LEVO

LEADERSHIP TOOLS: VISIONARY LEADERSHIP AND ORGANIZATIONAL PERFORMANCE

Technical Report

Project description, surveys of leaders and employees, pre-treatment, and post-treatment

2020–2022

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1   Project Description

1.1   Introduction

The LEVO (LEadership tools: Visionary Leadership and Organizational Performance) research project is an experimental study on the effects of leadership training and software-based leadership tools on organizational outcomes: leadership behavior, psychological needs satisfaction, work engagement, and organizational performance. The project includes 226 job center units in Denmark.

This report describes the project's research design and the interventions. The report also describes measures used in the project and summarizes pre- and post-intervention surveys conducted among the participating public managers and their employees.

1.2   Research Questions and Hypotheses

The project has eight pre-registered hypotheses, but the theorization in the project has evolved in the period after the project initiation and pre-registration in the fall of 2020. The theorization on software-based leadership tools and implementation nudging has advanced in particular, which has led to changes in the terminology in the project. Follow this link to access the pre-registration.

Leadership behavior can be assisted in several ways, and in the pre-registration, I focus on digital and analogue leadership tools that can support leaders to conduct transformational leadership through employee development dialogues. Such tools can, for instance, provide simplified information on target behavior, provide guidelines and templates, and send reminders. In this way, leadership tools can nudge the implementation of target behaviors in the aftermath of leadership training. Leadership tools can be provided in very advanced dynamic and interactive forms such as artificial-intelligence-based (AI-based) software, or in very static formats such as booklets or hard copy brochures. These two forms can be seen as extremes on a static–dynamic continuum of leadership tools.

In the LEVO project, leadership tools are provided in two different ways to investigate potential differences in the effect of static (or more analogue) versus more dynamic (or digital) leadership tools. To match existing and widely used leadership tools in the public sector, the LEVO project employs a software solution consisting of writable PDFs combined with standard e-mail and calendar software as a rather static leadership tool. This static software solution is contrasted by a cloud-based interactive software solution that represents a dynamic leadership tool. The two versions of leadership tools are described in detail in section 1.5 below.

In addition to the pre-registered hypotheses, the project tests hypotheses that flow directly from the design of the intervention. These additional hypotheses focus primarily on the role of goal-oriented development dialogues as an antecedent of various organizational outcomes and as a mediator in transformational leadership training.

The following hypotheses have been pre-registered with the Open Science Framework prior to data collection as a part of the experimental protocol. Wording below has been adjusted according to the theoretical evolution in the project:[1]

Hypothesis 1a: Transformational leadership training combined with just-in-time implementation nudges provided through either static or dynamic software solutions increases public managers' transformational leadership behaviors.

Hypothesis 1b: Transformational leadership training combined with just-in-time implementation nudging through a dynamic software solution increases public leaders' transformational leadership behavior to a greater extent than transformational leadership training combined with just-in-time implementation nudging through a static software solution.

Hypothesis 2a: Transformational leadership training combined with just-in-time implementation nudges provided through either static or dynamic software solutions increases the satisfaction of basic needs for autonomy, competence, relatedness, and meaning among employees in the participating units.[2]

Hypothesis 2b: Transformational leadership training combined with just-in-time implementation nudging through a dynamic software solution increases the satisfaction of basic needs for autonomy, competence, relatedness, and meaning among employees in the participating units to a greater extent than transformational leadership training combined with just-in-time implementation nudging through a static software solution.[3]

Hypothesis 3a: Transformational leadership training combined with just-in-time implementation nudges provided through either static or dynamic software solutions increases employee work engagement in the participating units.

Hypothesis 3b: Transformational leadership training combined with just-in-time implementation nudging through a dynamic software solution increases employee work engagement in the participating units to a greater extent than transformational leadership training combined with just-in-time implementation nudging through a static software solution.

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[1]The "analogue tool" in the pre-registration refers to just-in-time nudges provided by "the static software solution" in this technical report. Likewise, the "digital tool" in the pre-registration refers to just-in-time nudges provided by "the dynamic software solution."

[2]Hypothesis 2a states that both intervention variants will increase all four of the mentioned psychological needs. Thus, this hypothesis only finds full support if the analysis indicates an increase in the satisfaction of the needs for autonomy, competence, relatedness, and meaning.

[3]Hypothesis 2b states that the intervention with the dynamic leadership tool will increase all four of the mentioned psychological needs to a greater extent than the intervention with the static tool. Thus, this hypothesis only finds full support if the analysis indicates a larger increase in the satisfaction of the needs for autonomy, competence, relatedness, and meaning.

Hypothesis 4a: Transformational leadership training combined with just-in-time implementation nudges provided through either static or dynamic software solutions has a positive effect on the development in the proportion of the participating units' target group that becomes self-sufficient

Hypothesis 4b: Transformational leadership training combined with just-in-time implementation nudging through a dynamic software solution has a more positive effect on the development in the proportion of the participating units' target group that becomes self-sufficient than transformational leadership training combined with just-in-time implementation nudging through a static software solution.

Additionally, the theorization of face-to-face dialogues between leaders and employees has evolved. Because of further theorization, I now use the overall term for development dialogues between leaders and employees: goal-oriented development dialogues. This includes the Danish term "MUS" ("medarbejderudviklingssamtale") and the term "vision dialogues" used in the pre-registration.

1.3   Participating Organizational Units

The LEVO project was carried out within the public employment services in Denmark. The responsibility for the employment services in Denmark is placed within the 98 municipalities in the country. Eight municipalities have established a joint employment service, and there are 94 public job centers in Denmark. The area is highly regulated by legislation, and therefore, tasks and objectives are very similar across the 94 job centers that deliver the employment services. The front-line managers (managers of employees) in these job centers are the primary target group in the LEVO project.

1.3.1   Recruiting Participants

The head of each of the 94 job centers was invited to let their front-line managers participate in the project. The invitation was sent as an e-mail with a 5-page description of the project. The head of the job center was encouraged to set up a meeting with the researcher (project leader) and the front-line managers in the job center to gain more information about the project before deciding whether to participate or not. Out of 34 participating job centers, 27 arranged such a meeting and discussed the project with the team of managers before making a decision – although, in five of these job centers, the front-line managers were not invited, and only second-line managers participated. Twenty-three of the meetings were virtual (using Skype, Teams, or Zoom) and had a duration of 30–40 minutes. Four meetings were physical and had a duration of approximately an hour. Seven job centers decided to participate in the project without a meeting with the researcher prior to the decision, but a meeting between the researcher and the management team was then held afterwards and prior to the intervention.

A total of 34 job centers decided to accept the offer to participate in the project. Of these job centers, four decided to participate with only a part of the units in the job center. Thirty-five job centers declined the offer to participate in the project, and 25 job centers have not answered the invitation although three reminders were sent and an attempt to make contact on the phone was made.

1.3.2　Tasks and Structures in the Danish Job Centers

The job centers have a responsibility to deliver an active employment service to all citizens that receive public cash benefits (except persons that receive certain types of early retirement pay). The reasons for receiving public support may be sickness/sick leave, unemployment, and/or reduced ability to work. The legislation divides the beneficiaries into 11 different overall target groups according to these reasons along with the beneficiary's age and the degree of reduced working capacity. The statutory requirements for employment service varies across target groups, but the job centers are required to conduct frequent development interviews and ensure job searches and participation in company internships, training, and/or development courses for all target groups.

The size of the 94 job centers varies considerably. In the smaller job centers, each front-line manager has the responsibility for more target groups, whereas the responsibility for one target group is divided between several units and front-line managers in the largest job centers. Nevertheless, it is possible to follow the performance of each unit in the national employment service registry as this registry contains detailed information about employment status and several related variables down to the level of each individual citizen.

1.4　Research Method

The LEVO project is carried out as a field experiment, and the participating public managers were randomly assigned to one of three groups. Public managers assigned to the first and the second group participated in a two-day leadership training and received a static or dynamic software solution that provided implementation nudging in relation to target behavior in the training: goal-oriented development dialogues. Utilizing a waitlist design, the third group was the control group in the experiment.

The first and the second group had their first training day between October 19 and November 13, 2020. On the first training day, they were introduced to a software solution (either static or dynamic) that supported them in conducting goal-oriented development dialogues with their employees. When the public managers committed to participating in the project, they also committed to conducting these dialogues with their employees. The first group received a static software solution providing implementation nudges, and the second group received a dynamic software solution. The content of the two software solutions was identical apart from being either static or dynamic. The static solution used writeable PDFs and the managers' existing email and calendar software, whereas the dynamic version was a more interactive cloud-based software solution (see section 2.3. for further description of the leadership tools that provided implementation nudging). The form and content of the leadership training course were identical for the two groups except that the introduction to the leadership tool in group 2 was combined with a technical introduction to the software solution. However, the duration of the development course was the same.

The third group attended the leadership training and got access to a leadership tool of their own choice in February 2022 – after a post-intervention survey had been conducted among managers and employees in all three groups.

Table 1.2. provides an overview of central activities in the leadership development field experiment.

Table 1.2: Overview of activities in the leadership training program

Time	Activity
April–August 2020	Recruiting job center units: All 94 Danish job centers were invited to take part in the project, and follow up was conducted by phone and e-mail. The project was described and discussed in individual (physical or virtual) meetings with each of the participating job centers. These meetings included the management team and head of the job center.
August 2020	Pilot testing questionnaires for data collection among public managers and employees. Pilot testing was conducted in a municipality that decided not to take part in the project.
September 2020	Pre-survey among public managers and their employees (including the control group as well as the two intervention groups).
October–November 2020	Public managers in treatment groups 1 and 2 participated in module 1: one day of leadership training focusing on face-to-face transformational leadership. As a part of the training, the managers were introduced to either a static software solution (intervention group 1) or a dynamic software solution (intervention group 2) that provides implementation nudging on goal-oriented development dialogues.
October–November 2020	Reminder 1 for managers in treatment groups 1 and 2: a short e-mail reminding the participating managers on the main takeaways from module 1 and the deadline for their task of conducting goal-oriented development dialogues with their employees.
December 2020	Reminder 2 for managers in treatment groups 1 and 2: a short e-mail reminding the participating managers about the purpose of the development program and instructions for follow-up on their action plan and dialogues with their employees. The template for follow-up was attached to the e-mail. This template was also intended as the core element in network meetings, but less than 30 percent of the managers participated in such meetings.
January 2021	Reminder 3 for managers in treatment groups 1 and 2: a short reminder of the importance of and deadline for the first goal-oriented development dialogue with each of their employees. This reminder was sent along with the invitation for module 2.
April–May 2021	Public managers in treatment groups 1 and 2 participated in module 2: one day of leadership training focusing on face-to-face transformational leadership.
April–May 2021	Reminder 4 for managers in treatment groups 1 and 2: a short e-mail reminding the participating managers on the main takeaways from module 2 and the importance of conducting goal-oriented development dialogues with their employees.
October 2021	Reminder 5 for managers in treatment groups 1 and 2: a short e-mail reminding the participating managers about the purpose of the development program and instructions for follow-up on their action plan and dialogues with their employees. The template for follow-up was attached to the e-mail. This template was also intended as the core element in network meetings, but less than 30 percent of the managers participated in such meetings.
January 2022	Post-survey among public managers and their employees (including the control group as well as the two intervention groups).
February 2022	Public managers in the control group (waitlist design) participated in module 1: one day of leadership training focusing on face-to-face transformational leadership.

	As a part of the training, the managers were introduced to a static as well as a dynamic software solution that provides implementation nudging on goal-oriented development dialogues. Managers in the control group could chose freely between the two versions of software solutions.
February–March 2022	Reminder 1 for managers in the control group (waitlist design) – same as reminder 1 above.
March 2022	Reminder 2 for managers in the control group (waitlist design) – same as reminder 2 above.
May 2022	Reminder 3 for managers in the control group (waitlist design) – same as reminder 3 above.
September 2022	Public managers in the control group (waitlist design) participated in module 2: one day of leadership training focusing on face-to-face transformational leadership.
September–October 2022	Reminder 4 for managers in the control group (waitlist design) – same as reminder 4 above.
March 2023	Reminder 5 for managers in the control group (waitlist design) – same as reminder 5 above.

1.4.1   The Randomization Process

The participating public managers were randomly assigned to the three different intervention groups. I expected that municipality-specific conditions would affect the development in leadership behavior, employee motivation, and performance. The randomization was, therefore, performed within each of the participating job centers, proportionally stratified so that an equal number of public managers was assigned to each of the three groups.

The randomization was performed using the RAND function in Excel. An Excel document was made for each job center in which the first column contains consecutive numbers, and the second column contains the number of the group to which the leader is assigned. The second column contains the numbers 1-2-3-1-2-3-1-2-3, etc. The third column contains the names of the participating leaders in the specific job center, and the fourth column contains a random number generated by the RAND function [=rand()]. When the names of the leaders are entered into the Excel sheet, the sheet automatically generates random numbers in the fourth column (actually, the sheet generates new random numbers every time an action is taken in the sheet). Then the third and the fourth columns are sorted from lowest to highest according to the numbers in the fourth column. As the first and second columns are not included in this sorting process, the leaders are now randomly assigned to the three intervention groups with an equal number of leaders in each group, provided that the number of leaders in the specific job center is divisible by three.

If the number of leaders in the specific job center is not divisible by three, an extra number will be added to the second column. The first extra number will be 1, the second will be 2, the third will be 3, the fourth will be 1, and so on. If there are five leaders in the first job center, an extra leader is placed in groups 1 and 2. The numbers in the second column will simply be "1-2-3-1-2." If there are also five leaders in the second job center, an extra leader is placed in groups 3 and 1. The numbers in the second column will be "1-2-3-3-1." The additional numbers were adjusted to assure an equal number of leaders in each of the three groups.

The randomization of the leaders is documented with a read-only and date-specified Excel file from the randomization of each job center. The randomization was completed by September 1 before the pre-intervention survey was distributed among the participating public managers and their employees.

1.4.2 Drop Out

Of the 226 public managers who initially signed up for the experiment, 39 dropped out of the program during the intervention period: October 2020–January 2022. Dropouts were primarily due to job changes, retirements, and maternity leave (29 managers), workload (six managers), and illness (one manager). Three public managers dropped out before the training program began. The dropout rates were quite similar across experimental conditions, with 29 public managers dropping out of the two treatment groups and 10 public managers dropping out of the control group. Reasons for exiting the program were also evenly distributed across groups, cf. Table 1.1 below.

Table 1.1: Drop out

	Groups			Total
Reason	Control	Treatment 1 (Static tool)	Treatment 2 (Dynamic tool)	
Changed job position, maternity leave, or retirement	7	9	13	29
Work pressure	2	2	2	6
Illness	0	1	0	1
Program assessed as irrelevant	1	1	1	3
Total	10	13	16	39

Note: Treatment 1 is leadership training combined with a static dialogue process tool, and treatment 2 is leadership training combined with dynamic dialogue process tool.

1.4.3 Survey Data

Prior to the first leadership training day, a pre-intervention survey was conducted among public managers in the two treatment groups as well as the control group (waitlist group). At the same time, a pre-intervention survey was conducted among their employees. The pre-survey was conducted in September and October 2020, but I did not have access to data before submitting the project protocol to www.osf.io. Follow this link to access the pre-registration. The surveys are handled by an administrative unit at the associated university. The unit assured that I did not have access to data from the pre-intervention surveys until October 20, 2020. The pre-registration was submitted on October 16, 2020.

The survey among the public managers aims to uncover the leaders' own experience of their leadership behavior, focusing on transformational, transactional, and professional development leadership behavior. The survey among the employees aims to uncover the employees' experience of the same aspects of their

immediate superior's behavior. In addition, this survey covers employees' job attitudes such as needs satisfaction, work engagement, etc.

In January 2022, a post-intervention survey was conducted among the same public leaders and their employees. To allow panel analysis, this survey contained the same core questions as the pre-intervention survey. Additionally, based on the ongoing theorization in the project, the post-intervention survey also included questions on managers' use of goal-oriented development dialogues.

1.4.4   Register Data

Data on the organizational performance is collected from a national longitudinal database called "DREAM." The database contains detailed information on labor market status and numerous background variables about every inhabitant in Denmark who has received public cash benefits. The database is based on information from the Ministry of Employment, the Ministry of Education, the Tax Administration, and the Civil Registration System in Denmark.

1.5   The Leadership Development Intervention

The intervention in the LEVO project consists of two days' leadership training focusing on transformational leadership through goal-oriented development dialogues combined with a software-based leadership tool that nudges public managers' use of such dialogues. This two-sided intervention is described in the following.

1.5.1   The Leadership Training

This section presents the theory, activities, and objectives of the leadership training in the LEVO project. To ensure a solid framework for the leadership training program, the overall teaching and learning principles, theory, and model are based on the same approach as in previous similar field experiments. Thus, the following description is heavily inspired by the LEAP project ("Leadership and Performance"), in which the approach has proven appropriate as a framework for the leadership teaching and development of 672 public leaders (Holten et al., 2015; Jacobsen et al., 2022).

The main activities in the leadership training were presented in Table 1.2. The following pages provide a more detailed description of the training intervention.

