certain functions.
- › Crime rates:
 - Break ins (frequency, time, etc.);
 - Violent incidents.

2. Resilience data

Participants expressed a wish for relatively frequent collection of data, ranging from daily to quarterly. The following variables were mentioned as needed in the dashboard:

- a. Demands: workload (mental demands, physical demands, emotional demands), experienced stress*¹, work insecurity, work-home balance, context information from daily measures (open answers)*, shooting/violent incidents per employee, night shift (carrying out night shift yes or no, type of nightshift schedule), working hours per week, overtime per week, home demands (being a caregiver, having financial worries, moving/renovating home);
- b. Resources: autonomy, social support, growth and development opportunities (and wishes), coping (emotion based and problem based coping)*, recovery possibilities*;
- c. Individual level: police style (differentiation between different work styles developed by HR) talents/strengths;
- d. Outcomes: sickness absence (percentage, frequency, duration, pattern, in relation to other teams as well as on individual level); burnout*, employability, health (Blood pressure, smoking, alcohol consumption, weight, sporting), fitness (shortness of breath if you go up the stairs), well-being (time for hobbies, time for yourself), engagement*, sleep quality* (daily question via the app), motivation*.

3. Dr. Data tab

Significant and relevant relationships between all variables as analysed by the system should be visible (named Dr. Data).

3.2.5 Scope plane's content specifications: Design

Most variables mentioned by participants were incorporated in the dashboard prototype. Decision not to include some of the variables in the dashboard depended on the following aspects: privacy, or overlap with other (included) variables.

The following variables mentioned above by participants were not included:

- › Ethnicity: on a team level it would not protect individual identity;
- › Home demands: having financial worries and moving-renovating home: these aspects were also not taken along in order to protect the privacy of individuals on team level. Moving-renovating home was changed to more general terms: doing handy work at home;
- › Individual level items under the title 'Resources' such as police style, were not included as they might overlap with 'Coping variable'.

3.2.6 Scope plane's content specifications: Evaluation

Overall, participants were satisfied with the variables that were included in the dashboard. Participants identified a need for the following extra variables: Shooting test (passed/failed) and Physical skills test (passed/failed);

¹ Items with * could be measured daily through a smartphone application.

Participants also identified a need for some items to be asked in more detail. For example, social support was too general. Based on their feedback, we have split it into two variables: colleague support and supervisor support; Similarly, education level was changed from 3 to 4 levels, since the 4 levels are also related to the type of education employees can follow; Participants did not see added value of including well-being as a variable, since, in their view, it greatly overlaps with 'health' variable so it was removed; Participants wondered if it would be possible to have both 'hard', i.e. objective data, as well as 'soft', i.e. data filled in by means of survey joined in the dashboard. They also wondered if the dashboard would allow for variables to be monitored over time and how this would be visible. Both of these aspects were taken into account and incorporated in the dashboard. For example, frequency of the data collection will be visible on a graph that is visible once users click on every individual variable (see Figure 3.1).

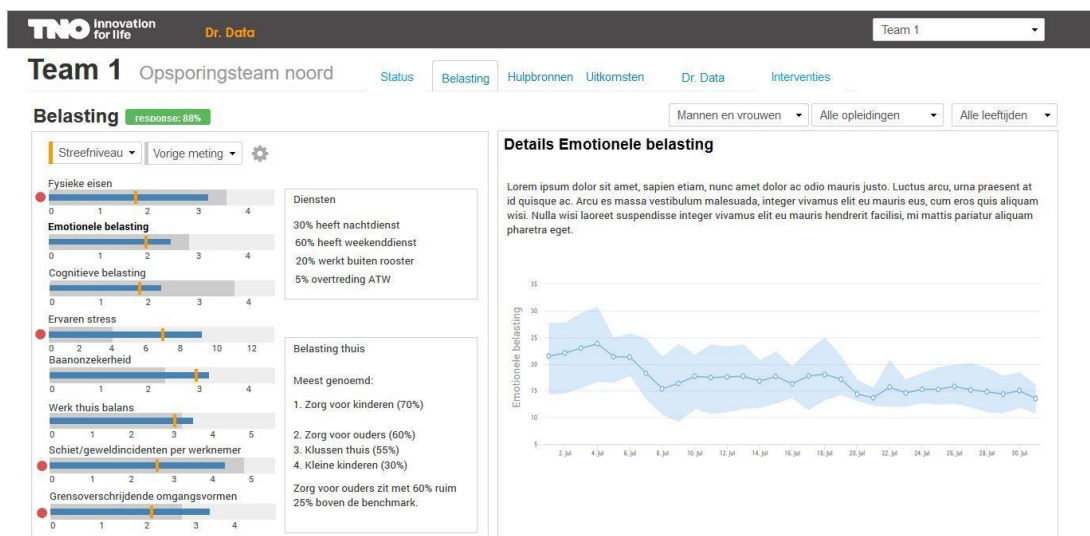


Figure 3.1 Chart showing the frequency, and level of measurement of a variable

3.3 Structure plane

3.3.1 Structure plane: Mentioned requirements

Participants were not asked about structure plane in the first phase of the interview.

3.3.2 Structure plane: Design

The dashboard was divided into 6 tabs (see Figure 3.2):

1. **Status** gives an overview of background information, such as division of team in terms of gender/age/education.

Based on the resilience model (Figure 1.1), a division into demands, resources and outcomes tab was made.

2. **Demands.**
3. **Resources.**
4. **Outcomes.**

5. **Dr. Data** was designed in order to address the gap in current dashboards: current dashboards are unable to make (causal) links between difference variables, while there is a great need by management for this type of information.
6. **Interventions** were added in a separate tab, as a source of potential solutions that managers may decide to use, given a particular challenge they wish to resolve. In the interventions tab they would also be able to see what other managers have used when they faced similar problems.

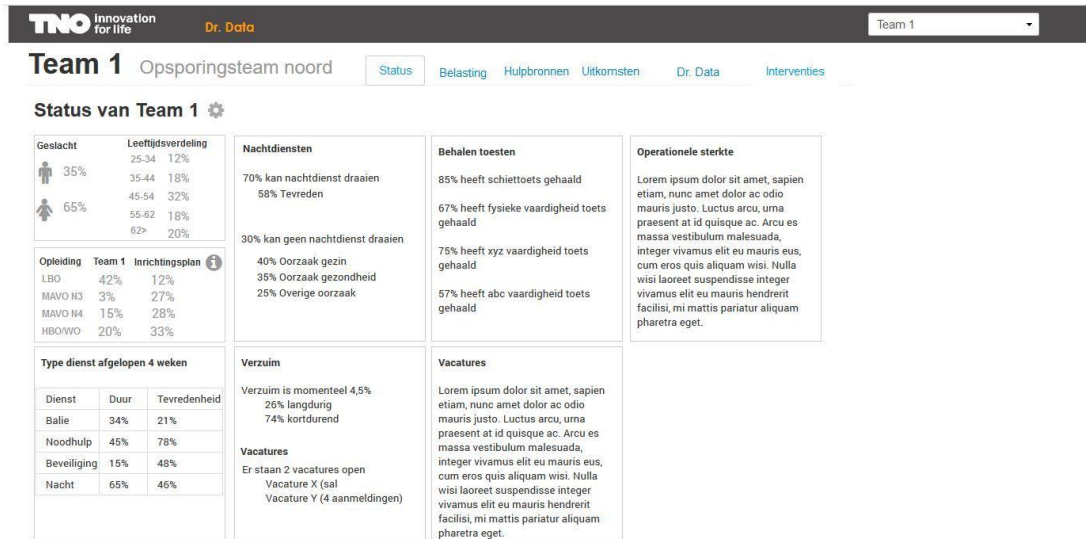


Figure 3.2 Organization of dashboard into six tabs

3.3.3 Structure plane: Evaluation by participants

Participants were satisfied with the way information was clustered into 5 tabs. Small adjustments were made based on telephone interviews and the group interview. Participants expressed a wish to have sickness absence, types of shift, overview of the composition of the team and vacancies included in the Status tab. The Dr. Data tab was initially designed to provide a few suggestions for how the biggest challenges could be resolved. Managers were clear in saying that they prefer this part of thinking to be done by themselves, so the suggestions for dealing with specific issues at hand were removed. Instead, more open suggestions for interventions remained in the Interventions tab.

3.4 Skeleton plane

3.4.1 Skeleton plane: Mentioned requirements

Participants were not asked about the skeleton plane in the first phase of the interviews.

3.4.2 Skeleton plane: Design

Skeleton plane concerns the way in which data are presented.

In the Status tab, the descriptive data are presented in percentages. Demands, resources and outcomes tab have a possibility for every variable to be seen as split for gender and age (given that it does not violate anonymity of participants). Variables

are presented in horizontal charts, with the possibility to adjust the benchmarks (current team, previous measurement, average for another team, average of the police in general, etc.).

3.4.3 *Skeleton plane: Evaluation by participants*

Participants expressed a wish to also be able to see variables split for education, so this possibility was added. Participants also wished to see an indication for when things are substandard. For example, in case that a mean on a variable significantly deviates from the recommended value, a red bullet is shown on the left hand side of the bar (see Figure 3.3).

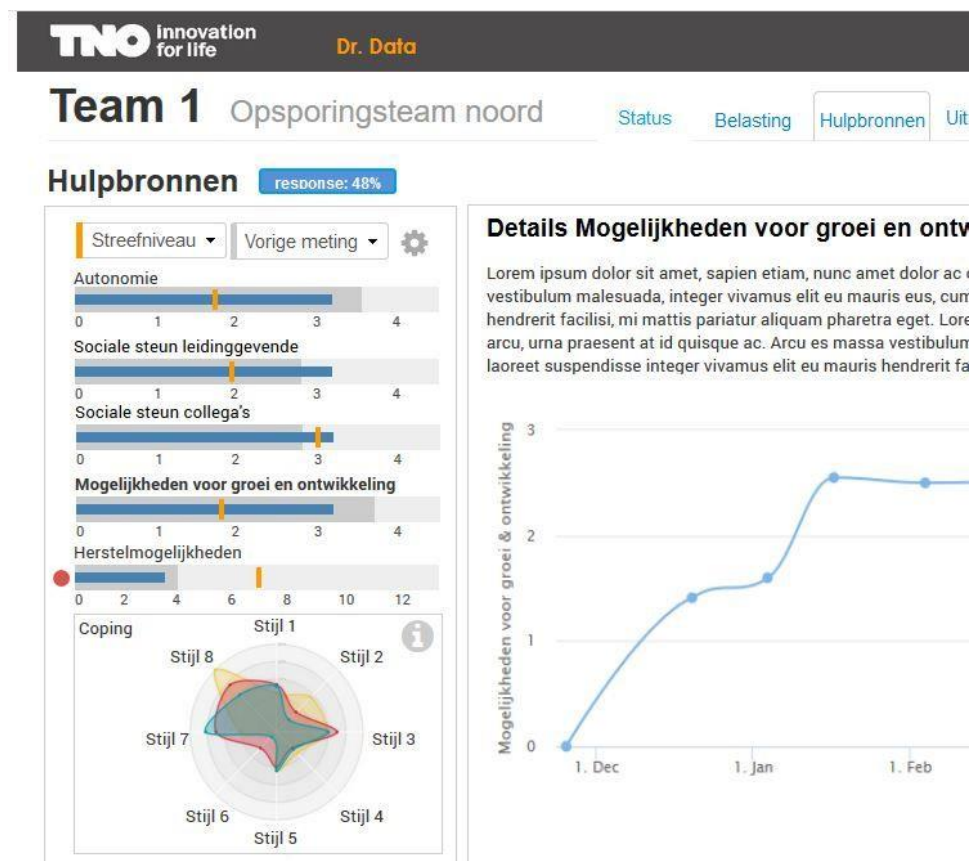


Figure 3.3 Example of benchmarking and 'attention alerts' for certain variables

3.5 Surface plane

3.5.1 *Surface plane: Mentioned requirements*

Participants were not asked about the surface plane in the first phase of the interview.

3.5.2 *Surface plane: Design*

A modern, simple look was chosen. In designing the dashboard, care was taken to satisfy the need for as many variables to be presented in as much detail as possible, while not jeopardizing the simplicity and ease of comprehending the data.

3.5.3 *Surface plane: Evaluation by participants*

Participants admired the look of the dashboard. They found the presentation very clear and simple to use. No need for adjustments concerning the look and feel were reported by the participants.

4 Discussion and Conclusion

4.1 Conclusion

The aim of the current research was to develop a prototype of a resilience dashboard based on individually gathered data, that would give relevant information to different management areas (HR, OSH, team management) and provide advice about types of intervention options. A prototype was indeed developed and approved by the Police employees included in this research.

In the current research it was found that one dashboard could be used for all different management areas. All management areas find the dashboard to be a useful and a much wanted addition to their current toolset and think it would help them to perform better. This research shows that professionals would like support in finding the right causes for the motivation, wellbeing, and performance of their employees. Managers would primarily like to use the dashboard in order to

1. engage in conversation with their employees, and together with them arrive to common understanding of problems and solutions, and
2. to get insight into the potential reasons why some work demands seem to be problematic or not problematic at all.

In the remainder of this chapter we will reflect on the aim regarding the different management areas, the theoretical design framework, the application of the dashboard in other organizations, privacy, and future ambitions.

4.2 Management areas

From the interviews it was clear that team managers and their direct advisors from Occupational Health and Safety and Human Resources want to use the same dashboard, because their needs are similar. However, there were differences in the value that was attached to the different parts of the dashboard. For example, the status tab was particularly highly valued by team managers who would like to use this tab more frequently to have a quick overview of their team. In addition, communication could be better if they have the same information about a team, although they should clearly communicate about their roles and responsibilities to prevent role overlap.

The different management areas may need other information to do their job (Wiezer & Putnik, 2015), but this was not mentioned as essential in the interviews. In the interviews similar needs were expressed. In addition, some variables were not mentioned in the literature, but appeared to be very relevant for managers, such as the formation of a team: do we have enough people, and the right people in the right functions. The reason given by the participants for similar needs was that they wanted to have a common view of the situation.

4.3 Theoretical design framework

The elements of user experience model (Garrett, 2011) were used to guide the development of the dashboard prototype. In the initial phases of the design, close at-

tention was paid to the Strategy plane and the Scope plane as they are the most abstract elements that need to be addressed in initial phases of product development (Garret, 2011). This was needed in order to determine the reason why the dashboard would be used by the managers and thus which needs it should satisfy. This step helped the researchers to propose the initial functionality of the dashboard, with its specific variables. In the second phase (telephone interviews) and third phase (group interview), all elements of the user experience model were checked for feedback with the participants, paying close attention to more concrete aspects of the model (the structure, skeleton and surface planes). Most adaptations that needed to take place concerned minor adjustments to the dashboard. The general design of the dashboard and overall functionality as well as content, structure and skeleton were adequate. Following the steps of the model in designing the dashboard prototype appeared to offer good support in this process.

One element that was not explicitly mentioned in the model, which we have found very useful is the **participation of the users**. We would thus advise adaptation to the model so that it explicitly names input of potential users in developing a product (see Figure 4.1), and that the **feedback loop** between the elements is also explicitly mentioned.

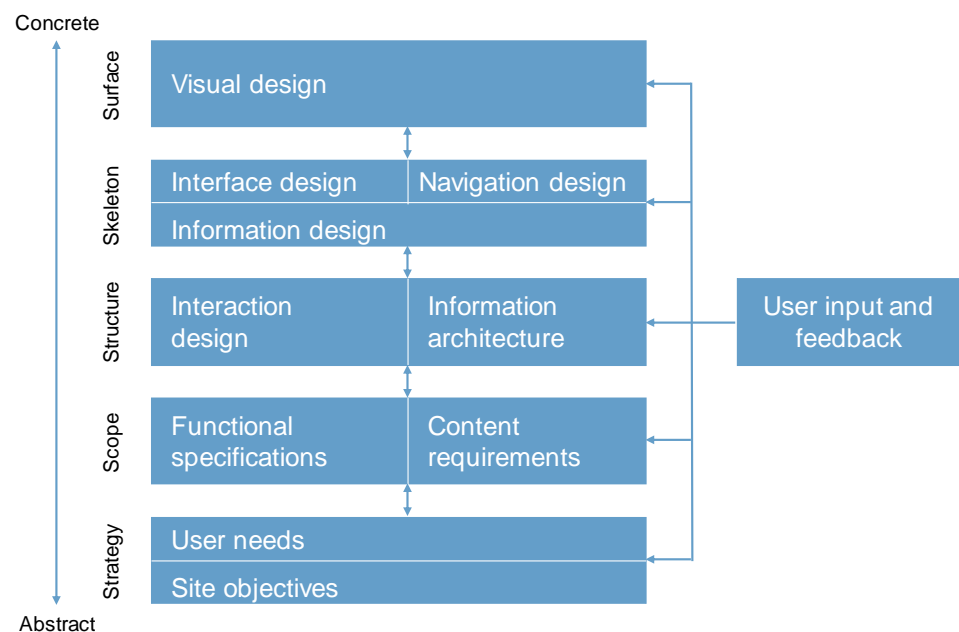


Figure 4.1 Proposed adjusted model of the user experience model of Garrett (2011)

4.4 Application in other organizations

This participatory research was aimed specifically at the Police organization. In terms of functionality it is therefore adapted to this organization. In order to apply the dashboard in other organizations, it should be adapted according to their needs, in a participatory manner. For example, in the current organization, one dashboard could serve various management areas. However, in other organizations this may not be the case. It is important to adjust the dashboard to the specific users and include them in the design process. The structure of the dashboard may remain similar, but the specifications of concrete elements of the dashboard would probably need to be adjusted. When in use, the dashboard should be checked regularly in order to ensure

that it complies with the latest privacy regulations and still serves the needs of the target population that is using it.