1.5.1.1   Overall Teaching and Learning Principles

Leadership teaching and development is a special area of adult teaching and learning as the activity of a manager requires both cognitive and behavioral skills. Creating a teaching and development program for public managers therefore requires that both elements be considered. By developing an overall teaching and learning model, it is illustrated how levels and processes are aligned to obtain real cognitive and behavioral changes. The program will focus on the participants' own development. The program is intended to influence participants' leadership behavior.

- *Experiential learning theory*

  Experiential learning describes learning as the process whereby knowledge is created through the transformation of experience (Guthrie & Jones, 2012). The project applies experiential learning at two

levels: teacher and participants. When preparing the program, the teacher learned through experience via the teaching pilot. Participants learned through experience via their own leadership behaviors/actions and via other participants' leadership behaviors/actions.

- *Action learning*

Action learning is described as adapting, adopting, and internalizing the new ways of thinking and acting. Developing and practicing new skills are described as some of the most effective developmental tools (Curry, 2012: 16).

- *Combining learning formats (Curry, 2012)*

The program combined learning formats that are suggested to sustain deep learning. "Formal programs must be supplemented by mentoring, coaching and other interventions designed to sustain deep reflection and ongoing learning in the real world of work" (Tourish, 2012: 28). We combined the learning formats in a strategic way to support central learning processes.

- *Align leadership development with business strategy (Curry, 2012; Thomas et al., 2012); Align employee and company goals*

New research on leadership development suggests that linking new leadership behaviors to company goals (and personal experience) will make the development persist (Thomas et al., 2012). This approach suggests making a thorough assessment of organizational needs and forming the necessary leadership skills on that basis. The project takes a broader perspective by developing leadership skills that enable managers to make the alignment of the organizational strategies with their leadership behavior for themselves. The philosophy of the teaching approach is to provide individuals with the necessary meta-tools instead of forming our program in response to specific here-and-now needs.

- *Multiple source feedback*

The project has a strong emphasis on the process of feedback, and the program integrates feedback from multiple sources.

a) Feedback from self: The program included activities that supported self-reflection. Specifically, the consecutive work on individual action plans provided self-feedback to participants on their own leadership actions, e.g., by reflecting on what to develop and what to leave aside, setting and accomplishing goals, and reflecting on success and/or failure.

b) Feedback from others: The program provided occasions for managers to receive feedback from fellow program participants (in groups and voluntary networks) and their teacher. These feedback opportunities were oral and delivered mainly during classes. Feedback from employees were given in written and oral form as a part of using the software solutions nudging the goal-oriented development dialogues. After the end of the program (and after the final data collection), managers received feedback from their followers (report on followers' questionnaire responses).

c) Feedback from learning: The program gave participants feedback on their own learning progress. The feedback focused on awareness/reflection and the assessments were open-ended. The assessment contained feedback at both individual and class level (depending on the specific learning outcomes).

- *Structured and supported activities*

  All teaching activities were structured and supported by templates and schemes to reinforce and direct individual learning. Additionally, this secured a high level of similarity across the training sessions for the public managers in groups 1 and 2 and supported uniformity in the treatment no matter which of the 12 offered dates they chose to enroll in. Effective activities to support structured reflection are reading, writing, and discussing (Guthrie & Jones, 2012). Furthermore, the program supported structured reflection through participants' work with individual action plans.

- *Role modeling*

  The teacher intended to role model important learning aspects. For instance, the teacher intended to role model the leadership behaviors that the program is intended to transfer to participants by enacting the same visionary mechanisms in the teaching.

- *Time-on-task*

  The program contained elements to support learning and development to take place outside the classroom. This was supported by the individual action plans (goals for the period in between modules) and voluntary networks.

1.5.1.2   Teaching Environment

Non-physical

- The confidential room. The teacher facilitated the development of confidentiality between participants as well as between participants and the teacher. The purpose of confidentiality is to bring the translation/transfer and feedback processes as close to the individual realities as possible. Participants and the teacher agreed on mutual confidentiality as a premise for the development program, and the teacher role modeled confidentiality by sharing information from their own current and previous workplaces throughout the program. Participants were encouraged to follow the teachers' example and invest in the reciprocity and confidentiality between participants.

- Participants were met with the expectation to participate and test/apply their learning in practice.

Physical

- Module 1

  o   Conference set-up with seating arrangement in cluster/group and a maximum of 20 public managers in each session.

  o   The course was offered in three different regions of Denmark on 12 different dates: six course dates for group 1, and six course dates for group 2. Additionally, managers that did not have the opportunity to participate in the planned courses (due to sickness, etc.) were offered the opportunity to participate in courses that were held via Zoom.

  o   The duration of module 1 was 9.00–16.00, plus an hour from 16.00 to 17.00 where the teacher was available for questions and dialogue about the themes of the day.

- Module 2
  - o Conference set-up with seating arrangement in cluster/group and a maximum of 20 public managers in each session.
  - o The course was offered in three different regions of Denmark on eight different dates: four course dates for group 1, and four course dates for group 2. Additionally, managers that did not have the opportunity to participate in the planned courses (due to sickness, etc.) were offered the opportunity to participate in courses that were held via Zoom.
  - o The duration of module 2 was 9.00–15.00, plus an hour from 15.00 to 16.00 where the teacher was available for questions and dialogue about the themes of the day.

1.5.1.3 Teaching preparation and process evaluation

In parallel to participants' learning, the teacher also developed his teaching skills in practice before initiating the program. This was done in a teaching pilot. The project leader and main researcher in the LEVO project conducted all the teaching in the program. The teacher has 10 years' experience as head of employment services in two different Danish municipalities. This experience was utilized in order to connect the theoretical and conceptual knowledge to the public managers' field of practice and to support the reflection and skill building regarding transformational leadership.

Teaching pilot: Both modules were pilot tested two times by the teacher. The pilot teaching process was followed and evaluated with two purposes: 1) documenting the specific activities and their execution, and 2) rehearsing the teaching to systematize the treatment across the offered dates of training.

The purpose of the first pilot was to refine the program and its activities, methods, and mechanisms. The audience consisted of students (political science) that were instructed to role-play the part of public managers (within the employment services). Two senior researchers and two senior consultants were present and provided peer feedback on possibilities for improvements. The senior researchers have expertise within the field of public management and transformational leadership specifically. The senior consultants have expertise within the development of leadership tools, and both researchers and consultants have comprehensive experience with teaching and training public managers and leaders.

The purpose of the second pilot was to rehearse and document the program. The audience in the second pilot also consisted of students (political science) that were instructed to role-play the part of public managers (within the employment services).

After each training session, the teacher made structured records on eventual deviations from the planned teaching, learning points, and FAQs. No substantial deviations from the planned teaching were made.

1.5.1.4 Teaching and Learning Model

The teaching and learning model in the project is adopted from Holten et al. (2015). The model consists of three overall levels of learning and three main processes.

Model 1: Teaching and learning model
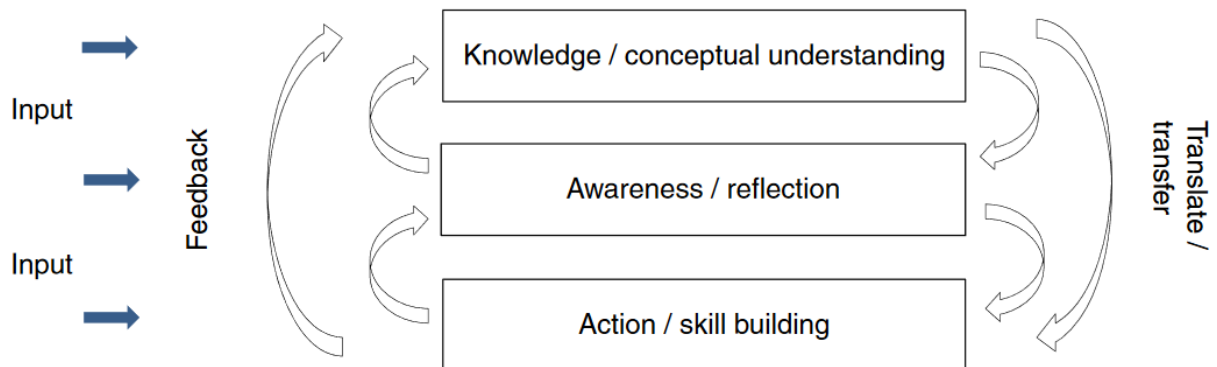
(Holten et al., 2015)

Each level provides learning through the following:

1) Knowledge/conceptual understanding

   Focuses on gaining knowledge and developing participants' conceptual understanding of transformational leadership, leadership behaviors, and translation of visions/goals.

2) Awareness/reflections of own situation/behavior

   Focuses on enhancing awareness and reflection related to the specific situation and behavior of each participant.

3) Actions/skill building (key competencies)

   Focuses on the enactment of leadership, i.e., specific behaviors and skills.

Three main movements define how learning is obtained in our model:

1) Input process: Different teaching and learning input can be introduced to the model (at all three levels). The input can take the form of different activities and materials.

2) Translate/transfer: The translation/transfer process is where learning is obtained through transfer from one level to another and from one setting to another. This is where the knowledge/conceptual understanding is transformed into awareness/reflection and action/skill building and where awareness/reflection is transformed into action/skill building. Transfer of learning is intended to support managers in adapting and transferring knowledge and awareness to their specific organizations, situations, and actions.

3) Feedback: The feedback process is where "lower level" learning feeds up to "higher levels" of awareness and understanding. For example, skills learned through action will feed back to the participants' awareness and reflection, which again can lead to deeper knowledge/conceptual understanding.

In the model, managerial leadership training and development is not a linear process. The program is developed to support circular, alternating movements of transfer and feedback. These development/learning processes (illustrated by arrows) are the focus of the model.

The overall program design of the treatments facilitates participant learning through all three processes: input, translation/transfer, and feedback processes.

The teaching activities will, furthermore, ensure that participants gain meta-skills in the following:

1) Giving/receiving feedback.

2) Reflecting upon one's own (and others') context, experience, and leadership.

3) Translating and transferring knowledge/awareness/skills from one area/level/experience to another.

Both modules will emphasize different learning levels and processes (and combinations thereof). As leadership is not only a question of theoretical knowledge but also "a performance sport" (Doh, 2003), our program integrates cognitive ("knowing what") and behavioral ("knowing how") aspects of learning. The teaching activities therefore support both cognitive and behavioral learning, as well as their relationship. The majority of the included teaching activities have proven efficient in developing leadership (Johnstal, 2013).

1.5.1.5   The Teaching and Learning Program – the teaching activities and intended learning outcomes/ILO

The teaching and learning program consists of two modules (6–7 hours each) scheduled with approximately 6 months between the modules. The first module intended to provide the leaders with sufficient knowledge, reflection, and action planning to be able to conduct transformational leadership through face-to-face communication and use the provided software solutions that support goal-oriented development dialogues. The second module intends to elaborate the leaders' knowledge, reflection, and action planning based on the experiences that the public managers have had since the first module. The second module also introduced new aspects of leadership development, but the main focus was to repeat and elaborate insights already introduced in the first module, continuing the focus on goal-oriented development dialogues.

Module 1: Visionary leadership and goal-oriented development dialogues

The goal of module 1 is to:

o   Enhance the participants' ability to translate overall organizational visions to their local organization/department/team and own leadership style.

o   Provide the participants with tools for communicating and sharing visions with their employees and implementing these goals/visions in practice via face-to-face communication applying insights from goal-orientated coaching.

Module 2: Sustainment and credibility

The goal of module 2 is to enhance:

o   The leaders' knowledge, reflection, and action planning based on the experiences with transformational leadership through goal-oriented development dialogues.

o Participants' continuing efforts to sustain their leadership strategies in maintaining clear visions, thereby enforcing credibility and positive effects of the visionary leadership on work engagement and organizational performance in the units.

o Participants' abilities to navigate when new goals/visions are introduced. Strategies and learning from module 1 become meta-skills that can be applied at a higher level (transfer of learning from across loops).

Public managers in treatment groups 1 and 2 attended module 1 in October/November 2020 and attended module 2 in April/May 2021. Apart from a short introduction to either a static (group 1) or a dynamic (group 2) software solution to nudge target behavior in the aftermath of the training, the training sessions were identical for the two intervention groups. The control group (waitlist design) attended module 1 in February 2022 and module 2 in September 2022, i.e., after the post-survey was conducted.

The participants were encouraged to work with their individual action plan in three steps:

1) The action plan was prepared at note level during teaching (marked with * in the lecture plan).

2) Participants worked individually with their action plans outside class.

3) The action plan was the focal theme for discussions and feedback in networks between participants. Note that participation in these networks was voluntary and that less than 30 percent of the participants took part in this activity.

Participants' work on the individual action plans was facilitated by templates. Templates contained a structure for the action plan and questions in relation to specific learning points and elements in the action plan structure, e.g., how will you apply the knowledge of translation in your leadership? Which areas will you prioritize and how? The templates were part of the Power Point slides that were used in the training in modules 1 and 2.

The participants received a notebook in which they could write their action plan. If some participants already used a digital platform for their action planning, they were encouraged to use this tool instead of the notebook.

Communication with participants was done in a charismatic and motivational style. The teacher attempted to provide instructions clearly and in easy language. In the lectures, the focus was on securing learning and clarifying core concepts via dialogue and questions.

During module 1, the participants were introduced to either the static (group 1) or the dynamic (group 2) software solution supporting implementation of target behavior: goal-oriented development dialogues. This introduction was integrated into the lectures and intended to provide participants with an understanding of the connection between central learning outcomes and the design and use of this software.

Table 1.3: Pre-course

Pre-course			
Activity	*Learning level and process*	*Learning outcomes*	*Practice*
Pre-assessment	Input process	-	Participating public managers respond to a baseline survey on leadership behavior. Their employees respond to a survey on leadership behavior, satisfaction of basic needs, person–organization fit, vision valence, and work engagement.
Reading	Input process	Gain basic knowledge of transformational leadership	Participants receive a short article (5 pages) that provides a basic introduction to visionary leadership and the typical pitfalls in this leadership approach. The article is sent via e-mail along with the agenda for the first module, a case description, and the individual assignment mentioned below.
Read case and questions	Input and transfer process	*The case gives an example of how the individual assignment could be solved.*	Case sent out before teaching
Individual assignment on goals/vision Each participant is requested to describe their organizational goals/visions and the goals/visions of different stakeholders. Each participant is requested to translate these goals/visions to their own level.	Input process	Become aware of/reflect upon the goals/visions of one's own organization at different levels (society, organization, manager/department, employees) and in relation to one's own goals/visions. Formulate these goals/visions.	Participants will be informed that what they prepare will become part of a group exercise during teaching. The two steps in template 1: 1) Identify the vision of your organization at the level above you/your immediate supervisor. 2) Begin the translation. To support this exercise, participants received a template (template 1) and an example of a completed template. Participants were informed that the exercise is to develop a *first draft* of a translation of the

			organizational vision for their own unit.

Table 1.4: Module 1

Module 1: Visionary Leadership and "Goal-Oriented Development Dialogues"				
Time	*Activity*	*Learning level and process*	*Learning outcomes*	*In practice*
8.30– 9.00	*Arrival and breakfast*			Makes it easier for participants to settle and be ready to engage in the teaching process.
9.00– 9.20	*Introduction and presentation*	Input process	The participants are introduced to the objectives of the development program and to the expectations regarding their participation.	1) Short presentation of the teacher and the research project. 2) Presentation of the overall learning objectives of the program and module 1. Emphasis on theory to practice. 3) Principles for the course (confidentiality, transfer and implementation of learning to one's own organization). Emphasize that the course is intensive and ambitious, that it requires preparation, and that the time should be used in a focused way. Staying focused is important for the quality of learning. Breaks: Active breaks. Lunch is the only real break. 4) Encourage participants to apply themselves and test their learning in their own organization between the two modules. 5) Present the purpose and process of the individual action plan. 6) Present the purpose and methods of the voluntary networks. 7) There is no presentation round; participants become acquainted through group work and direct relations. The teacher explains the reasons. Nametags for all participants: name, position, and organization.
9.20– 9.50	*Lecture: Introduction to visionary leadership and creating a vision*	Input process Knowledge level	Participants gain knowledge of transformational leadership and why they should take an interest in this type of leadership Points of attention regarding vision creation or translating the	Slide-supported lecture. Focus on securing learning and clarifying core concepts via dialogue and questions. The lecture presented the core elements in transformational leadership and information on the relationship between transformational leadership behavior and work engagement + organizational performance.

| | | | organizational vision to their own units. | The lecture introduces:
1) The translation of goals/visions on superior levels to a vision for the unit.
2) Inward/externally orientated visions.
3) The use of image-creating language in visions.
4) The consequences of value conflict for transformational leadership.

The lecture contains a case to illustrate how translations can be done. |
| 9.50–10.40 | *Coffee and exercise:*
a) Individual preparation on vision for own unit
b) Exercise 2 & 2 with presentation and feedback on the vision
c) Work with individual action plan | Transfer process

Feedback process

Reflection level and action level | Becoming aware of/reflecting upon the goals/visions of one's own organization at different levels (society, organization, department, employees) and in relation to the goals/visions for own unit. Formulating these goals/visions.

Higher level of awareness of the relationship between other organizations' goals/visions and other managers' goals/visions.