4.5 Privacy

As of May 2018, there will be adaptations to the Dutch privacy law. This will entail prohibition of inquiry by employers about health related data of employees, such as burnout. In order to comply with the law, while also helping organizations support their employees in better working conditions, new constructions are possible. For example, if a third, independent party is the owner of the data and guarantees anonymity of participants, health related data, with explicit consent of employees, may be gathered. The third party aggregates the data on a group level and shares the results with employees and the employer. For more in depth information on changes to the privacy law see TNO analysis (PBLQ, 2017, in Dutch).

4.6 Future ambitions

Next steps would be to fill the dashboard with real data and develop fully functioning algorithms in order to construct the Dr. Data functionality. Relevant questions in this development are:

- › *Related to the data handling:* How will the system deal with data that are measured frequently, and infrequently? How will the system deal with missing data?
- › *Related to data collection:* How can we stimulate employees to provide the data, and keep providing it?
- › *Related to interpreting data:* How do we deal with the reliability of the system's advice? How can an advice be provided in a manner that is trusted and followed?

It should be noted that, once the dashboard is in place within an organization, it should be periodically evaluated and, if necessary, adapted. If new challenges appear, there should be a possibility to add them to the dashboard. In addition, visual adaptations may be required to keep the dashboard attractive to use.

In the current research, workplace employees and the board of directors were not included as stakeholders. Future research should also take their viewpoints into account. Employees are the ones who will have to supply data regularly, which may place a burden on them. They should, for example, be able to trust the privacy of their data, and experience personal benefit of supplying the data. This last point could be done by providing a personal dashboard which helps them reach resilience related goals. The board of directors decides on the general course of the organization, and the dashboard could help them make decisions. Furthermore, it could also help create a common understanding when the board discusses resilience related issues with lower management.

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6 Signature

Leiden, 20 december 2017

TNO



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Appendix 1 Topic list semi-structured interviews

Vooraf te bespreken met deelnemers:

- › Waarover het gesprek zal gaan

Voor ons onderzoeksproject willen we dit jaar interviews afnemen bij medewerkers van de politie, van wie wij denken dat zij iets aan informatie uit data rondom menselijke veerkracht kunnen hebben, nu of in de toekomst. We zijn op zoek naar welke informatie nuttig kan zijn, en op welke manier dit het beste kan worden weergegeven, om zo het werk van medewerkers (HR, VGW, lijnmanagement) te verbeteren, of te vergemakkelijken.

- › Uitleg wat resilience is. We definiëren resilience als goede prestatie, motivatie en gezondheid van mensen om de eisen van hun werk aan te kunnen. Het gaat ook om de middelen die ze hiervoor vanuit de organisatie krijgen.
- › Er zijn geen goede of foute antwoorden
- › Informatie wordt vertrouwelijk behandeld
- › Heeft u vooraf nog vragen?

Interviewvragen

1. Wat is je functie?
 - a. Wat zijn de taken en verantwoordelijkheden?
 - b. Waar wordt je voor beloond in je werk? Op welke manier wordt jij beoordeeld?
2. Welke systemen gebruik je nu?
 - a. Wat voor data gebruik je nu?
 - b. Wat is belangrijk voor je om te weten?
 - c. Wat zou je werk beter of gemakkelijker kunnen maken?
 - d. Mogen we het zien (de systeem?)
3. De data die beschikbaar is introduceren:
 - a. Fysieke data (slaap gemeten door een app)
 - b. Psychosociale data (via vragenlijsten) over sociale steun, taak eisen, stress, verzuim enz.

Zou je daar iets aan hebben?

 - c. Zou de data iets voor je functie kunnen betekenen?
 - d. Zo ja, voor wat? (als ze niet weten, voorbeelden geven: Voor gezondheid? Voor monitoring?)
 - e. Zo niet, waarom niet?
 - f. Zou je deze data om kunnen zetten in een soort monitoring systeem?
 - g. Wat voor data zou nuttig zijn (als ze meer expliciet/precies kunnen zijn)
 - h. Explicit langs ons lijstje lopen (vanuit de literatuur)
4. Hoe zou het eruit moeten zien?
 - a. Hoe zie je het voor je? Hoe zie je zo'n systeem in je dagelijkse werk? Wat wil je zien? Bv je komt naar je werk, je start je computer, wat zie je?
 - b. Meer gedetailleerde vragen: Will je cut off points gebruiken? Of benchmark scores zien? Wat is de referentie groep?
5. Randvoorwaarden: Barricades, waarmee we rekeningen moeten houden?
 - a. Bv privacy issues; Team info i.p.v. individuele data (team spread)
 - b. Wat mogen we absoluut niet doen/wanneer zou je het niet gebruiken?

6. Laat een (of meer) voorbeeld(en) van dashboard zien
 - a. Zou zo iets voor je werken?
 - b. Wat vind je goed?
 - c. Wat zou beter kunnen?
 - d. Waar moet de dashboard aan voldoen om in deze organisatie geïmplementeerd te worden?
 - e. Is er iets toe te voegen dat we niet naar gevraagd hebben maar dat belangrijk is?

7. We zijn nog op zoek naar politiemedewerkers om te interviewen. Weet je iemand die geschikt zou zijn? Het gaat om personen die de informatie over menselijke veerkracht zouden gaan gebruiken in hun werk. We zoeken nog een:
 - a. Lijnmanager / manager van een operationeel (blauw op straat) team
 - b. VGW adviseur
 - c. HR

8. Hoe verder:
 - a. We gaan verschillende politiemedewerkers interviewen, op basis hiervan maken we één of meerdere dashboards, mock-ups.
 - b. Deze dashboards sturen we per mail, en dan maken we een telefonische afspraak om te bespreken wat je er van vindt, en welke aanpassingen nodig zijn.
 - c. Na de zomer willen we nog een bijeenkomst organiseren waarbij we samenkomen met de verschillende onderdelen van de politie, om gezamenlijk een discussie te voeren over de toekomst.

List of various topics per Management area (in general terms) (Wiezer & Putnik, 2015)

Human Resources		
	Topic	Variables (examples)
Outcome	Wellbeing	<ul style="list-style-type: none"> • Personal growth • Absenteeism, presenteeism, health, vitality • Stress related symptoms
	Performance	<ul style="list-style-type: none"> • Engagement (vigour, dedication) • Job satisfaction • Risky behaviour, errors • Performance evaluation
	Motivation	Motivation
Demands	Work context	<ul style="list-style-type: none"> • High job demands (e.g. complex, emotional, high quality, time pressure) • Job demands are unclear (role conflict and clarity) • Changes and insecurity, unpredictability • Bullying and violence, aggression, negative atmosphere. Physical threats • Irregular work
	Personal	Work-family conflict. Life events

Human Resources		
	Topic	Variables (examples)
Resources	Organizational	<ul style="list-style-type: none"> • Appreciation, acknowledgement, reliability, psychological safety • Mobility • Meaningful work • Support (functional and social) • Influence, voice, participation, open communication
	Team	<ul style="list-style-type: none"> • Support (management and team, social and functional) • Team cohesion, collective identification • Team efficacy • Leadership efficacy
	Job	<ul style="list-style-type: none"> • Role clarity • Autonomy • Personal development, challenge • Task variety • Task feedback • Time for recovery
	Socio-emotional	<ul style="list-style-type: none"> • Socio competences, self- reflection, optimism, pro-activity, locus of control, flexibility, task self- efficacy, meaning making, coping self-efficacy • Emotional stability
	Cognitive	<ul style="list-style-type: none"> • Cognitive capacity, executing cognitive function • Knowledge and skills
	Home	<ul style="list-style-type: none"> • Financial security • Social support
	Energetic	<ul style="list-style-type: none"> • Sleep quality

Occupational Health and Safety		
	Topic	Variables (examples)
Outcome	Wellbeing	<ul style="list-style-type: none"> • Absenteeism, presenteeism, health, vitality • Stress related symptoms
	Performance	<ul style="list-style-type: none"> • Risky behaviour, errors
Demands	Work context	<ul style="list-style-type: none"> • General • Emotional demands • Changes and insecurity, unpredictability • Bullying and violence, aggression, negative atmosphere, physical threats • Irregular work • Dangerous • Dirty, noise and light, extreme temperatures
	Personal	Work-family conflict. Life events
	Physical	<ul style="list-style-type: none"> • Heavy, static heavy, static light • Sedentary
Resources	Organizational	<ul style="list-style-type: none"> • Participation • Quality workplace • Support (functional and social) • Psychological safety

Occupational Health and Safety		
	Topic	Variables (examples)
	Team	<ul style="list-style-type: none"> • Support (management and team, social and functional) • Leadership efficacy
	Job	<ul style="list-style-type: none"> • Autonomy • Personal development, challenge • Task variety/skill variety • Task feedback • Time for recovery
	Socio-emotional	<ul style="list-style-type: none"> • Optimism, pro-activity, locus of control, flexibility, task self-efficacy, meaning making, coping self-efficacy • Emotional stability • Affective organizational commitment • Recovery after work/disengagement
	Energetic	Sleep quality
	Physical	Strength, endurance speed
	Physiological	HPA sensitivity and HPA reactivity

Team management		
	Topic	Variables (examples)
Outcome	Performance	<ul style="list-style-type: none"> • Commitment, dedication, vigour • Job satisfaction • Presentism, absenteeism • Errors, risky behaviour • Task efficiency, task efficacy • Performance (evaluation)
	Wellbeing	<ul style="list-style-type: none"> • Health, stress related symptoms
Demands	Work context	<ul style="list-style-type: none"> • Time pressure • Negative atmosphere, bullying, aggression and violence, physical threats • Unpredictability • Task unclarity
	Personal	<ul style="list-style-type: none"> • Work-life balance • Life events
Resources	Organizational	<ul style="list-style-type: none"> • Acknowledgement • Meaningful work • Learning culture • Support (functional and social) • Influence on the processes • Vision, performance
	Team	<ul style="list-style-type: none"> • Management support, social support • Team cohesion • Transformational leadership, leadership efficacy, leader-member exchange
	Job	<ul style="list-style-type: none"> • Task comprehensiveness, job enrichment • Role clarity, task variety, task feedback • Autonomy • Development opportunities, challenge • Time for recovery
	Socio-emotional	<ul style="list-style-type: none"> • Social competence and self-reflection

Team management		
	Topic	Variables (examples)
		<ul style="list-style-type: none"> • Pro-activity, locus of control, flexibility, emotional stability, meaning making, coping self-efficacy • Task self-efficacy
	Cognitive	Knowledge and skills
	Energetic	Sleep quality
Quality management		
	Topic	Variables (examples)
Outcome	Performance	<ul style="list-style-type: none"> • Errors, risky behaviour • Task efficiency, task efficacy
Demands	Work context	Error avoidance culture
Resources	Organizational	<ul style="list-style-type: none"> • Learning culture • Performance

Appendix 2 Topic list telephone interviews

1. Surface plane

- › What is your first impression on the way that dashboard looks like?

2. Skeleton plane

- › How easy/intuitive was it to navigate the dashboard?
- › Are the names of the tabs clear? Could you intuitively guess what kind of information was behind the tab based on the tab name?
- › Was it easy to find information that you were looking for?
 - If yes, what made it easy?
 - If no, what made it difficult?
- › Was the information presented in a way that you could understand?
 - Were there any items that were more difficult to understand?
 - What would have made it easier/what was unclear?
- › Was the division of dashboard into tabs for you easy to navigate?
- › (Were the icons clear?) *if we will have icons (so far there is only the one for gender)*

3. Structure plane

- › Per tab, are the variables in the right spot?
- › Is the division of tabs for you satisfactory?
 - Would you have preferred more/less subdivisions? If yes, how/what exactly would you like to change?
- › Was it clear how to use filters? What happened if you selected filters where n was too small (i.e. for privacy issues results could not have been displayed?)
- › Did you encounter any errors?

4. Scope plane

- › Do you miss any of the functions in the dashboard?
- › Do you miss any of the important variables?

5. Strategy plane

- › Does the dashboard fulfil your needs concerning resilience of employees?
- › Would this dashboard be useful for your work?

Appendix 3 Final Resilience Dashboard prototype

In this appendix the final version of the developed dashboard will be presented. Based on the requirement from Chapter 3 a mock-up dashboard was developed. Figures A3.1 to A3.6 show the different screens of the dashboard.