Planning actions to improve one's own vision. | Individual preparation (10 minutes):
- Find your pre-course individual assignment.
- Reflect on the vision that you have created using the knowledge from the lecture.
- Identify what you can do to strengthen the vision and make it more relevant. What actions will it take?

Participants are paired. The groups are composed of leaders from different municipalities.

Exercise 2 and 2:
Action learning, the exercise will be in the form of role-play in pairs: Participants should imagine that they explain the goals/visions to employees.
5 min presentation for each group member.
5 min feedback on performance from group members.

Work with action plan (10 minutes):
- Write your first draft of a vision for your unit in your notebook (handed out). |

				- Consider how you will communicate with your employees about a vision for your unit. To which degree and in which way will you engage the employees in the creation of the vision? - How will you align the vision with your own leader? How will you explain the relationship between the vision and the "goals from above"? How will you explain why you need to create a vision for your unit? Teacher role during exercise: 1) available for questions; 2) circulate among groups to pick up information for the plenary/group learning.
10.40–11.00	*Plenary/group learning*	Transfer process Reflection level and knowledge level Feedback process	Becoming aware of one's own learning. All plenary sessions support synthesis and meta-learning.	Teacher-controlled plenary learning. Two questions/learning points: 1) What did you learn about the goals/visions in organizations in general? 2) What did you learn about goals/visions in your own unit? Teacher bridges between the specific and the theoretical/overall.
11.00–11.50	*Lecture: Sharing and sustaining the vision via coaching-based face-to-face dialogue*	Input process Knowledge level	Gaining knowledge of how face-to-face communication based on goal-focused coaching can foster sharing and sustaining a vision. Gaining insight into the steps of the goal-oriented development dialogues. Gaining knowledge on coaching techniques as a tool for transformational leadership.	Slide-supported lecture. The lecture introduces: 1) Communication barriers in regard to creating awareness and common understanding of an organizational vision. 2) Strengths in face-to-face communication in regard to visionary leadership. 3) A model in seven steps for the "Vision Dialogue" – how to share and sustain the vision via face-to-face communication in goal-oriented development dialogues. 3) Coaching techniques as a tool in visionary leadership.

			Gaining knowledge on how goal-oriented development dialogues can support vision sharing and how the leadership tool can support such dialogues	First introduction to the software solution supporting goal-oriented development dialogues (vision–dialogue tool): setting the stage and introducing the first four questions in the preparation process.
11.50–12.10	*Exercise 2 & 2*	Transfer process Reflection level	Based on the knowledge gained, becoming aware of/reflecting upon the connection between the vision/goal in one's own organization and one's own personal values. Increasing the understanding of the goals/visions in one's own organization. Improving the ability to conduct face-to-face dialogue with coaching techniques.	Exercise 2 &2 (20 min): - Interview each other in pairs based on the first four questions in the leadership tool. - One of you takes the role of the other's supervisor. The other must answer the questions as themself in the role of manager in their own organization. - You must respond based on the goals/vision, etc., "from above" in your organization; see the preparation task for today. - Swap roles (10 minutes for each interview). Establish networks during lunch.
12.10–12.40	*Lunch*			
12.40–13.10	*Lecture: Goal-oriented development dialogue: set a goal*	Input process Knowledge level	Gaining knowledge on the positive effects of goal setting, and on how these effects differentiate with types of goals. The participants gain awareness on how the software solution can support transformational leadership through goal-oriented development dialogues. The	Slide-supported lecture. The lecture introduces: 1) The positive effects of goal setting. 2) Different types of goals and different types of impact on motivation, performance, and well-being. 3) Strategies for aligning goals between the organizational level and the individual employee. Introducing the vision–dialogue tool: questions that support goal setting.

				participants are motivated to use the software solutions for this purpose.	
13.10–13.25	*Individual exercise*	Transfer process Reflection level	Reflecting upon which personal goals can be set in order to improve one's own visionary leadership performance and to improve one's own contribution to the vision in one's own organization.	Answer the preparation questions (5–19) from the vision–dialogue template on your own (15 minutes): - Imagine that you are preparing a dialogue with your supervisor. Answer the questions as yourself in the role of the leader in your own organization. - You must respond based on the objectives/vision, etc., "from above" in your organization (see the preparation task for today). - The questions should help to prepare you to set an individual goal regarding your ability to perform visionary leadership. Template: Scala and text questions from the software solution (dialogue tool). Teacher role during exercise: available for questions.	
13.25–13.55	*Exercise 2 & 2*	Feedback process Transfer process Action level and reflection level	Gaining practical experience with the use of coaching techniques when translating the organizational vision into goals on employee level. Further insight into which personal goals can be set in order to improve one's own visionary leadership performance and to improve one's own contribution to the vision in one's own organization.	Participants are paired and role-play dialogue on the organizational vision and goal setting. 1) In groups of two: One of you (i) plays the role of the others' supervisor. The other (ii) acts as yourself in the role of manager in your own unit. • Conduct a dialogue about the organizational vision and goal setting using the questions from the leadership tool (the software solution) and insights from the lecture. • Base the dialogue on the manager's (ii's) answers to the preparation questions. • The supervisor (participant i) should use coaching-based techniques to facilitate the manager's (participant ii's) self-congruent development goals that contribute to the organizational vision. (12 minutes)	

				2) The leader (b) gives short feedback on the supervisor's (i's) coaching performance.
				• Based on knowledge from the lecture:
				   ○ What went well?
				   ○ What could be improved?
				(3 minutes)
				
				3) Swap roles and repeat tasks 1 and 2.
				
				Teacher's role during exercise: 1) available for questions; 2) circulate among groups to pick up information for the plenary/group learning.

13.55–14.10	*Plenary/group learning*	Transfer process Reflection level and knowledge level	Becoming aware of one's own learning.	Teacher controlled plenary learning. 1) What did you learn about coaching techniques and face-to-face dialogues regarding the organizational vision? • In general? • Regarding yourself in the role as a manager? Teacher bridges between the specific and the theoretical/overall.
14.10–14.40	*Lecture: Making an action plan, monitoring, evaluating, adjusting, and reaching the goal*	Input process Knowledge level Meta-skills	Gaining knowledge about how to work with an action plan and support self-reflection through monitoring and evaluation. Gaining knowledge and awareness of how to apply changes on an individual level. Gaining knowledge on the use of solution-focused language in the goal implementation phase.	Slide-supported lecture. The lecture introduces: 1) How to support employees in developing an action plan, and how to improve the contribution to the organizational vision. 2) How to follow up, monitor one's own actions, evaluate, and correct goals and action plans. 3) Barriers in face-to-face dialogues on organizational visions.

			The participants gain awareness on how the provided software solutions can nudge and support transformational leadership through goal-oriented development dialogues. The participants are motivated to use the software solution for this purpose.	Introducing the vision–dialogue tool: questions that support action planning, monitoring, evaluation, and adjustment of goals and the action plan.
14.40–15.10	*Individual work with own action plan*	Transfer process Reflection level and action level	Based on the knowledge gained, becoming aware of/reflecting upon how to turn one's own goals into actions. Based on that awareness, making an action plan for what to do and work with specifically until the next module.	Template based: Based on the lectures today and regarding your (most important) goal from the last exercise: 1) Write your (most important) goals in relation to the organizational vision in the provided notebook. 2) Imagine waking up one morning having reached your goal! • What changes do you notice when you get to work? • Which actions have made you reach your goal? 3) Write down in your notebook: • The signs that will show you that you have reached your goal. • What you will enjoy by reaching your goal. • How you will use the methods and practices you have learned today. • The (most important) actions you will take – and when (be specific). • When you will follow up on your actions (set a date). Teacher role during exercise: available for questions
15.10–15.40	*Coffee and group exercise (network)*	Feedback process	Increasing transfer skills regarding the awareness of goals/visions.	In groups of three, 1) One of the managers presents (5 min):

		Transfer process Action level and reflection level	Increased insight into how to improve action plans and how to support others in doing so. Reflecting on and improving own action plan.	• Short introduction to their goal. • What they would like the feedback to focus on. • Their first draft on an action plan to reach their goal and improve their visionary leadership behavior. 2) The group gives feedback (5 min): • Based on today's lectures, which qualities do you see in the goal and the action plan? • Do you have suggestions for improvements to the action plan? • Do you have suggestions for improvements to the plans for follow-up? Next person in the group presents, and the group gives feedback (10 min per person in the three-person group). Teacher role during exercise: available for questions.
15.40–16.00	*Closing*	Input Feed forward Knowledge level, reflection level, and action level	Awareness and overview of main learning points and on how to apply these points in practice. Supporting implementational mindset regarding goal-oriented development dialogues.	The teacher sums up key takeaways from the lectures and discussion and clarifies in relation to learning outcomes. The teacher provides an overview of tasks that the participating managers must perform during the next 6 months (between modules 1 and 2): - Working with their action plan, with a focus on goal-oriented development dialogues. - Conducting goal-oriented development dialogues and follow-ups with each of their employees. Both aspects are supported by the software solutions provided.
16.00–17.00	*"Question hour"*	Transfer process	Increasing understanding of the learning points of the day.	The teacher is available for questions and dialogue about the themes of the day:

		Knowledge level, reflection level, and action level		- Knowledge level: understanding the underlying concepts and theory. - Reflection level: applying the knowledge to the role as leader in the participants' own organization. - Action level: questions and supervision on action planning, and questions on goal-oriented development dialogues and use of the software solution.

Table 1.5: In-between activities between modules 1 and 2

In-between activities (between modules 1 and 2 – six months)			
Activity	*Learning level and process*	*Learning outcomes*	*In practice*
Goal-oriented development dialogues with employees: goal-oriented development dialogues	Transfer process Action level	Gaining experience and skills regarding face-to-face transformational leadership: goal-oriented development dialogues. Enhancing the ability to share and sustain the vision and to translate the vision into action via goal-oriented development dialogues.	The participating public managers conduct goal-oriented development dialogues with each of their employees. The dialogue is supported by the software solutions (either static or dynamic) provided in the development program and has a duration of approximately 1 hour plus preparation. The estimated preparation time is 15 minutes for the employee and 10 minutes for the manager, but the preparation time is also expected to vary a lot. The goal-oriented development dialogues are conducted after the manager's participation in module 1 (October 19 and November 13, 2020) and the managers were instructed that they must be completed by the end of February 2021. The managers were instructed that they must conduct follow-up dialogues with their employees at least quarterly until January 2022 (where the intervention ended, and the post-intervention survey was carried out). These follow-up dialogues were also supported by the software solutions provided. The preparation for these dialogues was expected to have a duration of 10 minutes for each employee and 5 minutes for the leader. The duration of the dialogue

			was expected to vary a lot: between 10 and 30 minutes depending on how well on track the employee is regarding their development goal and action plan. The managers were also instructed that they could choose to conduct the follow-up dialogue as a group process, which was also supported by the software solutions. The preparation is the same, and the group dialogue was expected to have a duration of 1–1½ hours including individual work on adjusting development goals and action plans. The managers received three reminders about this task. The reminders also pushed focus on the task on individual action plans (see below). The provided leadership tools (software solutions providing implementation nudging) also supported the task of conducting goal-oriented development dialogues.

Individual action plan/home assignment	Transfer process
	
	Reflection level and action level
		Connecting learning from course day one and transferring learning into a detailed, overall action plan.
		
		Reflecting upon one's own learning and transfer.
			The participants combine notes, exercises, and learnings from module 1 and continue their work on their individual action plan.
			Process:
			1) The participants are encouraged to spend 30 minutes every 14 days to reflect on their development goal and their work with the action plan:
			   o To what extent are you following your action plan – why/why not?
			   o Are there already signs that the action plan brings you closer to your goal? What signs/why not?
			   o Are there elements of the action plan that need more focus?
			   o Are there elements of the action plan that need to be adjusted to better achieve the development goal?
			2) The action plan forms the basis for the voluntary network meeting.

Voluntary network meeting	Feedback process Transfer process	The focal point of the networks will be the individual action plans. The networks will support the feedback learning processes (from awareness to increased	The networks will work in a *structured* way to give peer feedback and create vicarious learning. The networks will be facilitated by team exercises and material. Each network will consist of five members from different municipalities but within geographical proximity.

| | Reflection level and action level | knowledge). The networks will also support the translation/transfer process (by participants gaining knowledge of peers' problems/challenges/ways of doing things/experiences). Participants will, thereby, increase both their awareness of other ways/their own way and their potential actions/skills and integrate this in their action plans. | | |

Table 1.6: Module 2

Module 2: Visionary Leadership and "Goal-Oriented Development Dialogues" – Sustaining a Meaningful Direction				
Time	*Activity*	*Learning level and process*	*Learning outcomes*	*In practice*
8.30–9.00	*Arrival and breakfast*			Makes it easier for participants to settle and be ready to engage in the teaching process.
9.00–9.30	*Introduction and activating learning from managers' work with goal-oriented development dialogues and transformational leadership after module 1*	Input process Knowledge level	Awareness of module 2 learning goals. Reminding central takeaways from module 1.	Slide-supported lecture. 1) The participants are introduced to the objectives of module 2: • A clear(er) understanding of how to embed and sustain the organizational vision in your unit and thereby increase work engagement and performance. • An understanding of how organizational visions can be used as a tool in change management. • An updated plan for how you will sustain and develop your transformational leadership behavior through face-to-face dialogue with your employees. 3) Central takeaways from module 1 are briefly recapped.

| 9.30– 9.55 | *Exercise: Experience with transformational leadership in goal-oriented development dialogues* | Feedback and transfer process

Reflection and action level | Becoming aware of and reflecting on own and others' experiences with goal-oriented development dialogues and transformational leadership dialogues.

Becoming aware of potentials, difficulties, and possible solutions in relation to goal-oriented development dialogues and face-to-face transformational leadership.

Reflecting on actions to improve goal-oriented development dialogues and visionary leadership. | Individual reflection (5 minutes):
Based on your preparation for module 2:
- Which successes did I have in relation to visionary leadership and goal-oriented development dialogues with my employees?
- Which challenges did I have in relation to visionary leadership and goal-oriented development dialogues with my employees?

Participants are paired. The groups are made up of managers from different municipalities.

Exercise: Interview 2 and 2 (20 minutes):
- How can you work to overcome the challenges you have experienced?
- How can you replicate and expand on the successes you have experienced?
- Which actions on your part will have the greatest impact on your employees contributing effectively to achieving your long-term goals – and achieving your organizational vision?

Write key points in your notebook. You will need them for updating your action plan in the afternoon.

Teacher role during exercise: 1) available for questions; 2) circulate among groups to pick up information for the plenary/group learning. |
| 9.55– 10.10 | *Plenary: Highlights from exercise* | Transfer process

Feedback process

Reflection level | Becoming aware of one's own learning.
All plenary sessions support synthesis and meta-learning.

Becoming aware of potentials, difficulties, and possible solutions in relation to goal-oriented development dialogues | Teacher-facilitated plenary learning. Questions/learning points: What did you learn about visionary leadership and goal-oriented development dialogues from the reflections and interviews:
1) Successes and ways to replicate and expand on them?
2) Challenges and ways to overcome them?

Teacher bridges between the specific and the theoretical/overall. |

			and face-to-face transformational leadership.	
10.10–10.20	*Break*			
10.20–10.35	*Lecture: Sustaining the vision: dialogues, control systems, professional norms, and visions*	Input process Knowledge level	Gaining knowledge on how control systems can support or crowd out motivation related to the organizational vision. Gaining knowledge on how leaders can use control systems and professional norms and knowledge among employees to support their visionary leadership.	Slide-supported lecture. The lecture introduces: 1) Using goal-oriented development dialogues to sustain the organizational vision. 2) The relation between control systems and visionary leadership – motivation crowding out/in. 3) The relation between visionary leadership and professional norms and knowledge.
10.35-11.10	*Exercise: Individual reflection 2 & 2 walk and talk*	Transfer process Reflection level and action level	Becoming aware of and reflecting on own and others' experiences with control systems and professional norms and knowledge – and how they relate to visionary leadership. Becoming aware of how control systems and professional norms and knowledge can support or undermine positive effects of visionary leadership. Reflecting on actions to improve alignment between the organizational vision and control systems and professional norms and knowledge.	Consider on your own (8 minutes): 1) How can you increase alignment between the control systems used in your organization and the organizational vision? How can control systems support that your unit contributes to the organizational vision? 2) How can you increase alignment between the organizational vision and the professional norms and knowledge among your employees? How can professional norms and knowledge support that your unit contributes to the organizational vision? Discuss in groups of 2 – walk and talk (20 minutes): • Share your thoughts and discuss the question above. Individual work with action plan (7 minutes): • Based on the above reflections, write ideas for your action plan in your notebook.