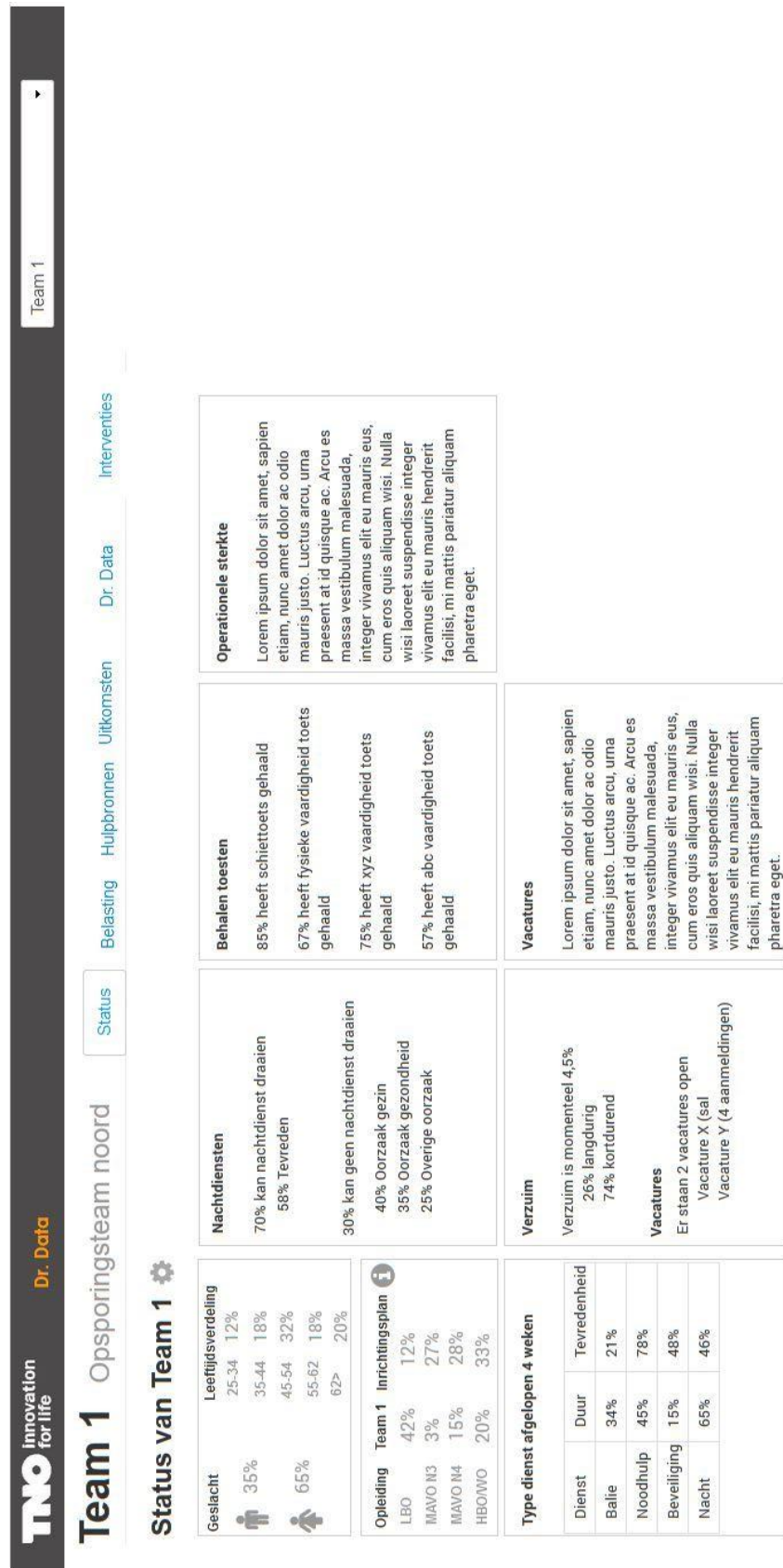


Figure A3.1 The status screen of the dashboard

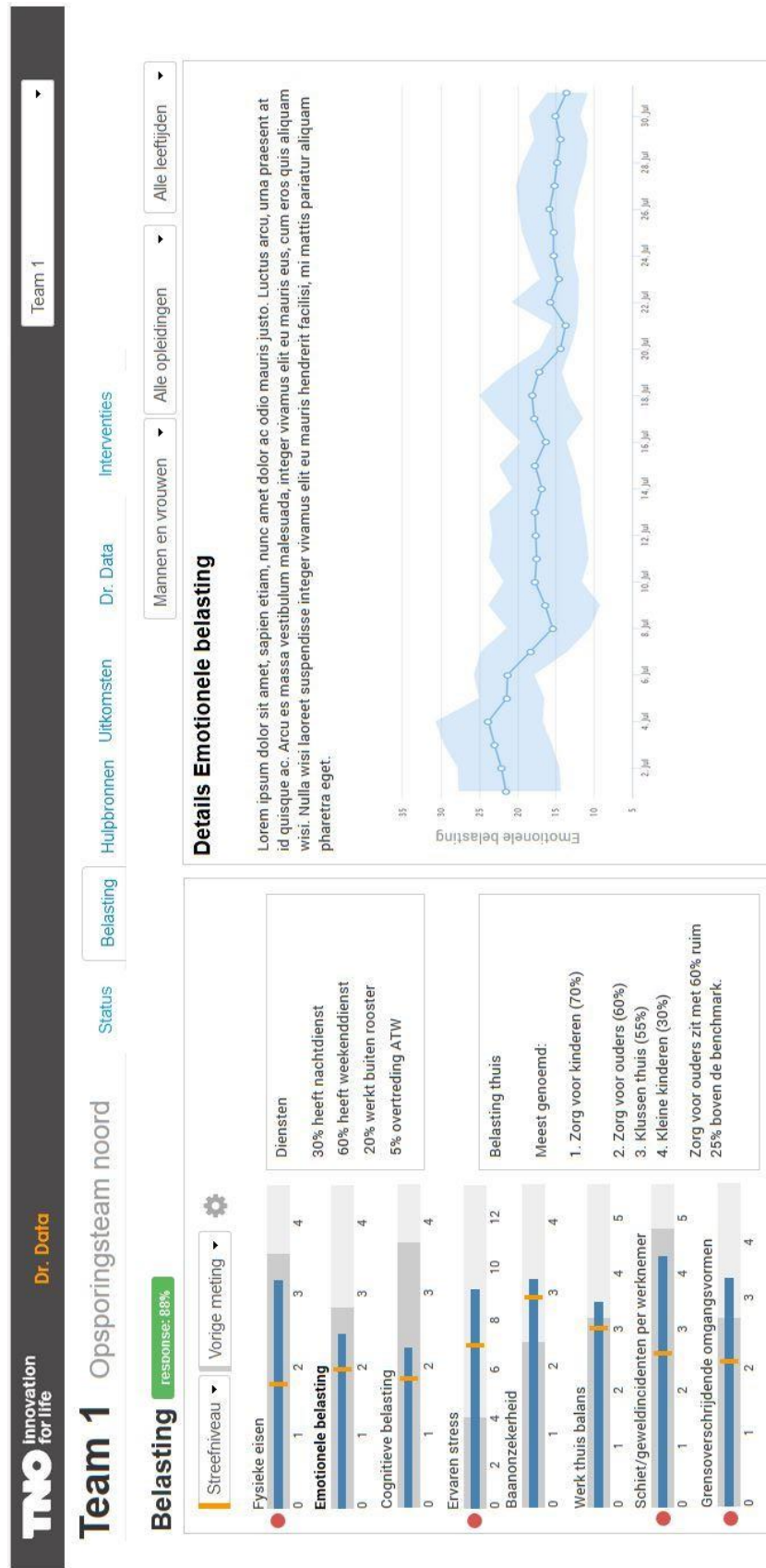


Figure A3.2

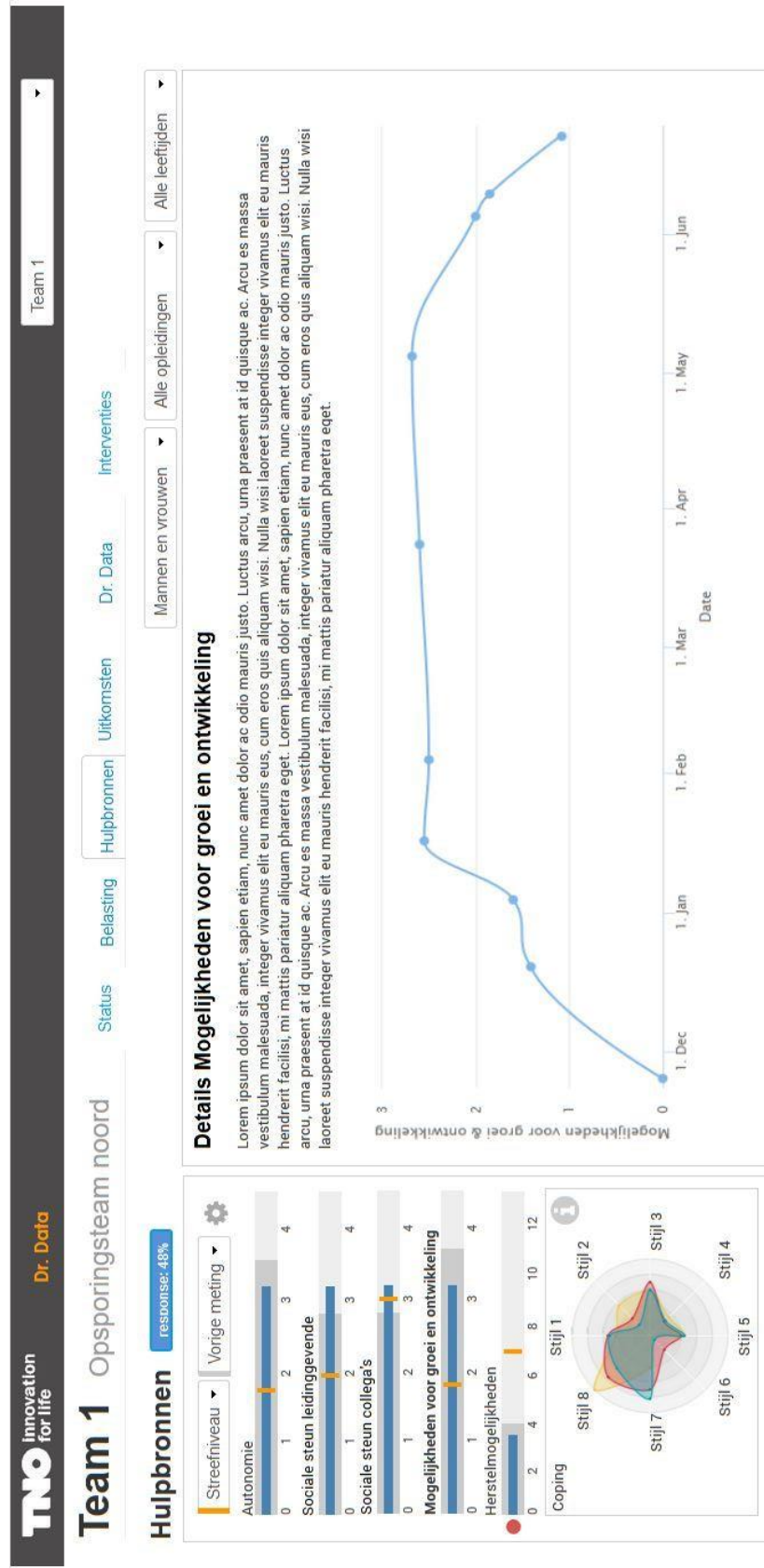


Figure A3.3

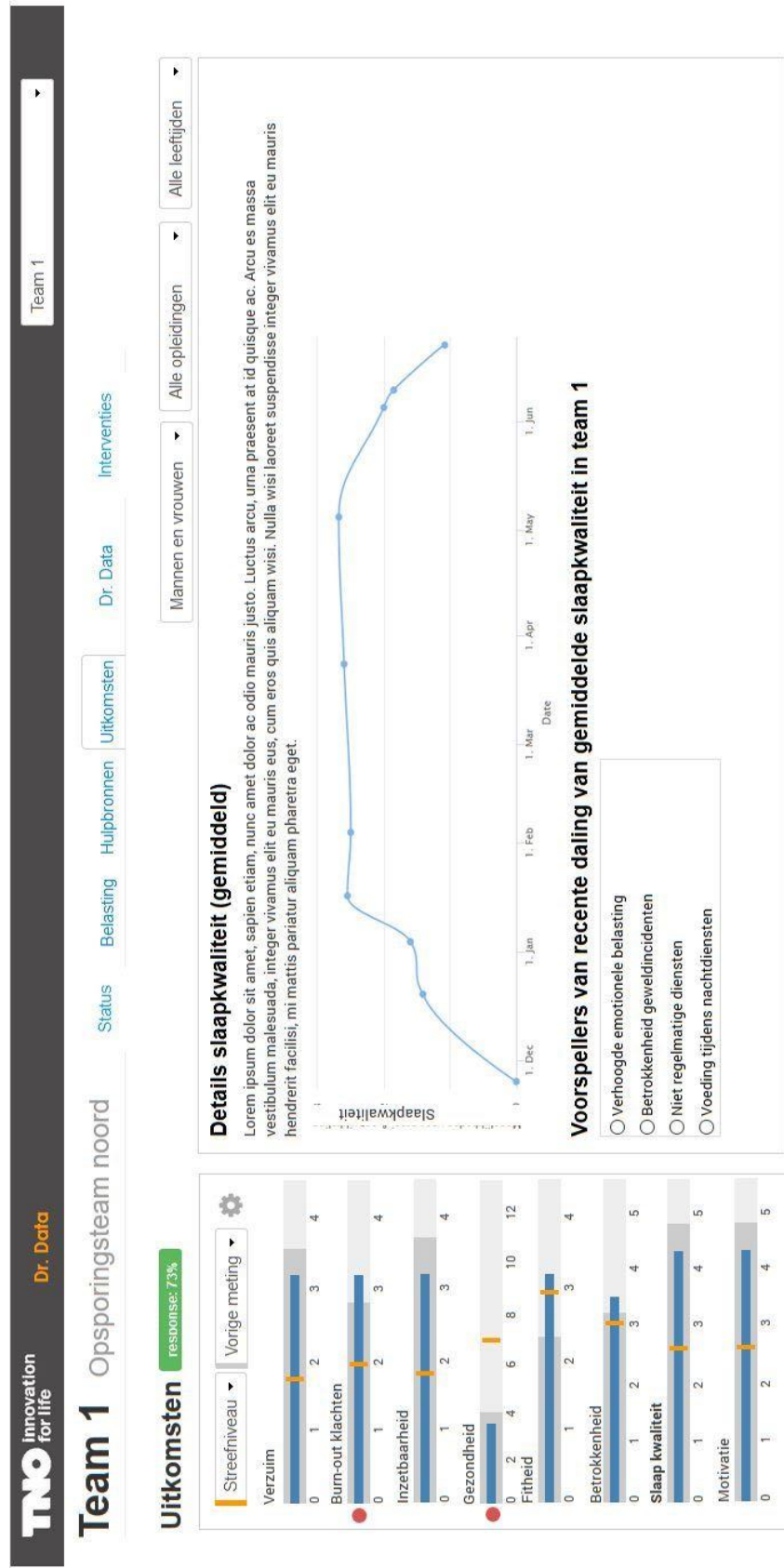


Figure A3.4

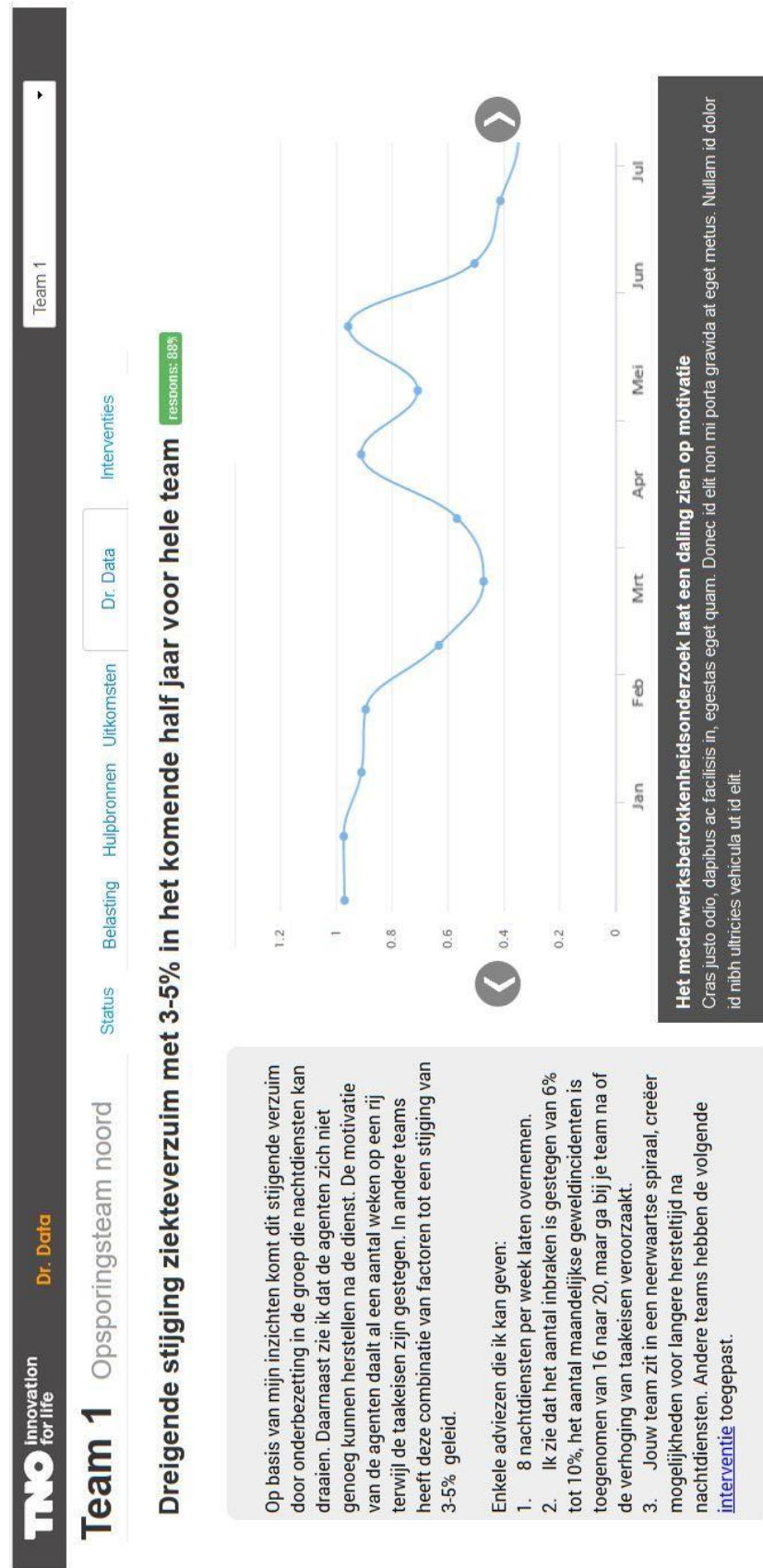



Figure A3.5



Team 1 Opsporingsteam noord

Dr. Data

Team 1

Status
Belasting
Hulpbronnen
Uitkomsten
Dr. Data
Interventies

Interventies

Goedemorgen, in team 1 zijn op dit moment de volgende aandachtspunten:

- Prestatie en motivatie zijn licht gedaald.
- Werkdruk wordt als hoog ervaren.
- Sociale steun is gedaald.

De knelpunten in jouw organisatie zijn uniek. Toch hebben andere organisaties beslist al met vergelijkbare knelpunten te maken gehad. Voor bekende knelpunten hebben diverse organisaties en sectoren in het verleden dus al oplossingen bedacht. Daarom is het waardevol dat je in kaart brengt welke oplossingen er al bestaan voor de knelpunten in jouw organisatie.