11.10–11.25	*Lecture: Visionary leadership and leader credibility*	Input process Knowledge level	Understanding the concept of leader credibility and how leaders' credibility can affect the outcomes of visionary leadership.	Slide-supported lecture. The lecture introduces: 1) The concept of leader credibility. 2) Conditions for leader credibility: institutional factors, previous leader behaviors, individual leader characteristics, and fit with other leader intentions. 3) The relation between visionary leadership and leader credibility – illustrated with two empirical cases. 4) Goal-oriented development dialogues and leader credibility.
11.25–11.50	*Exercise: Individual reflection and discussions in groups*	Transfer process Reflection level and action level	Becoming aware of and reflecting on own and others' experiences with leader credibility – and how this relates to visionary leadership. Becoming aware of how leader credibility can support or undermine positive effects of visionary leadership. Reflecting on actions to improve leader credibility in relation to visionary leadership using goal-oriented development dialogues.	Consider on your own (5 minutes): 1) How do you assess your current level of credibility among employees in relation to your visionary leadership? • The vision itself, the goal-oriented development dialogues, individual and collective action plans, follow-up, evaluation, adaptation, etc.? 2) How can you influence the credibility conditions surrounding your visionary leadership? 3) How can you – in a credible way – show that you are dedicated to the vision – also in the long run? Discuss in groups of 2 (15 minutes): • Share your thoughts and discuss the question above. Individual work with action plan (5 minutes): • Based on the above reflections, write ideas for your action plan in your notebook.
11.50–12.10	*Plenary: Highlights from lectures reflections and discussions*	Transfer process Feedback process	Becoming aware of one's own learning. Becoming aware of potentials, difficulties, and possible	Teacher-facilitated plenary learning. Questions/learning points: examples, insights, and questions. 1) How can you increase credibility regarding your engagement in your vision?

			solutions in relation to sustaining the organizational vision – related to goal-oriented development dialogues and leader credibility.	2) How can you increase credibility regarding the way you conduct visionary leadership? 3) Which role can goal-oriented development dialogues play in order to support leader credibility? Teacher bridges between the specific and the theoretical/overall.
12.10– 12.40	*Lunch*			
12.40– 13.00	*Lecture: Visionary leadership and change management*	Input process Knowledge level	Gaining knowledge on different types of organizational change and how visionary leadership can support successful change processes.	Slide-supported lecture. The lecture introduces: 1) A typology of change: proactive vs. reactive and transformational vs. incremental. 2) Sense-making in organizational change. 3) Two cases of using visionary leadership in change management – reactive change processes (incremental and transformational). 4) Goal-oriented development dialogues and sense-making in organizational change.
13.00– 13.30	*Exercise: Individual reflection and discussions in groups*	Transfer process Reflection level and action level	Becoming aware of and reflecting on own and others' experiences with change management and how it relates to visionary leadership. Becoming aware of how visionary leadership can support successful organizational change. Reflecting on actions to improve change management using the organizational vision as a tool.	Consider on your own (8 minutes): 1) What is the most important change underway in your organization? 2) Based on the presentation on change management, consider: • What can you do to support the change being successful – and that this change contributes to achieving our long-term goals/vision? • To what extent can you use your vision as a tool in this process? –and how? Discuss in groups of 2 (15 minutes): • Share your thoughts and discuss the question above. Individual work with action plan (7 minutes):

				• Based on the above reflections, write ideas for your action plan in your notebook.
13.30–13.45	*Lecture: Visionary leadership as an organizational change process*	Input process Knowledge level	Gaining knowledge on accelerators in change management and how achieving an organizational vision can be understood as a change process.	Slide-supported lecture. The lecture introduces: 1) Eight accelerators in change management (Kotter). 2) How these eight accelerators can be used as tools in visionary leadership. 3) The role of goal-oriented development dialogues in change management.
13.45–14.00	*Exercise: Walk and talk 2 & 2*	Transfer process Reflection level and knowledge level	Becoming aware of one's own learning.	Discussion 2 & 2: walk and talk. Based on the points about change management: 1) What have I done to put our vision into action in my unit? • What has worked well and why? 2) What can I do to anchor our vision in culture and habits in my unit? • Which experiences from the past can I bring into play? Write key points in your notebook. You will need them for updating your action plan in the afternoon.
14.00–14.40	*Exercise: Individual work: updating action plan* *Groups: Presenting and giving feedback on action plans*	Transfer process Reflection level and action level	Based on the knowledge gained, becoming aware of/reflecting upon how to turn one's own goals into actions. Based on that awareness, making an action plan for what to do and work with specifically in relation to visionary leadership and goal-oriented development dialogues.	Template based: Look at your notes from today's lectures, individual reflections, and group discussion. Consider whether there is a need for changes in your development goals and/or action plan in relation to: 1) The process of goal-oriented development dialogues. 2) Other aspects of your vision management. Based on insights from today's lectures, individual reflections, and group discussion, consider: • Challenges and successes in your use of goal-oriented development dialogues and visionary leadership so far.

				• Professionalism as a tool in visionary leadership.
				• Control systems as a tool or barrier in visionary leadership.
				• Leader credibility.
				• Change management – and the eight accelerators.
				
				In groups of 2:
				1) 5-minute presentation:
				   • Brief introduction to your development goal
				   • Which focus would you like in the feedback on your action plan?
				   • Present your action plan (how will you strengthen your visionary leadership?)
				
				2) 5-minute presentation:
				   • Which qualities do you want to highlight about the action plan based on today's lectures and discussions?
				   • Do you have suggestions on how to strengthen the action plan?
				   • Do you have suggestions on how to strengthen the follow-up on the action plan?
				
				3) Second participant presents and the other participant provides feedback.
				
				Teacher role during exercise: available for questions and reflections.

14.40–15.00	*Closing*	Input Feed forward Knowledge level, reflection	Awareness and overview of what has happened and why, what main learning points to take home, how to apply learning, and what tasks to perform until next course day.	The teacher sums up key takeaways from lectures and discussion and clarifies in relation to learning outcomes. The teacher provides an overview of tasks that the participating managers must perform during the next 6 months (until the end of the project period, and hopefully further on):

		level, and action level	Supporting implementational mindset.	- Working with their action plan, with a focus on goal-oriented development dialogues - Conducting goal-oriented development dialogues and follow-ups with each of their employees Both aspects are supported by the software solutions provided.
15.00–16.00	*"Question hour"*	Transfer process Knowledge level, reflection level, and action level	Increasing understanding of the learning points of the day.	The teacher is available for questions and dialogue about the themes of the day: - Knowledge level: understanding the concepts and theory behind - Reflection level: applying the knowledge to the role as leader in the participants' own organizations - Action level: questions and supervision on action planning and questions on the use of the leadership tool

Table 1.7: In-between activities between module 2 and end of project

In-between activities (between module 2 and end of project – 8 months)			
Activity	*Learning level and process*	*Learning outcomes*	*In practice*
Goal-oriented development dialogues with employees: goal-oriented development dialogues	Transfer process Action level	Gaining experience and skills regarding face-to-face transformational leadership: goal-oriented development dialogues. Enhancing the ability to share and sustain the vision and to translate the vision into action via goal-oriented development dialogues.	The participating public managers are instructed to conduct quarterly follow-up dialogues with their employees. The preparation for these dialogues was expected to have a duration of 10 minutes for each employee and 5 minutes for the leader. The duration of the dialogue was expected to vary a lot: between 10 and 30 minutes depending on how well on track the employee is regarding their development goal and action plan. The managers were also instructed that they could choose to conduct the follow-up dialogue as a group process, which was also supported by the software solutions. The preparation is the same, and the group dialogue was expected to have a duration of 1–1½ hours, including individual work on adjusting development goals and action plans.

			The managers are also instructed to repeat the goal-oriented development dialogue with each of their employees one year after the first goal-oriented development dialogue (i.e., between October 2021 and February 2022). The managers received two reminders on this task. The reminders also pushed focus on the task on individual action plans (see below). The provided leadership tools (software solutions providing implementation nudging) also supported the task of conducting goal-oriented development dialogues.

Individual action plan/home assignment	Transfer process
	
	Reflection level and action level
		Connecting learning from course day 1 and transferring learning into a detailed, overall action plan.
		
		Reflecting upon one's own learning and transfer.
			The participants combine notes, exercises, and learnings from module 2 and continue their work on their individual action plans.
			Process:
			1) The participants are encouraged to spend 30 minutes every 14 days to reflect on their development goal and their work with the action plan:
			   o To what extent are you following your action plan – why/why not?
			   o Are there already signs that the action plan brings you closer to your goal? What signs/why not?
			   o Are there elements of the action plan that need more focus?
			   o Are there elements of the action plan that need to be adjusted to better achieve the development goal?
			4) The action plans form the basis for the voluntary network meeting.

Voluntary network meeting	Feedback process Transfer process Reflection level and action level	The focal point of the networks will be the individual action plans. The networks will support the feedback learning processes (from awareness to increased knowledge). The networks will also support the translation/transfer process (by participants gaining knowledge of peers' problems/challenges/ways of	The networks will work in a *structured* way to give peer feedback and create vicarious learning. The networks will be facilitated by team exercises and material. Each network will consist of five members from different municipalities but within geographical proximity.

		doing things/experiences). Participants will, thereby, increase both their awareness of other ways/their own way and their potential actions/skills and integrate this in their action plans.	

1.5.2 The Leadership Tools – Static and Dynamic Software Solutions

The static and the dynamic leadership tools aim to help the public managers structure and carry out high-quality dialogues with their employees about the organizational vision (within the concept of goal-oriented development dialogues). These dialogues are expected to help the managers share the vision with the employees and to sustain the vision as a clear and attractive idealized portrait of what the organization aspires to achieve. Previous research suggests that face-to-face communication is crucial to the success of translating and maintaining organizational visions (Jensen et al., 2018), and the aim of the tools is indeed to support the managers in the face-to-face communication about the vision. The design of the tools draws on insights from the literature on transformational leadership, behavioral science, and the literature on goal-based coaching.

The content of the tools is simplified information on the leadership training target behavior, dialogue guides, software provided reminders, and templates for preparation, minutes, and follow-up processes. The content of the static and the dynamic leadership tool is identical, but the dynamic tool is set up in a cloud-based software, whereas the static tool is provided in writable PDFs that are used in combination with the manager's own e-mail and calendar software. The differences between the two software solutions are the following:

1. **The initial access to the content of the tool.** Participating managers in treatment group 1 will receive *the static leadership tool* as a part of module 1. They receive a hard copy version in a binder, and the same day, they receive an e-mail with the tool as a writable PDF on their computer, smart phone, or tablet. The managers in this group are advised to send this writable PDF to their employees a week before the goal-oriented development dialogue. The PDF instructs the employees to prepare the dialogue by answering several questions. Participating managers in treatment group 2 also receive a hard copy version of the tool as a part of module 1, and the day before module 1, they receive an e-mail that guides their access to the dynamic leadership tool. Managers in group 2 and their employees had online access to the dynamic software solution on their computer, smart phone, and tablet. They accessed the leadership tool using a fixed username and a password of their own choice. The dynamic software solution interactively guides the dialogue process by providing templates and reminders to managers as well as employees.

2. **The preparation processes.** Both tools set the stage for employees to prepare the goal-oriented development dialogue with their leader by answering several questions related to the organizational vision, their job tasks, their competences, and their work motivation. In both tools, the employees are asked to share this preparation with their leader. *In the static tool,* the employee writes the preparation in the writable PDF and saves the document in a shared folder or sends the document by e-mail. *In the dynamic tool*, the employee writes the preparation in the cloud-based system and shares the preparation with the leader online within this software solution. In both tools, the leader is encouraged to prepare the goal-oriented development dialogue based on the employee's response.

3. **The goal-oriented development dialogue.** Both tools contain a dialogue guide with questions and guidelines on how to conduct the goal-oriented development dialogue. The leader and employee are guided to translate the vision to the employee's specific situation and task composition, as well as to agree on specific goals, actions, success criteria, and follow-ups. *In the static tool,* the leader and the employee write the minutes, agreements,

etc., in the PDF templates that are part of the tool. The content of templates is identical to the templates in the dynamic tool. *In the dynamic tool,* minutes and agreements are written in the online software, and both the employee and the leader will instantly have access to minutes and agreements. In both tools, the leader and employee must set a date for follow-up when they enter an agreement, and *in the dynamic tool,* it is not possible to enter an agreement without setting a date for follow-up.

4. **Overview of goals, tasks, and follow-up processes.** *The dynamic tool* automatically provides an overview of all goals and tasks the leader has agreed on with the employees. The overview shows deadlines and allows the possibility to add status notes and minutes from follow-up dialogues about each goal and task. Employees have access to an overview of goals and tasks that concern themselves. Furthermore, the leaders and the employees are reminded via e-mail when a task is not marked as completed by the specified deadline. Finally, the dynamic tool allows communication related to the development process through an integrated chat-function. *The static tool* does not contain any of these functions to support overview and follow-up, and the leaders are advised to use available software (e-mail and calendar software, OneNote, Excel, etc.) to create an overview and ensure follow-up.

The content of the leadership tools is presented in the appendix, and short video presentation of the dynamic tool can be found along with this technical report on the following webpage: https://ps.au.dk/cpl/baggrundsmateriale-fra-levo-projektet

2 Survey Setup, Collection Methods, and Response Rates

Data on leadership behavior and employee job attitudes are collected in pre- and post-intervention surveys among participating public managers and their employees.

The first step in the survey-based data collection was a pilot survey conducted in one of the municipalities that decided not to take part in the research project. Questions and survey setup were adjusted based on the results of the pilot survey that included interviews with employees and public managers.

All public managers and employees, regardless of experimental group, received identical pre- and post-intervention surveys measuring perceived transformational leadership behaviors. At the time of the pre-training survey (September 2020), the public managers were not yet informed of their group assignment. The surveys were distributed electronically along with three reminders. To further boost response rates, public managers were asked to encourage their employees to respond to the requests for surveys. Questionnaires for the employees additionally included questions covering basic needs satisfaction, person–organization fit, vision valence, and work engagement. Response rates are shown in Table 2.1.

Table 2.1: Response rates from pre- and post-intervention surveys

	Public Managers			Employees		
Time	Unique individuals	Responses, first section in the questionnaire	Responses, full questionnaire	Unique individuals	Responses, first section in the questionnaire	Responses, full questionnaire
Pre-survey, September 2020	226 (100 %)	205 (91 %)	200 (88 %)	4.442 (100 %)	3.392 (76 %)	2.759 (62 %)
Post-survey, January 2022	187 (100 %)	151 (81 %)	129 (69 %)	3.535 (100 %)	2.738 (77 %)	1.475 (42 %)
Panel	187 (100 %)	133 (71 %)	120 (64 %)	3.535 (100 %)	1.695 (48 %)	1.041 (29 %)

3 Overview of the Measured Concepts

This section presents an overview of concepts measured in the pre- and post-surveys.

Table 3.1: List of concepts covered in the surveys

Dimension	# items	Leader pre	Leader post	Employee pre	Employee post
Leadership					
Transformational Leadership	4	X	X	X	X
Transformational leadership, contribution	4	X	X	X	X
Transformational leadership, communication frequency	3	X	X	X	X
Transformational leadership, contexts for vision communication	10	X	X	X	X
Transactional leadership, contingent non-pecuniary rewards	3	X	X	X	X
Transactional leadership, contingent pecuniary rewards	3	X	X	X	X
Transactional leadership, contingent sanctions	3	X	X	X	X
Professional development leadership – overall	12	X	X	X	X
Professional development leadership – align	4	X	X	X	X
Professional development leadership – develop	4	X	X	X	X
Professional development leadership – activate	4	X	X	X	X
Leadership identity	1	X	X		

Leadership approach priority	3	X	X		
Use of goal-oriented development dialogues	7		X		X
Use of goal-oriented development dialogues, use according to target behavior	12		X		X
Leadership autonomy	4	X	X		
Motivation					
Prosocial impact of the job	2			X	X
Vision valence	3			X	X
Value congruence/person –organization fit	4			X	X
Work engagement – overall	9			X	X
Work engagement – vigor	3			X	X
Work engagement – dedication	3			X	X
Work engagement – absorption	3			X	X
Satisfaction of the need for autonomy	3			X	X
Satisfaction of the need for competence	3			X	X
Satisfaction of the need for relatedness to users	3			X	X
Satisfaction of the need for meaning	3			X	X
Other measures					
Evaluation of the development intervention	5		X		
Degree of voluntary participation	1	X	X		

Factual measures					
Types of tasks (unit level)	1	X	X		
Types of tasks (individual level)	1			X	X
Target groups	1	X	X		
Span of control	1	X	X		
Seniority in current workplace	1	X	X	X	X
Years with current leader	1			X	X
Years in current leader position	1	X	X		
Part time employment	2			X	X
Seniority as a leader	1	X	X		
Age	1	X	X	X	X
Gender	1	X	X	X	X
Education	1	X	X	X	X
Leadership training	3	X	X		

4 Theoretical Definitions, Factor Loadings, and Distributions

This section introduces the theoretical definition of each measured concept. We present how each item in a given concept loads in a factor analysis and the distribution of an additive index measuring each concept. All concepts, both validated and non-validated, are analyzed using principal component analysis. Non-validated concepts are subject to preliminary analyses of the inter-item correlations and sampling adequacy. This is to test whether the variables have sufficient common variance for the data to be suitable for factor analysis (Dziuban & Shirkey, 1974). The distributions for all concepts are presented as additive indexes to support easy interpretation. For frequency tables for Likert-scaled items that are not part of an index, the answers are assigned the following values to calculate the mean: strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, and strongly agree = 5. For some single item questions, we also show histograms.

We use index constructions for three reasons: 1) It increases the validity and reliability of the measurements, 2) it increases the level of measurement, and 3) it simplifies data. The concepts are presented in the same order as in Table 3.1.

In the sections below, specific criteria for evaluation are used. For explorative factor analyses, inter-item correlations above 0.3 are regarded as satisfactory (Robinson et al., 1991: 13), while the factor loadings must be above 0.4 to be satisfactory (Pituch & Stevens, 2015: 349). Loadings above 0.6 are regarded as high in the explorative analyses. For factor analyses on validated concepts, factor loadings should be at least 0.6 but ideally 0.7. The internal reliability of the scales is regarded as satisfactory when Cronbach's alpha is 0.7 or above (Cortina, 1993). In explorative factor analysis, the Bartlett's test should be significant (Williams et al., 2010) and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) should be above 0.6 (Tabachnick et al., 2014: 668).

In our construction of the additive indexes that follow the factor analyses for each concept, missing data are replaced when a respondent had missing values on one or more items covering a concept to minimize loss of respondents. When data for some items are missing, the indexes are calculated based on each respondent's mean of their answered questions. However, in order to be a part of the indexes, a respondent must have answered at least two thirds of the items for a given concept. For the factor analyses, missing values are not replaced or imputed.

4.1 Transformational Leadership

In this project, transformational leadership comprises behaviors that intend to (1) develop an organizational vision, (2) share the vision with employees, and (3) sustain employees' attention to the vision in the short and the long run (Jensen et al., 2019a). This leadership behavior is enacted with the intention of activating a higher order needs of employees and to motivate employees to transcend self-interest for the sake of the organization. Thus, we define transformational leadership as "behaviors that seek to develop, share, and sustain a vision" (Jensen et al., 2019a: 10).

The survey items are all based on previous studies as indicated in Table 4.1 (Podsakoff et al., 1996; MacKenzie et al., 2001; Moynihan et al., 2012; Jensen et al., 2019a). The survey measures are distributed to public managers as well as their employees.

The following paragraphs were used to introduce the questions about transformational leadership:

- For public managers, the first questions are about your focus on clarifying the unit's direction and future for the employees. Some leaders prioritize using visions, while other

leaders give higher priority to other leadership duties. We would like to know to which degree you as a leader do the former.

- For employees, the first questions are about your leader's focus on clarifying the unit's direction and future for the employees. Some leaders prioritize using visions, while other leaders give higher priority to other leadership duties. We would like to know to which degree your leader does the former.

Table 4.1: Items measuring transformational leadership

	Leaders: As a leader I… / *Som leder…*	Source
visionsledelse1_1	…concretize a clear vision for the organizational unit's future. *…konkretiserer jeg en klar vision for enhedens fremtid.*	Modified and tested by Jensen et al., 2019a based on Moynihan et al., 2012
visionsledelse1_2	…make a continuous effort to generate enthusiasm for the unit's vision. *…gør jeg en løbende indsats for at skabe entusiasme for enhedens vision.*	Modified and tested by Jensen et al., 2019a based on Podsakoff et al., 1996
visionsledelse1_3	…seek to make employees accept common goals for the unit. *…forsøger jeg at få medarbejderne til at acceptere fælles mål for enheden.*	Modified and tested by Jensen et al., 2019a based on MacKenzie et al., 2001
visionsledelse1_4	…strive to get the unit to work together in the direction of the vision. *…gør jeg en løbende indsats for at få enhedens medarbejdere til at arbejde sammen i retning af visionen.*	Modified and tested by Jensen et al., 2019a based on Podsakoff et al., 1996
	Employees: My leader… / *Min leder…*	Source
visionsledelse1_1	…concretizes a clear vision for the unit's future. *…konkretiserer en klar vision for enhedens fremtid.*	Modified and tested by Jensen et al., 2019a based on Moynihan et al., 2012
visionsledelse1_2	…makes a continuous effort to generate enthusiasm for the unit's vision. *…gør en løbende indsats for at skabe entusiasme for enhedens vision.*	Modified and tested by Jensen et al., 2019a based on Podsakoff et al., 1996
visionsledelse1_3	…seeks to make employees accept common goals for the unit.	Modified and tested by Jensen et al., 2019a based on

	...forsøger at få medarbejderne til at acceptere fælles mål for enheden.	MacKenzie et al., 2001
visionsledelse1_4	...strives to get the unit's employees to work together in the direction of the vision. ...gør en løbende indsats for at få enhedens medarbejdere til at arbejde sammen i retning af visionen.	Modified and tested by Jensen et al., 2019a based on Podsakoff et al., 1996

Note: The replies from both public managers and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.2: Factor analysis: transformational leadership reported by public managers in the pre-survey

Survey prompt: As a leader I…	Loadings
…concretize a clear vision for the organizational unit's future.	.708
…make a continuous effort to generate enthusiasm for the unit's vision.	.823
…seek to make employees accept common goals for the unit.	.818
…strive to get the unit to work together in the direction of the vision.	.792

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 205. Cronbach's alpha = .791.

Table 4.3: Factor analysis: transformational leadership reported by leaders in the post-survey

Survey prompt: As a leader I…	Loadings
…concretize a clear vision for the unit's future.	.712
…seek to make employees accept common goals for the unit.	.817
…strive to get the unit's employees to work together in the direction of the vision.	.847
…strive to clarify for the employees how they can contribute to achieving the unit's goals.	.840

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 151. Cronbach's alpha = .815.

Table 4.4: Factor analysis: transformational leadership reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…concretizes a clear vision for the unit's future.	.891
…makes a continuous effort to generate enthusiasm for the unit's vision.	.919
…seeks to make employees accept common goals for the unit.	.900
…strives to get the unit's employees to work together in the direction of the vision.	.923

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3379. Cronbach's alpha = .929.

Table 4.5: Factor analysis: transformational leadership reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…concretizes a clear vision for the unit's future.	.891
…seeks to make employees accept common goals for the unit.	.923
…strives to get the unit's employees to work together in the direction of the vision.	.912
…strives to clarify for the employees how they can contribute to achieving the unit's goals.	.928

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2728. Cronbach's alpha = .933.

Across public managers and employees and across both survey waves, all factor loadings reach a minimum of 0.7. This indicates that all four items reflect the underlying factor sufficiently well. The higher loadings for employee responses compared to public managers' responses may be partly due to the smaller sample size for managers. The values for Cronbach's Alpha show good internal reliability.

*Figure 4.1: Distribution of transformational leadership as reported by public managers in the pre-survey*
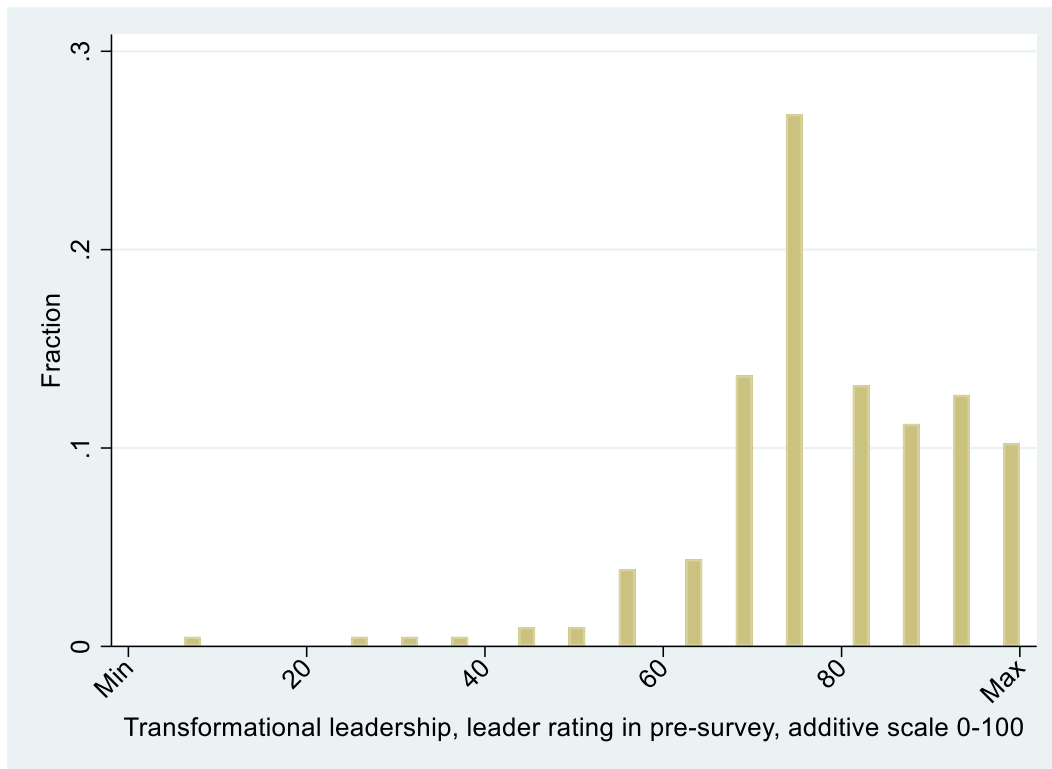
Note: N = 205. Mean = 78.51, std. dev. = 14.60, min. = 6.25, max. = 100, skewness = -1.06, kurtosis = 6.10. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.2: Distribution of transformational leadership as reported by public managers in the post-survey
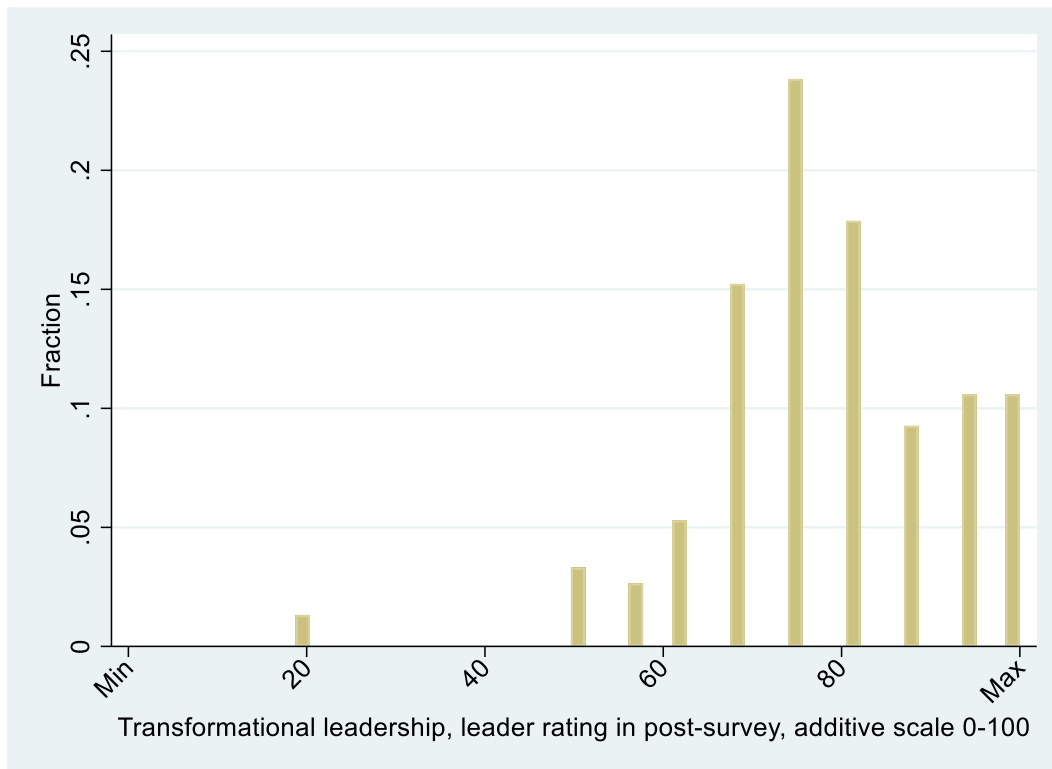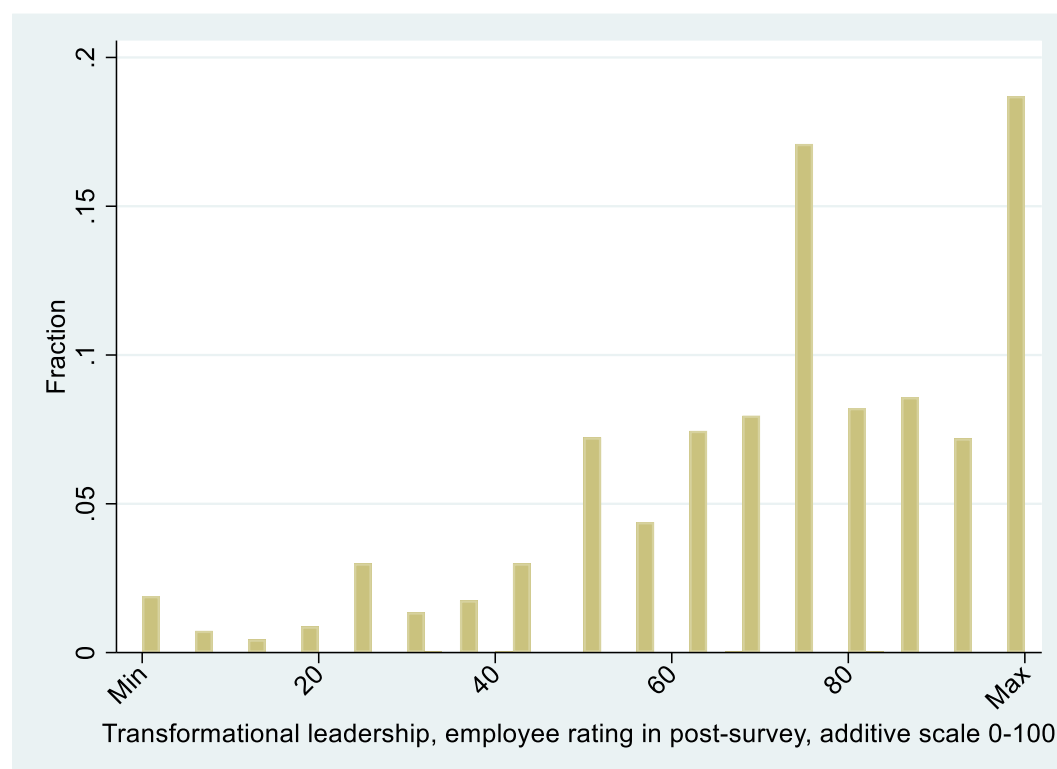

Note: N = 151. Mean = 78.23, std. dev. = 14.21, min. = 18.75, max. = 100, skewness = -.91, kurtosis = 5.67. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.3: Distribution of transformational leadership as reported by employees in the pre-survey

Transformational leadership, employee rating in pre-survey, additive scale 0-100
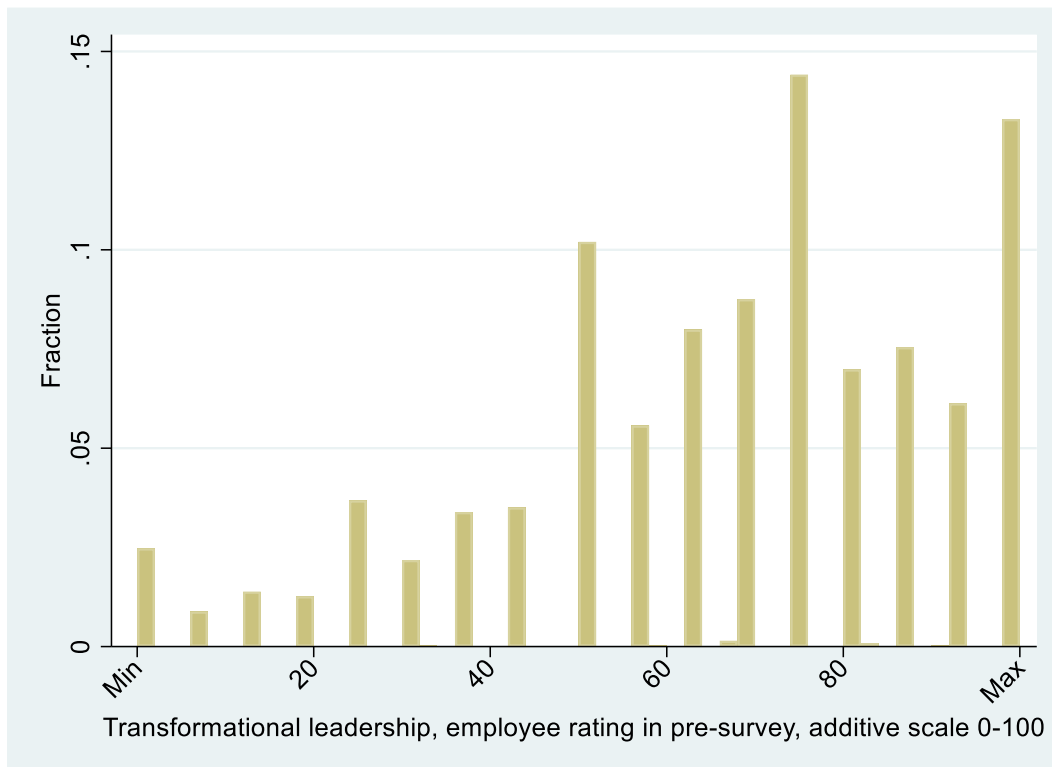
Note: N = 3392. Mean = 66.49, std. dev. = 25.26, min. = 0, max. = 100, skewness = -.67, kurtosis = 2.92. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Note: N = 2738. Mean = 72.15, std. dev. = 23.84, min. = 0, max. = 100, skewness = -.95, kurtosis = 3.61. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

All the above distributions of transformational leadership are left-skewed to some degree. This indicates that both public managers and employees in general feel that the managers enact transformational leadership behavior to a large degree. However, the mean is higher for public managers than for employees in both survey waves. This suggests that employees perceive their managers to enact verbal transactional leadership to a lower degree than the public managers themselves. The larger standard deviation for employees reflects that employee replies are fairly dispersed across the full scale, whereas public managers' replies are primarily concentrated in the top half of the scale.