Effecten uitgevoerde interventies

Sturen op meer regelmaat in diensten

Voorlichting voeding

Interventielijijn A

Het is altijd zinvol om te zoeken naar oplossingen die het probleem bij de bron aanpakken. Dit zijn oplossingen die een stressvolle situatie minder stressvol maken. Denk maar aan de taakvolgorde aanpassen of bepaalde procedures veranderen. Om iets aan dit probleem te doen is het verstandig om extra informatie in te winnen bij de medewerkers.

Kies uit

Ik wil online anonieme vragenlijstjes verzenden.

Ik wil het gesprek aan gaan met mijn medewerker

Interventielijijn B

Maatregelen om werkdruk te verminderen kunnen zich ook richten op het versterken van individuele werknemers. Op die manier kunnen zij beter omgaan met stressvolle situaties. Denk aan een cursus time management of aan coaching. Om iets aan dit probleem te doen is het verstandig om extra informatie in te winnen bij de medewerkers.

Kies uit

Ik wil online anonieme vragenlijstjes verzenden.

Ik wil het gesprek aan gaan met mijn medewerker

Zoek in interventie database

Figure A3.6

Appendix 4 Resilience patterns

When the Dr. Data application is not yet available due to lack of sufficient data, there is a need for another way to interpret the scores on the demands and resources. There is research available on which factors (demands and resources) are important to measure when measuring resilience. However it is not yet known how a specific combination of scores on resilience factors could be interpreted. An approach could be to look at each factor and see if scores are too high or too low. Another approach could be to look at the pattern of the scores on all measured resilience factors. This was the focus of a related project. The results are presented in this Appendix.

It was hypothesized that there would perhaps be different kinds of resilience patterns: different constellations of scores on resilience related variables, like different symptoms that can be traced back to a single syndrome. In organizational and management literature the functioning of organizations and management has been studied, and patterns we could use for this purpose may have been found. A pattern could be the combination of specific resilience scores, that often occur together, and that requires a specific intervention. For this purpose we looked for the existence of such patterns in literature.

For the development of resilience patterns, a general literature scan was performed with the goal of finding these patterns. Since “resilience pattern” is not yet a widely used term, we performed a literature search in scientific (PsycINFO, Scopus) and popular (Google and Google Scholar) databases for (different combinations of) related keywords: “pathology”, “organization”, “case study”, “qualitative”, “employee*”, “resilient*”, “stress”, “burnout”.

The resilience patterns, which described a combination of factors, all come from two sources (Kets de Vries, 1994; Kampen, 2011). The six patterns are all “negative” patterns (should be avoided), and are focused on the behaviour of the management. Their constructs are: neglect (by management; Kampen, 2011), depression (of the management), compulsiveness, paranoia, schizophrenia, and drama (Kets de Vries, 1994). To see if the patterns contained sufficient relevant factors, the patterns were mapped into our resilience model (Paradies et al., 2015) which distinguishes different categories of factors: demands, resources, coping with demands and stress, and outcomes. Note that the distinction between demands and resources as factors is often difficult since the absence of a resource can be a demand. To this model were added, when applicable: “possible triggers” and “organizational outcomes”. The patterns can be found in Figure A4.1 to A4.6.

We found that there is no comprehensive description of resilience patterns as of yet. The different “types” or “patterns” that were found focus on leadership and culture, and less on resilience factors like demands, resources, and outcomes. Only patterns were found with negative consequences, due to search for “pathologies”. We found that different research fields focus on different predictors of resilience. Management literature has a focus on organization characteristics, organizational types, organizational culture, and events such as reorganizations. Psychological literature has a focus on burnout, engagement, leadership and individual/jobs resources. To come to integral resilience patterns and their interpretations, these fields need to join efforts.

In their case studies, measurements of both resilience related as well as organizational context related factors need to be described.

To conclude, resilience patterns may exist, but they are not yet uncovered. This will require more research, and thus time. In the mean time we can use the interventions in the “interventions” application.

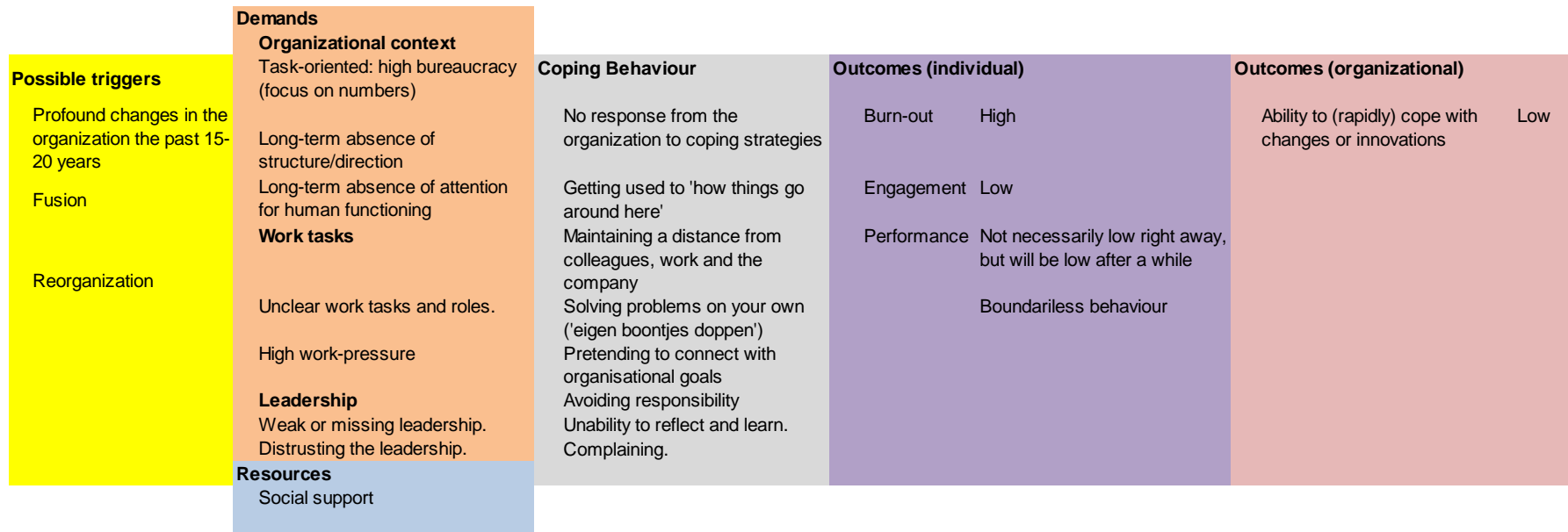


Figure A4.1 Pattern of neglect (by the management)

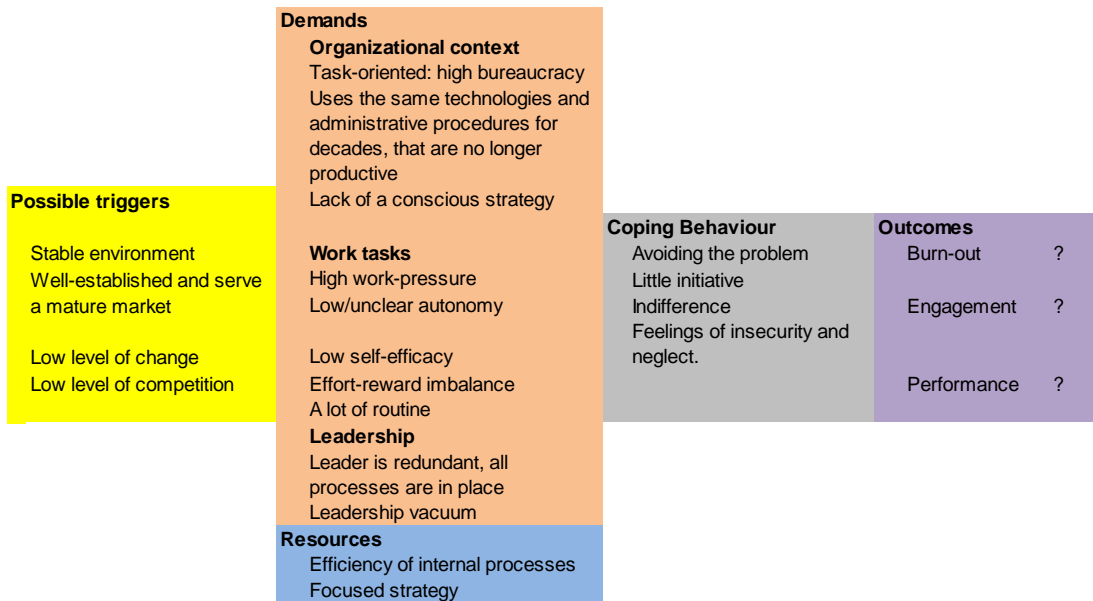


Figure A4.2 Pattern of depression (of the management)