4.1.1 Contribution to the organizational vision

Table 4.6: Items measuring transformational leadership, contribution to the organizational vision

	Leaders: As a leader I… **/** *Som leder...*	Source
Visionsledelse2_1	…strive to clarify for the employees how they can contribute to achieving the unit's goals. *…bestræber jeg mig på at gøre det klart for medarbejderne, hvordan de kan bidrage til at opnå enhedens mål.*	Jensen et al., 2019a

Visionsledelse2_2	…put a very large effort into making the vision present for the employees in their daily work. …*gør jeg en meget stor indsats for at gøre visionen nærværende for medarbejderne i det daglige arbejde.*	Own
Visionsledelse2_3	…make concrete agreements with each employee about how they can increase their contribution to realizing the vision. …*indgår jeg konkrete aftaler med hver enkelt medarbejder om, hvordan de kan øge deres bidrag til, at visionen bliver til virkelighed.*	Own
Visionsledelse2_4	…consistently follow up on each employee's contribution to the vision. …*følger jeg konsekvent op på, hvordan hver enkelt medarbejder bidrager til visionen.*	Own
	Employees: My leader… **/** *Min leder…*	Source
Visionsledelse2_1	…strives to clarify for the employees how they can contribute to achieving the unit's goals. …*bestræber sig på at gøre det klart for medarbejderne, hvordan de kan bidrage til at opnå enhedens mål.*	Jensen et al., 2019a
Visionsledelse2_2	…puts a very large effort into making the vision present for the employees in their daily work. …*gør en meget stor indsats for at gøre visionen nærværende for medarbejderne i det daglige arbejde.*	Own
Visionsledelse2_3	…makes concrete agreements with me about how I can increase my contribution to realizing the vision. …*indgår konkrete aftaler med mig om, hvordan jeg kan øge mit bidrag til, at visionen bliver til virkelighed.*	Own
Visionsledelse2_4	…consistently follows up on how I contribute to the vision. …*følger konsekvent op på, hvordan jeg bidrager til visionen.*	Own

Note: The replies from both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

*Table 4.7: Correlation matrix, transformational leadership (contribution), and public managers'
replies in pre-survey*

	Visionsledelse2_1	Visionsledelse2_3	Visionsledelse2_4
Visionsledelse2_1	1		
Visionsledelse2_3	0.41	1	
Visionsledelse2_4	0.40	0.74	1

Note: Table entries are Pearson's correlation coefficients. N = 204.

*Table 4.8: Correlation matrix, transformational leadership (contribution to the organizational vision),
and public managers' replies in post-survey*

	Visionsledelse2_1	Visionsledelse2_3	Visionsledelse2_4
Visionsledelse2_1	1		
Visionsledelse2_3	0.40	1	
Visionsledelse2_4	0.43	0.73	1

Note: Table entries are Pearson's correlation coefficients. N = 150.

*Table 4.9: Correlation matrix, transformational leadership (contribution), and employee replies in
pre-survey*

	Visionsledelse2_1	Visionsledelse2_3	Visionsledelse2_4
Visionsledelse2_1	1		
Visionsledelse2_3	0.67	1	
Visionsledelse2_4	0.64	0.81	1

Note: Table entries are Pearson's correlation coefficients. N = 3371.

*Table 4.10: Correlation matrix, transformational leadership (contribution), and employee replies in
post-survey*

	Visionsledelse2_1	Visionsledelse2_3	Visionsledelse2_4
Visionsledelse2_1	1		
Visionsledelse2_3	0.67	1	
Visionsledelse2_4	0.65	0.82	1

Note: Table entries are Pearson's correlation coefficients. N = 2719.

Table 4.11: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	Degrees of freedom	p-value
Leaders	Pre-survey	0.621	202.13	3	0.000
	Post-survey	0.627	143.67	3	0.000
Employees	Pre-survey	0.710	5821.54	3	0.000
	Post-survey	0.715	4804.58	3	0.000

All inter-item correlations are above r = 0.6 for employees, while correlations for public manager responses are somewhat weaker, the lowest being r = 0.4. Part of the reason may be that the number of managers is considerably smaller than the number of employees, making inter-item correlations for leader responses more vulnerable to random variation in the sample. However, the KMO value is above 0.6 and thereby satisfactory for both leader and employee responses across both survey waves. Furthermore, the p-values in all four Bartlett's tests are significant, indicating a low probability that the parameters are, in fact, uncorrelated in the population.

Table 4.12: Exploratory factor analysis: transformational leadership (contribution) reported by public managers in the pre-survey

Survey prompt: As a leader I…	Loadings
…strive to clarify for the employees how they can contribute to achieving the unit's goals.	.685
…make concrete agreements with each employee about how they can increase their contribution to realizing the vision.	.892
…consistently follow up on each employee's contribution to the vision.	.888

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 204. Cronbach's alpha = .767.

Table 4.13: Exploratory factor analysis: transformational leadership (contribution) reported by public managers in the post-survey

Survey prompt: As a leader I…	Loadings
…strive to clarify for the employees how they can contribute to achieving the unit's goals.	.696
…make concrete agreements with each employee about how they can increase their contribution to realizing the vision.	.879
…consistently follow up on each employee's contribution to the vision.	.892

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 150. Cronbach's alpha = .767.

Table 4.14: Exploratory factor analysis: transformational leadership (contribution) reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…strives to clarify for the employees how they can contribute to achieving the unit's goals.	.850
…puts a very large effort into making the vision present for the employees in their daily work.	.927
…makes concrete agreements with me about how I can increase my contribution to realizing the vision.	.916

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3371. Cronbach's alpha = .879.

Table 4.15: Exploratory factor analysis: transformational leadership (contribution) reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…strives to clarify for the employees how they can contribute to achieving the unit's goals.	.855
…puts a very large effort into making the vision present for the employees in their daily work.	.927
…makes concrete agreements with me about how I can increase my contribution to realizing the vision.	.918

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2719. Cronbach's alpha = .883.

All factor loadings are higher than .6. This means that each item is sufficiently correlated with the estimated factor. However, the loadings for the leaders' responses are slightly lower than for the employees', especially for the first item. The alpha values show good internal reliability, especially for the employees. All three items are, therefore, used to construct a reflective index. Distributions for this index are shown below.

Figure 4.5: Distribution of transformational leadership (contribution) as reported by public managers in the pre-survey
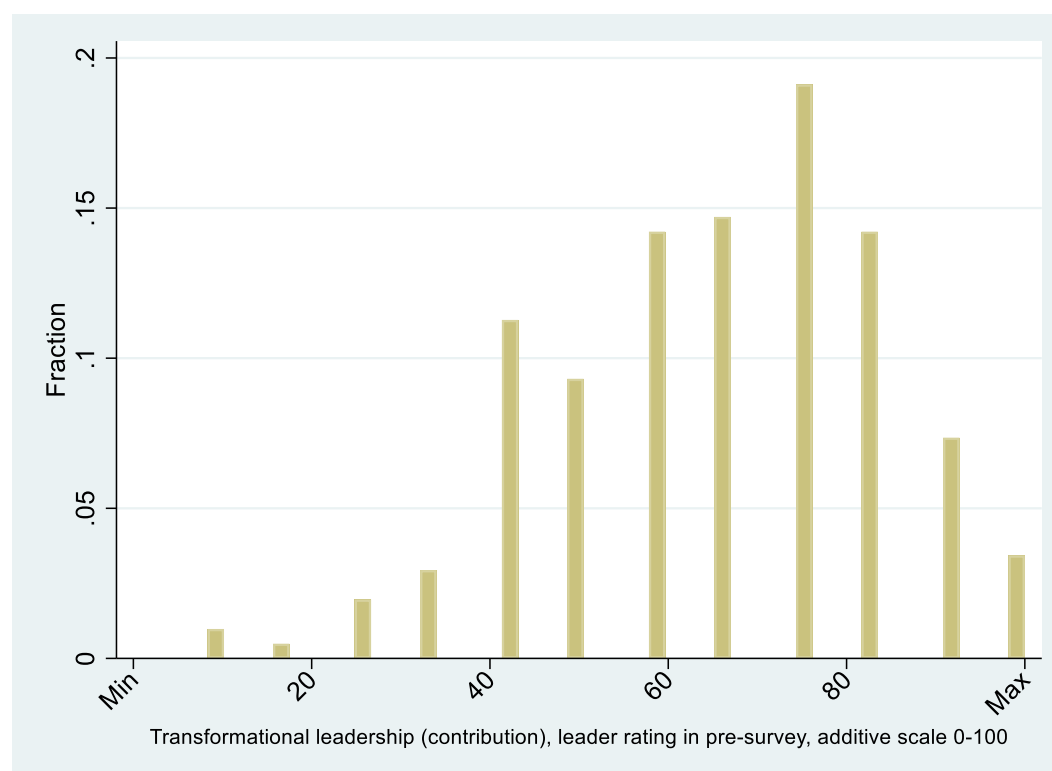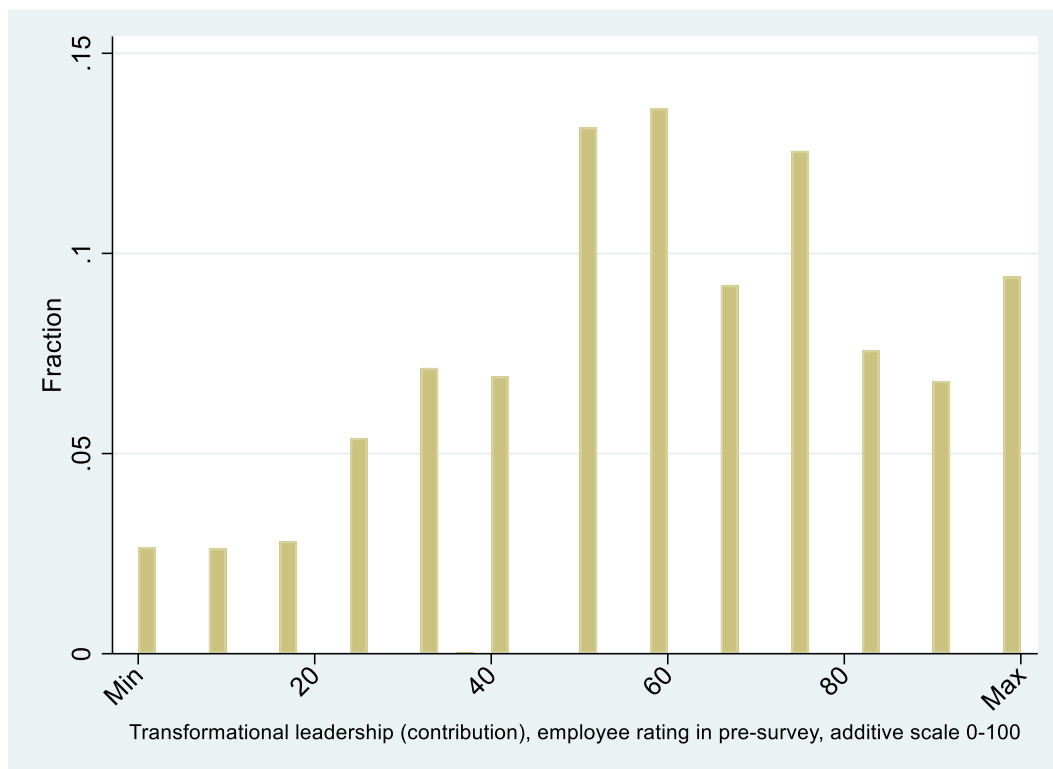

Note: N = 204. Mean = 65.44, std. dev. = 18.86, min. = 8.33, max. = 100, skewness = -.43, kurtosis = 2.85. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.6: Distribution of transformational leadership (contribution) as reported by public managers in the post-survey
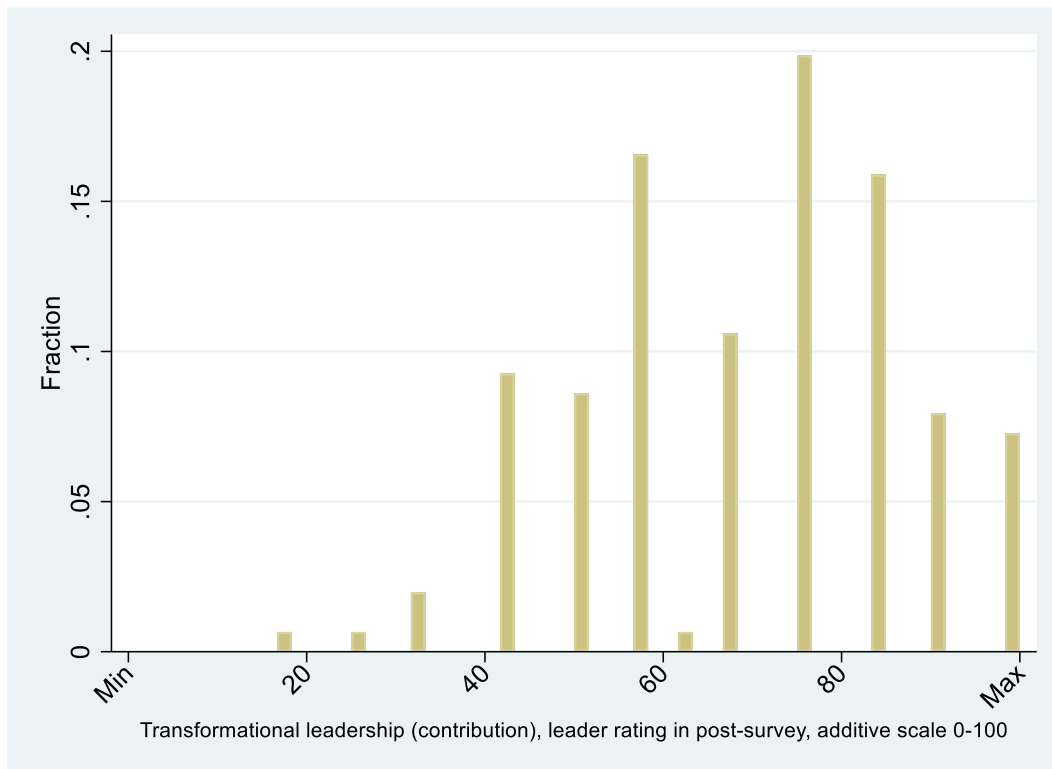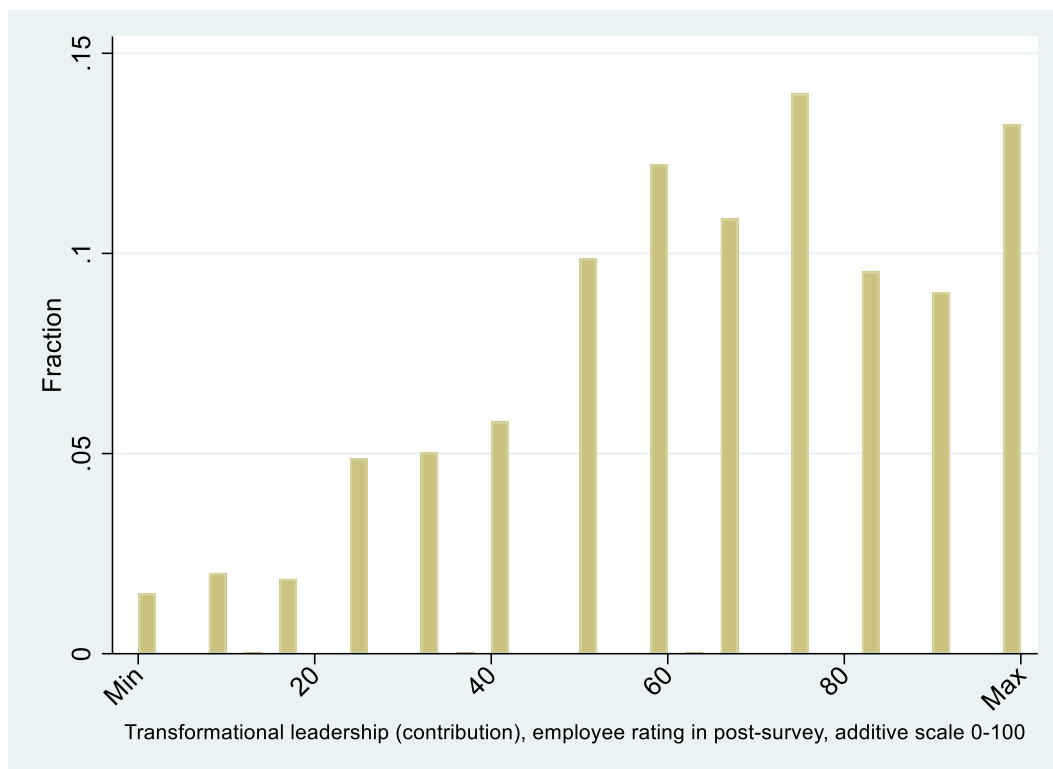

Note: N = 151. Mean = 68.96, std. dev. = 18.14, min. = 16.67, max. = 100, skewness = -.25, kurtosis = 2.50. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.7: Distribution of transformational leadership (contribution) as reported by employees in the pre-survey

Note: N = 3375. Mean = 59.40, std. dev. = 25.80, min. = 0, max. = 100, skewness = -.30, kurtosis = 2.45. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.8: Distribution of transformational leadership (contribution) as reported by employees in the post-survey

Note: N = 2723. Mean = 65.11, std. dev. = 25.18, min. = 0, max. = 100, skewness = -.50, kurtosis = 2.59. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Generally, the distributions are slightly left-skewed with a mean above the midpoint of the scale. This implies that public managers are generally viewed as putting effort into making sure that the employees contribute to the realization of the unit's vision. However, the public managers generally place themselves higher on the scale than the employees place them, as indicated by the higher mean scores. For the employees' responses, the mean is higher and the distribution more left-skewed in the post-survey than in the pre-survey.

Table 4.16: Response distribution for item visionsledelse2_2

As a leader, I put a very large effort into making the vision present for the employees in their daily work (**leader replies**)	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 203)	0.49% (1)	10.84% (22)	30.05% (61)	40.39% (82)	18.23% (37)	3.65	.92
Post-survey (N = 151)	0.66% (1)	8.61% (13)	27.15% (41)	44.37% (67)	19.21% (29)	3.73	.89
My leader puts a very large effort into making the vision present for the employees in their daily work (**employee replies**)	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3377)	7.40% (250)	14.27% (482)	32.72% (1105)	27.66% (934)	17.94% (606)	3.34	1.15
Post-survey (N = 2723)	4.59% (125)	12.89% (384)	26.33% (717)	32.50% (885)	23.69% (645)	3.58	1.12

Table 4.16 shows to what degree the employees agree or disagree with the second measure of transformational leadership (contribution), which is not part of the index. The distribution for the item reflects the same pattern as the index, where leaders generally place themselves higher on the scale than the employees do.

4.1.2 Communication Frequency

Table 4.17: Items measuring transformational leadership and communication frequency

	Leaders: As a leader I… / *Som leder...*	Source
Vision_komm_1	…communicate why the unit's vision is important. *…kommunikerer jeg om, hvorfor enhedens vision er vigtig.*	Own
Vision_komm_2	…have dialogues with each employee about how they contribute to realizing the vision. *…har jeg dialog med hver enkelt medarbejder om, hvordan de bidrager til realiseringen af visionen.*	Own
Vision_komm_3	…spend time concretizing the vision with regard to the daily work together with my employees in group dialogues during staff meetings or the like. *…bruger jeg tid på at konkretisere visionen i forhold til det daglige arbejde sammen med mine medarbejdere i gruppedialoger på personalemøder eller lignende.*	Own
	Employees: My leader… / *Min leder...*	Source
Vision_komm_1	…communicates why the unit's vision is important. *…kommunikerer om, hvorfor enhedens vision er vigtig.*	Own
Vision_komm_2	…has a dialogue with me about how I contribute to realizing the vision. *…har en dialog med mig om, hvordan jeg bidrager til realiseringen af visionen.*	Own
Vision_komm_3	…spends time concretizing the vision with regard to the daily work in group dialogues during staff meetings or the like. *…bruger tid på at konkretisere visionen i forhold til det daglige arbejde i gruppedialoger på personalemøder eller lignende.*	Own

Table 4.18: Response distribution for item vision_komm_1

As a leader, I communicate why the unit's vision is important (**leader replies**).	Never	Less than once a year	1–2 times a year	3–6 times a year	7–12 times a year	13–24 times a year	More than 24 times a year
Pre-survey (N = 206)	0.49% (1)	4.37% (9)	20.39% (42)	28.16% (58)	20.39% (42)	15.05% (31)	11.17% (23)
Post-survey (N = 151)	0.00% (0)	1.99% (3)	15.89% (24)	37.09% (56)	27.15% (41)	10.60% (16)	7.28% (11)
My leader communicates why the unit's vision is important (**employee replies**).	Never	Less than once a year	1–2 times a year	3–6 times a year	7–12 times a year	13–24 times a year	More than 24 times a year
Pre-survey (N = 3280)	7.47% (245)	9.89% (324)	22.04% (723)	23.48% (770)	16.34% (536)	11.46% (376)	9.33% (306)
Post-survey (N = 2673)	2.54% (68)	7.63% (204)	22.75% (608)	25.03% (669)	19.53% (522)	12.76% (341)	9.76% (261)

Table 4.19: Response distribution for item vision_komm_2

As a leader, I have dialogues with each employee about how they contribute to realizing the vision (**leader replies**).	Never	Less than once a year	1–2 times a year	3–6 times a year	7–12 times a year	13–24 times a year	More than 24 times a year
Pre-survey (N = 206)	3.88% (8)	4.85% (10)	43.69% (90)	24.76% (51)	13.59% (28)	6.31% (13)	2.91% (6)
Post-survey (N = 151)	0.00% (0)	7.95% (12)	45.70% (69)	29.80% (45)	12.58% (19)	2.95% (4)	1.32% (2)
My leader has a dialogue with me about how I contribute to realizing the vision (**employee replies**).	Never	Less than once a year	1–2 times a year	3–6 times a year	7–12 times a year	13–24 times a year	More than 24 times a year
Pre-survey (N = 3282)	11.46% (376)	15.94% (523)	27.94% (917)	18.53% (608)	12.95% (425)	7.50% (246)	5.70% (187)
Post-survey (N = 2677)	6.69% (179)	12.74% (341)	30.52% (817)	23.65% (633)	13.26% (355)	7.77% (208)	5.38% (144)

Table 4.20: Response distribution for item vision_komm_3

As a leader, I spend time concretizing the vision with regard to the daily work together with my employees in group dialogues during staff meetings or the like (**leader replies**).	Never	Less than once a year	1–2 times a year	3–6 times a year	7–12 times a year	13–24 times a year	More than 24 times a year
Pre-survey (N = 206)	0.97% (2)	6.80% (14)	22.33% (46)	21.36% (44)	25.24% (52)	14.56% (30)	8.74% (18)
Post-survey (N = 151)	0.66% (1)	5.96% (9)	25.83% (39)	29.80% (45)	25.17% (38)	9.27% (14)	3.31% (5)
My leader spends time concretizing the vision with regard to the daily work in group dialogues during staff meetings or the like (**employee replies**).	Never	Less than once a year	1–2 times a year	3–6 times a year	7–12 times a year	13–24 times a year	More than 24 times a year
Pre-survey (N = 3278)	9.03% (296)	11.07% (363)	19.19% (629)	21.96% (720)	18.03% (591)	11.41% (374)	9.30% (305)
Post-survey (N = 2672)	4.00% (107)	9.81% (262)	20.06% (536)	25.11% (671)	19.61% (524)	13.14% (351)	8.27% (221)

Note: Mean values and standard deviations are not displayed as the answer options consist of intervals as opposed to discrete values.

4.1.3   Contexts for Vision Communication

Table 4.21: Items measuring visionary (transformational) leadership

	Leaders: I refer to the vision when I have a dialogue with the employees about… / *Jeg henviser til visionen, når jeg har dialog med medarbejderne om…* **Employees:** My leader refers to the vision when we have dialoges about… / *Min leder henviser til visionen, når vi har dialoger om…*	Source
Vision_samm_1	…difficult case processes. …*vanskelige sagsforløb.*	Own
Vision_samm_2	…prioritization of tasks. …*prioritering af opgaver.*	Own

Vision_samm_3	…reasons for major changes in the organization that have been decided on a higher management level.	Own
	…begrundelser for større forandringer i organisationen, som er besluttet på et højere ledelsesniveau.	
Vision_samm_4	…professional methods.	Own
	…faglige metoder.	
Vision_samm_5	…how new legislation should be translated into practice.	Own
	…hvordan ny lovgivning skal omsættes til praksis.	
Vision_samm_6	…the municipality's overall goals.	Own
	…kommunens overordnede målsætninger.	
Vision_samm_7	…political decisions in our field of work.	Own
	…politiske beslutninger på vores område.	
Vision_samm_8	…cooperation between colleagues.	Own
	…samarbejdet mellem kolleger.	
Vision_samm_9	…cooperation across the municipality.	Own
	…samarbejdet på tværs i kommunen.	
Vision_samm_10	…cooperation with parties who are not part of the municipality's organization.	Own
	…samarbejde med parter, som ikke er en del af den kommunale organisation.	
Vision_samm_11	…other things.	Own
	…andet.	

Table 4.22: Response distribution for item vision_samm_1

I refer to the vision when I have a dialogue with the employees about difficult case processes (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 204)	5.39% (11)	8.33% (17)	25.98% (53)	46.57% (95)	13.73% (28)	3.55	1.01
Post-survey (N = 150)	3.33% (5)	12.67% (19)	24.67% (37)	49.33% (74)	10.00% (15)	3.50	.95
My leader refers to the vision when we have dialogues about difficult case processes (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3259)	10.06% (328)	10.68% (348)	38.69% (1261)	28.08% (915)	12.49% (407)	3.22	1.11
Post-survey (N = 2656)	7.87% (209)	10.28% (273)	36.45% (968)	31.85% (846)	13.55% (360)	3.33	1.08

Table 4.23: Response distribution for item vision_samm_2

I refer to the vision when I have a dialogue with the employees about prioritization of tasks (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 204)	1.96% (4)	5.88% (12)	16.67% (34)	52.94% (108)	22.55% (46)	3.88	.89
Post-survey (N = 150)	2.67% (4)	6.00% (9)	18.67% (28)	55.33% (83)	17.33% (26)	3.79	.89
My leader refers to the vision when we have dialogues about prioritization of tasks (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3252)	7.32% (238)	9.81% (319)	30.20% (982)	36.41% (1184)	16.27% (529)	3.44	1.10
Post-survey (N = 2655)	5.69% (151)	9.19% (244)	29.04% (771)	37.55% (997)	18.53% (492)	3.54	1.07

Table 4.24: Response distribution for item vision_samm_3

I refer to the vision when I have a dialogue with the employees about reasons for major changes in the organization that have been decided on a higher management level (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 204)	1.96% (4)	3.92% (8)	17.16% (35)	49.51% (101)	27.45% (56)	3.97	.88
Post-survey (N = 151)	1.32% (2)	5.96% (9)	17.88% (27)	50.33% (76)	24.50% (37)	3.91	.88
My leader refers to the vision when we have dialogues about reasons for major changes in the organization that have been decided on a higher management level (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3254)	5.65% (184)	8.94% (291)	32.67% (1063)	34.33% (1117)	18.41% (599)	3.51	1.07
Post-survey (N = 2659)	4.66% (124)	7.56% (201)	29.22% (777)	38.13% (1014)	20.42% (543)	3.62	1.04

Table 4.25: Response distribution for item vision_samm_4

I refer to the vision when I have a dialogue with the employees about professional methods (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 205)	0.98% (2)	6.83% (14)	24.39% (50)	44.39% (91)	23.41% (48)	3.82	.90
Post-survey (N = 151)	1.32% (2)	5.30% (8)	17.88% (27)	57.62% (87)	19.88% (27)	3.85	.82
My leader refers to the vision when we have dialogues about professional methods (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3261)	8.49% (277)	11.07% (361)	36.34% (1185)	31.19% (1017)	12.91% (421)	3.29	1.09
Post-survey (N = 2657)	6.36% (169)	9.30% (247)	33.80% (898)	35.08% (932)	15.47% (411)	3.44	1.06

Table 4.26: Response distribution for item vision_samm_5

I refer to the vision when I have a dialogue with the employees about how new legislation should be translated into practice (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 205)	1.46% (3)	6.83% (14)	20.98% (43)	44.88% (92)	25.85% (53)	3.87	.93
Post-survey (N = 151)	2.65% (4)	7.95% (12)	26.49% (40)	44.37% (67)	18.54% (28)	3.68	.95
My leader refers to the vision when we have dialogues about how new legislation should be translated into practice (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3259)	8.35% (272)	10.31% (336)	33.78% (1101)	31.11% (1014)	16.45% (536)	3.37	1.13
Post-survey (N = 2657)	5.57% (148)	9.37% (249)	32.93% (875)	34.47% (916)	17.65% (469)	3.49	1.06

Table 4.27: Response distribution for item vision_samm_6

I refer to the vision when I have a dialogue with the employees about the municipality's overall goals (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 204)	1.96% (4)	5.39% (11)	19.61% (40)	41.67% (85)	31.37% (64)	3.95	.95
Post-survey (N = 151)	1.32% (2)	6.62% (10)	15.89% (24)	50.99% (77)	25.17% (38)	3.92	.89
My leader refers to the vision when we have dialogues about the municipality's overall goals (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3251)	5.57% (181)	7.35% (239)	32.11% (1044)	35.96% (1169)	19.01% (618)	3.55	1.05
Post-survey (N = 2650)	3.51% (93)	5.81% (154)	26.23% (695)	40.68% (1078)	23.77% (630)	3.75	.99

Table 4.28: Response distribution for item vision_samm_7

I refer to the vision when I have a dialogue with the employees about political decisions in our field of work (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 205)	0.98% (2)	3.90% (8)	17.07% (35)	50.24% (103)	27.80% (57)	4.00	.83
Post-survey (N = 152)	1.32% (2)	3.95% (6)	20.39% (31)	47.37% (72)	26.97% (41)	3.95	.87
My leader refers to the vision when we have dialogues about political decisions in our field of work (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3261)	5.49% (179)	7.51% (245)	32.90% (1073)	35.39% (1154)	18.71% (610)	3.54	1.05
Post-survey (N = 2653)	3.77% (100)	6.56% (174)	28.42% (754)	38.97% (1034)	22.28% (591)	3.69	1.01

Table 4.29: Response distribution for item vision_samm_8

I refer to the vision when I have a dialogue with the employees about cooperation between colleagues (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 205)	3.90% (8)	6.83% (14)	20.00% (41)	41.46% (85)	27.80% (57)	3.82	1.04
Post-survey (N = 150)	2.67% (4)	6.67% (10)	18.67% (28)	46.00% (69)	26.00% (39)	3.86	.97
My leader refers to the vision when we have dialogues about cooperation between colleagues (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3257)	8.04% (262)	10.96% (357)	33.31% (1085)	32.33% (1053)	15.35% (500)	3.36	1.11
Post-survey (N = 2654)	5.24% (139)	9.50% (252)	31.24% (829)	35.91% (953)	18.12% (481)	3.52	1.06

Table 4.30: Response distribution for item vision_samm_9

I refer to the vision when I have a dialogue with the employees about cooperation across the municipality (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 205)	1.95% (4)	7.80% (16)	15.61% (32)	47.32% (97)	27.32% (56)	3.90	.96
Post-survey (N = 151)	0.66% (1)	7.28% (11)	29.80% (45)	39.74% (60)	22.52% (34)	3.76	.91
My leader refers to the vision when we have dialogues about cooperation across the municipality (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3255)	6.97% (227)	9.49% (309)	37.60% (1224)	31.64% (1030)	14.29% (465)	3.37	1.06
Post-survey (N = 2649)	4.79% (127)	8.91% (236)	32.65% (865)	37.07% (982)	16.57% (439)	3.52	1.02

Table 4.31: Response distribution for item vision_samm_10

I refer to the vision when I have a dialogue with the employees about cooperation with parties who are not part of the municipality's organization (**leader replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 203)	1.97% (4)	10.34% (21)	28.57% (58)	35.96% (73)	23.15% (47)	3.68	1.01
Post-survey (N = 151)	1.99% (3)	9.27% (14)	31.79% (48)	41.06% (62)	15.89% (24)	3.60	.93
My leader refers to the vision when we have dialogues about cooperation with parties who are not part of the municipality's organization (**employee replies**).	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3222)	7.88% (254)	8.63% (278)	45.16% (1455)	26.47% (853)	11.86% (382)	3.26	1.04
Post-survey (N = 2632)	5.43% (143)	8.13% (214)	41.98% (1239)	29.83% (785)	14.63% (385)	3.40	1.01

Across all the outlined contexts, public managers report referring more to the vision than the employees perceive them to do. Furthermore, employee responses are generally more evenly dispersed across the scale than the leaders' responses.

4.2 Transactional Leadership

Transactional leadership focuses on transactions between leader and employee; transactions of contingent rewards and sanctions for pre-defined efforts (Podsakoff et al., 2006). It is defined "as the use of contingent rewards and sanctions" (Jensen et al., 2019a: 12). The intention of transactional leadership is to make employees pursue their self-interest in a way that is beneficial to the organization by using rewards and sanctions to alter the costs and benefits of particular actions.