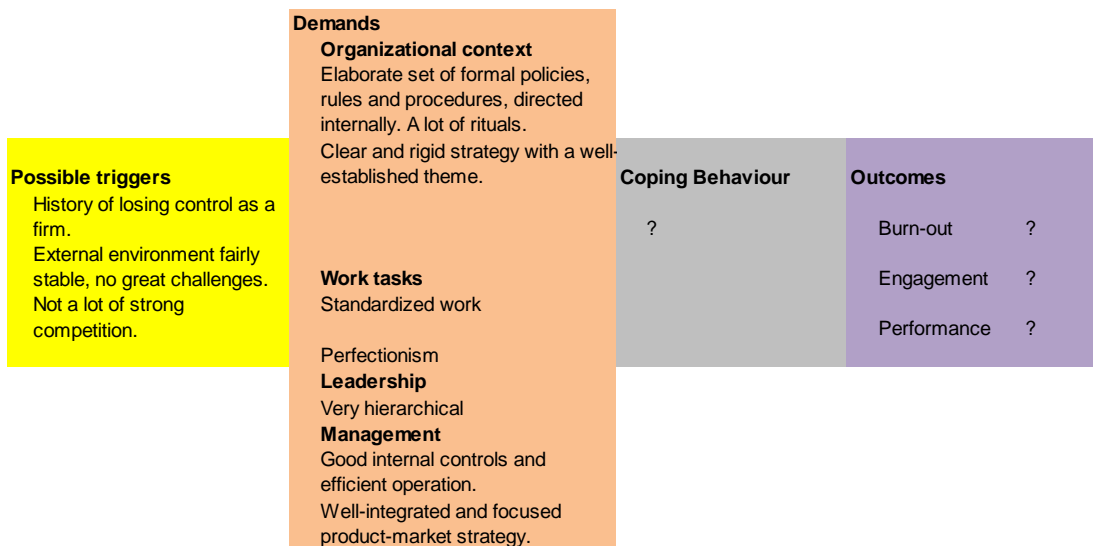


Figure A4.3 Pattern of compulsiveness (of the management)

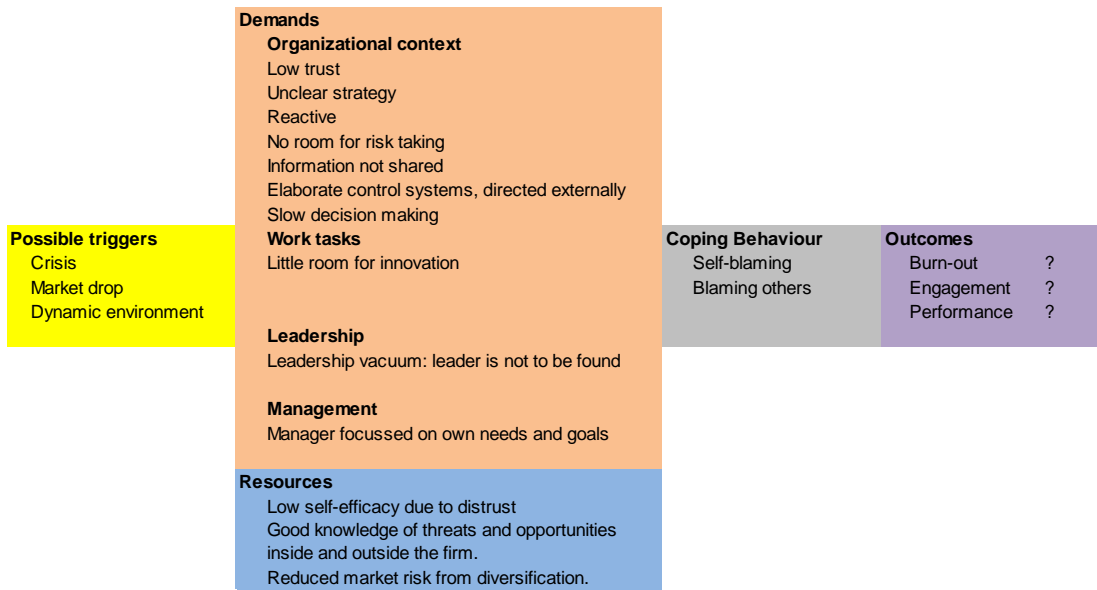


Figure A4.4 Pattern of paranoia (of the management)

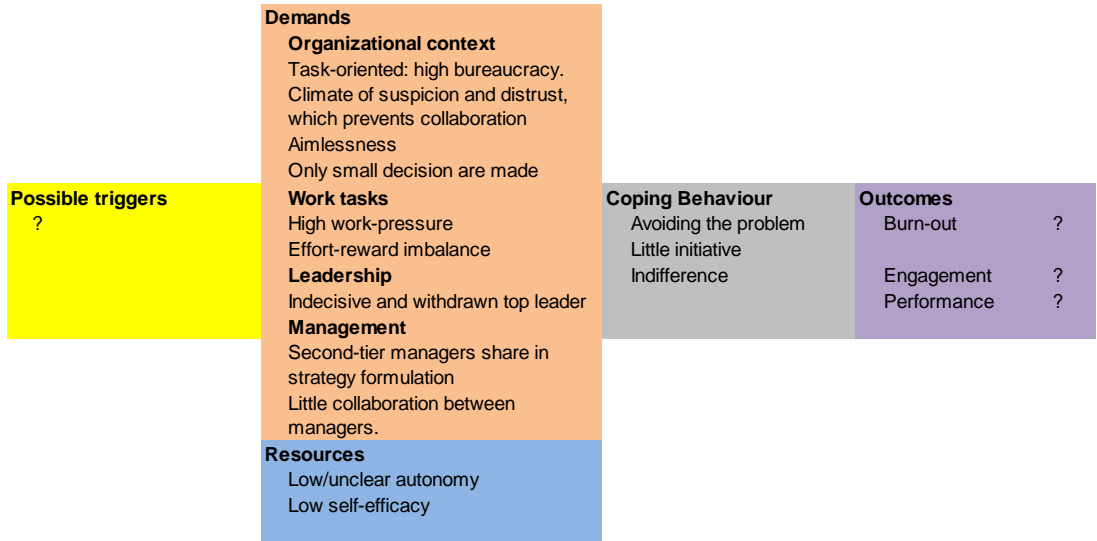


Figure A4.5 Pattern of schizophrenia (of the management)

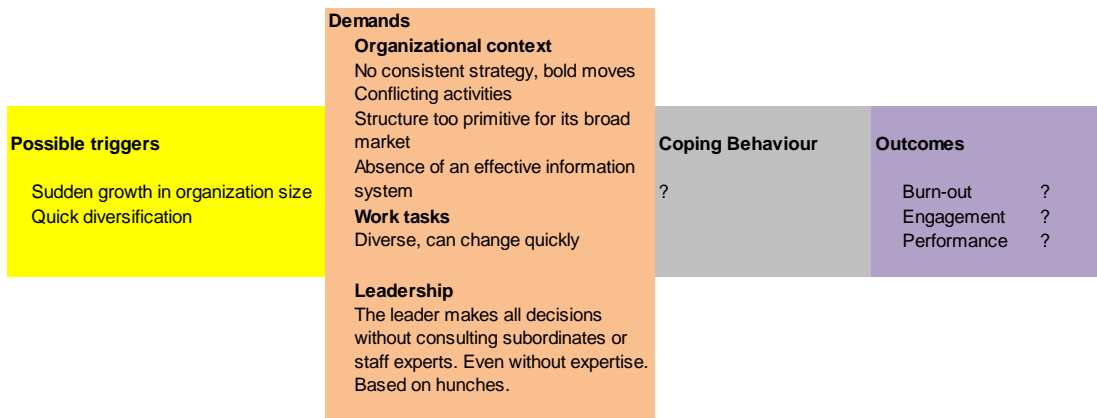


Figure A4.6 Pattern of drama (of the management)