Survey measures capturing leaders' use of these instruments build mainly on existing studies (e.g., House, 1998 and Jensen et al., 2019a). The survey measures are distributed to public managers as well as employees.

4.2.1 Contingent Non-pecuniary Rewards

Table 4.32: Items measuring verbal transactional leadership, contingent non-pecuniary rewards

#	**Survey prompt:** As a leader I… / *Som leder…*	Source
trans_cnpr_1	…give individual employees positive feedback when they perform well. *…giver jeg individuelle medarbejdere positiv feedback, hvis de præsterer godt.*	Modified and tested by Jensen et al., 2019a based on House, 1998
trans_cnpr_2	…actively show my appreciation of employees who do their jobs better than expected. *…viser jeg aktivt min påskønnelse af medarbejdere, der gør deres arbejde bedre end forventet.*	Modified and tested by Jensen et al., 2019a based on House, 1998
trans_cnpr_3	…personally compliment employees when they do outstanding work. *…roser jeg personligt medarbejdere, når de gør deres arbejde særlig godt.*	Modified and tested by Jensen et al., 2019a based on House, 1998
	Survey prompt: My leader… / *Min leder…*	Source
trans_cnpr_1	…gives individual employees positive feedback when they perform well. *…giver individuelle medarbejdere positiv feedback, hvis de præsterer godt.*	Modified and tested by Jensen et al., 2019a based on House, 1998
trans_cnpr_2	…actively shows their appreciation of employees who do their jobs better than expected.	Modified and tested by Jensen et al., 2019a based on House, 1998

	…viser aktivt sin påskønnelse af medarbejdere, der gør deres arbejde bedre end forventet.	
trans_cnpr_3	…personally compliments employees when they do outstanding work. *…roser personligt medarbejdere, når de gør deres arbejde særlig godt.*	Modified and tested by Jensen et al., 2019a based on House, 1998

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.33: Factor analysis: verbal transactional leadership (contingent non-pecuniary rewards) reported by public managers in the pre-survey

Survey prompt: As a leader I…	Loadings
…give individual employees positive feedback when they perform well.	.813
…actively show my appreciation of employees who do their jobs better than expected.	.854
…personally compliment employees when they do outstanding work.	.840

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 205. Cronbach's alpha = .784.
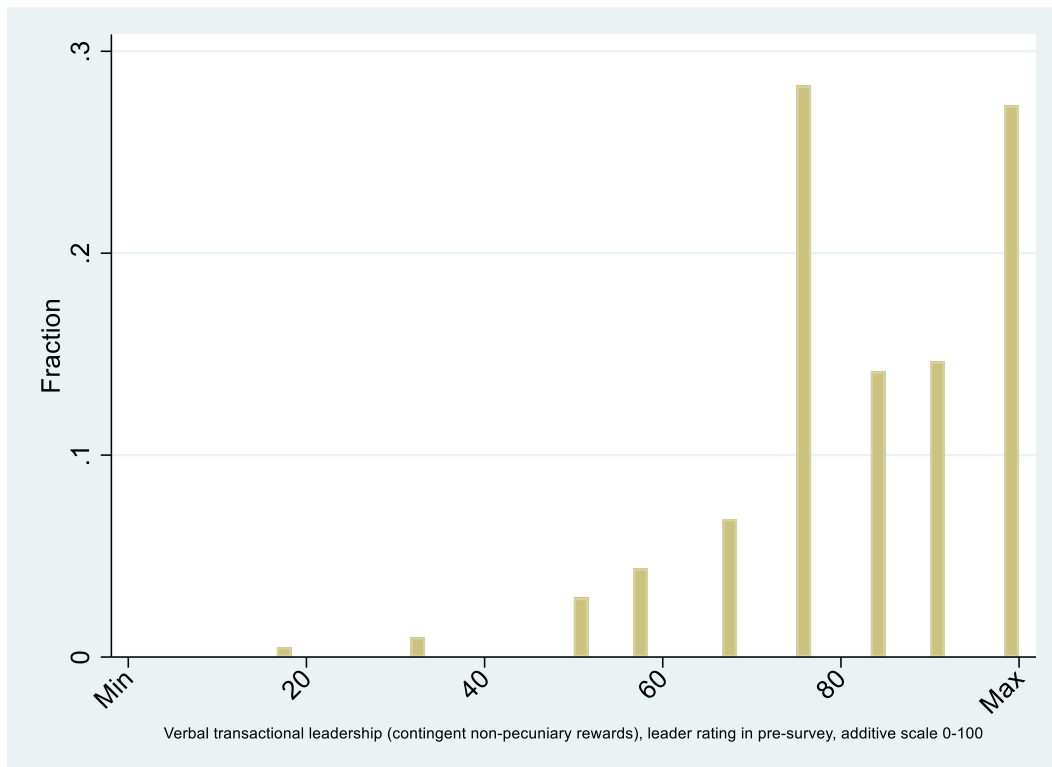
Table 4.34: Factor analysis: verbal transactional leadership (contingent non-pecuniary rewards) reported by public managers in the post-survey

Survey prompt: As a leader I…	Loadings
…give individual employees positive feedback when they perform well.	.859
…actively show my appreciation of employees who do their jobs better than expected.	.877
…personally compliment employees when they do outstanding work.	.844

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 150. Cronbach's alpha = .811.

Table 4.35: Factor analysis: verbal transactional leadership (contingent non-pecuniary rewards) reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…gives individual employees positive feedback when they perform well.	.956
…actively shows their appreciation of employees who do their jobs better than expected.	.953
…personally compliments employees when they do outstanding work.	.964

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3284. Cronbach's alpha = .955.

Table 4.36: Factor analysis: verbal transactional leadership (contingent non-pecuniary rewards) reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…gives individual employees positive feedback when they perform well.	.957
…actively shows their appreciation of employees who do their jobs better than expected.	.955
…personally compliments employees when they do outstanding work.	.966

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2673. Cronbach's alpha = .957.

Across public managers and employees, all loadings are very high (above .8), indicating that the factor is strongly correlated with each of the three items. The alpha values show good internal reliability, especially for employee responses. Thus, the three items can be used to construct a reflective index.

Figure 4.9: Distribution of verbal transactional leadership (contingent non-pecuniary rewards) as reported by public managers in the pre-survey
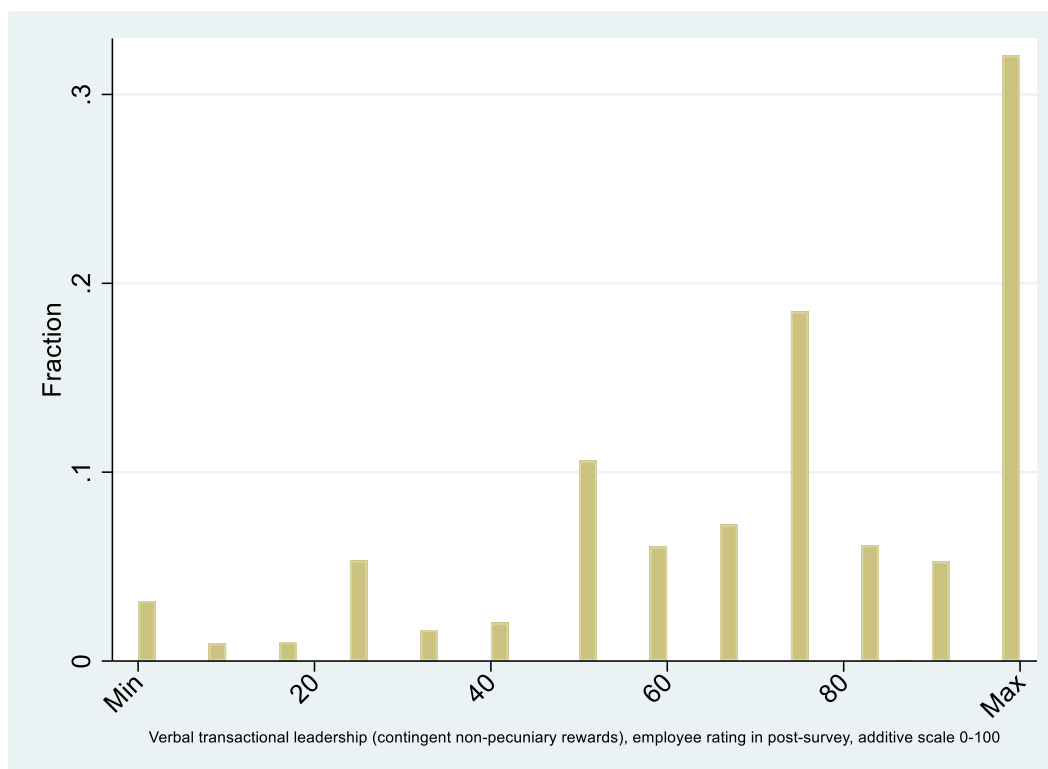

Note: N = 205. Mean = 82.72, std. dev. = 15.21, min. = 16.67, max. = 100, skewness = -.90, kurtosis = 4.35. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.10: Distribution of verbal transactional leadership (contingent non-pecuniary rewards) as reported by public managers in the post-survey

Verbal transactional leadership (contingent non-pecuniary rewards), leader rating in post-survey, additive scale 0-100
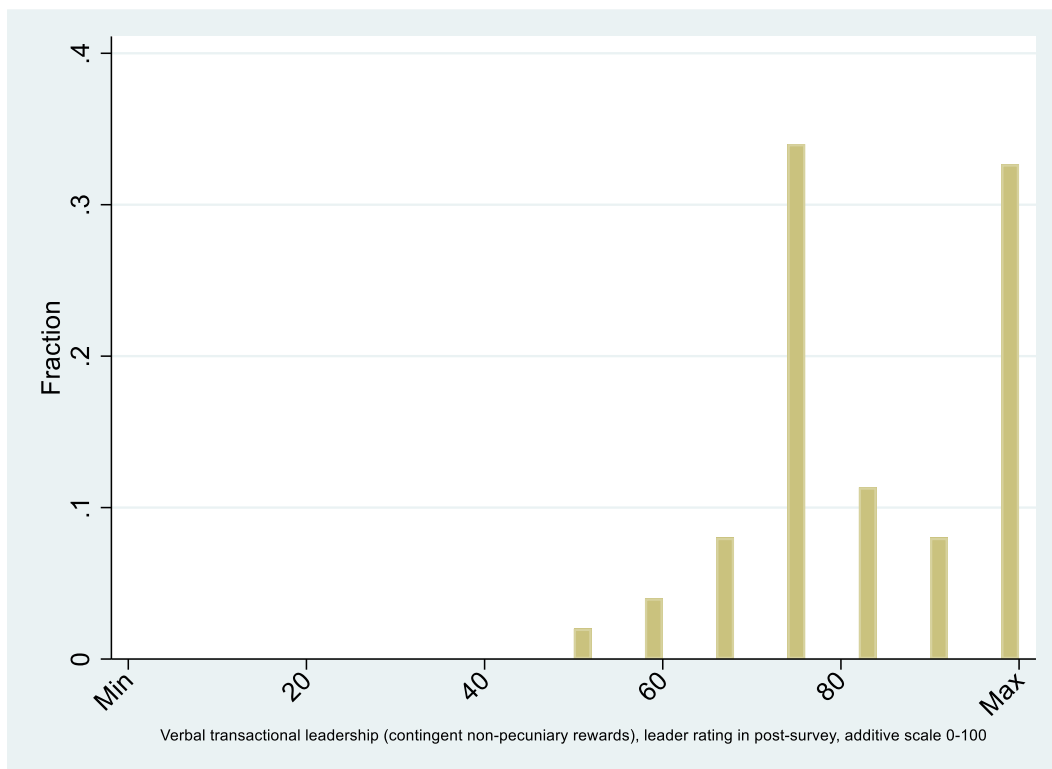
Note: N = 150. Mean = 83.61, std. dev. = 13.80, min. = 50, max. = 100, skewness = -.20, kurtosis = 2.07. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.11: Distribution of verbal transactional leadership (contingent non-pecuniary rewards) as reported by employees in the pre-survey
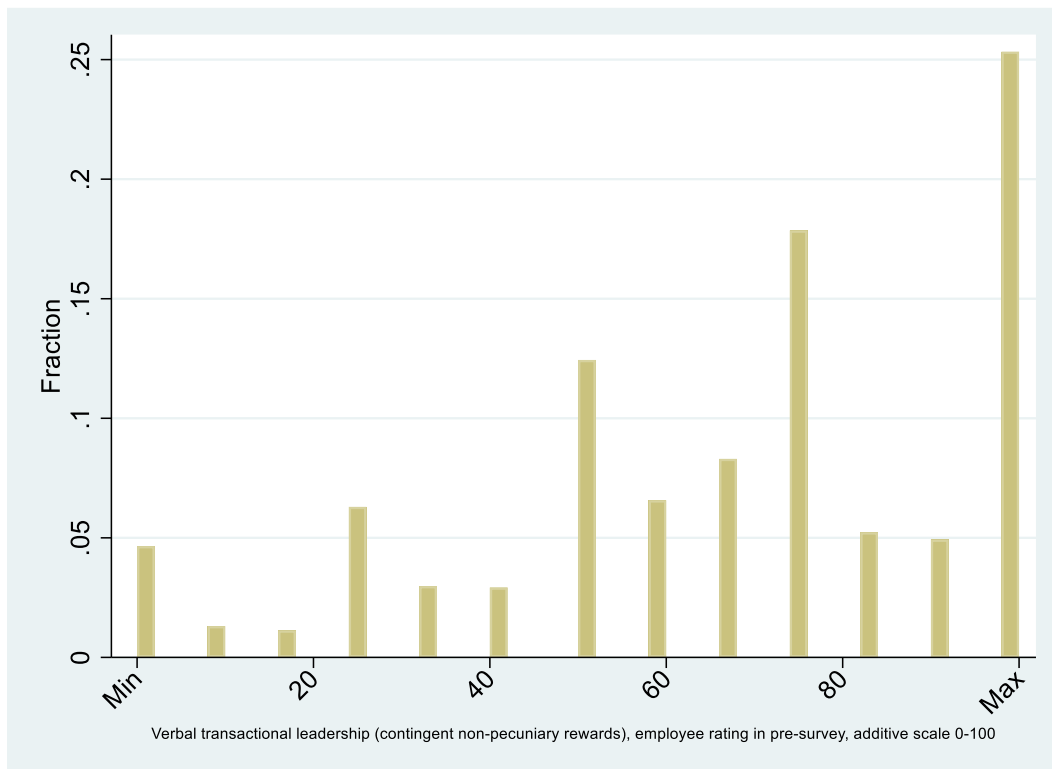
Note: N = 3288. Mean = 67.29, std. dev. = 28.61, min. = 0, max. = 100, skewness = -.67, kurtosis = 2.63. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.12: Distribution of verbal transactional leadership (contingent non-pecuniary rewards) as reported by employees in the post-survey

Note: N = 2675. Mean = 72.54, std. dev. = 27.21, min. = 0, max. = 100, skewness = -.89, kurtosis = 3.08. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

All distributions are left-skewed with two noticeable peaks: one around the score of 75 and one at the upper limit of the scale. Overall, this suggests that employees think that their managers largely enact verbal transactional leadership through non-pecuniary rewards, and the public managers generally share this perception. However, the managers generally rate themselves higher than the employees do, as evident by the difference in mean values.

4.2.2   Contingent Pecuniary Rewards

Table 4.37: Items measuring verbal transactional leadership, contingent pecuniary rewards

#	**Survey prompt:** As a leader I… / *Som leder…*	Source
trans_cpr_1	…reward the employees for their achievements when they meet my demands. *…belønner jeg medarbejdernes præstationer, når de lever op til mine krav.*	Jensen et al., 2019a, based on Jacobsen & Andersen, 2015
trans_cpr_2	…reward the employees based on how well they perform their work.	Jensen et al., 2019a, based on Jacobsen & Andersen, 2015

	…belønner jeg medarbejderne på baggrund af, hvor godt de præsterer i deres arbejde.	
trans_cpr_3	…make it clear what the employees will receive if they meet the demands. *…gør jeg det klart, hvad medarbejderne vil modtage, hvis de lever op til kravene.*	Jensen et al., 2019a
Survey prompt: My leader… / *Min leder…*		Source
trans_cpr_1	…rewards the employees for their achievements when they meet the leader's demands. *…belønner medarbejdernes præstationer, når de lever op til lederens krav.*	Jensen et al., 2019a, based on Jacobsen & Andersen, 2015
trans_cpr_2	…rewards the employees based on how well they perform their work. *…belønner medarbejderne på baggrund af, hvor godt de præsterer i deres arbejde.*	Jensen et al., 2019a, based on Jacobsen & Andersen, 2015
trans_cpr_3	…makes it clear what the employees will receive if they meet the demands. *…gør det klart, hvad medarbejderne vil modtage, hvis de lever op til kravene.*	Jensen et al., 2019a

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.38: Factor analysis: verbal transactional leadership (contingent pecuniary rewards) reported by public managers in the pre-survey

Survey prompt: As a leader I…	Loadings
…reward the employees for their achievements when they meet my demands.	.891
…reward the employees based on how well they perform their work.	.901
…make it clear what the employees will receive if they meet the demands.	.774

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 202. Cronbach's alpha = .818.
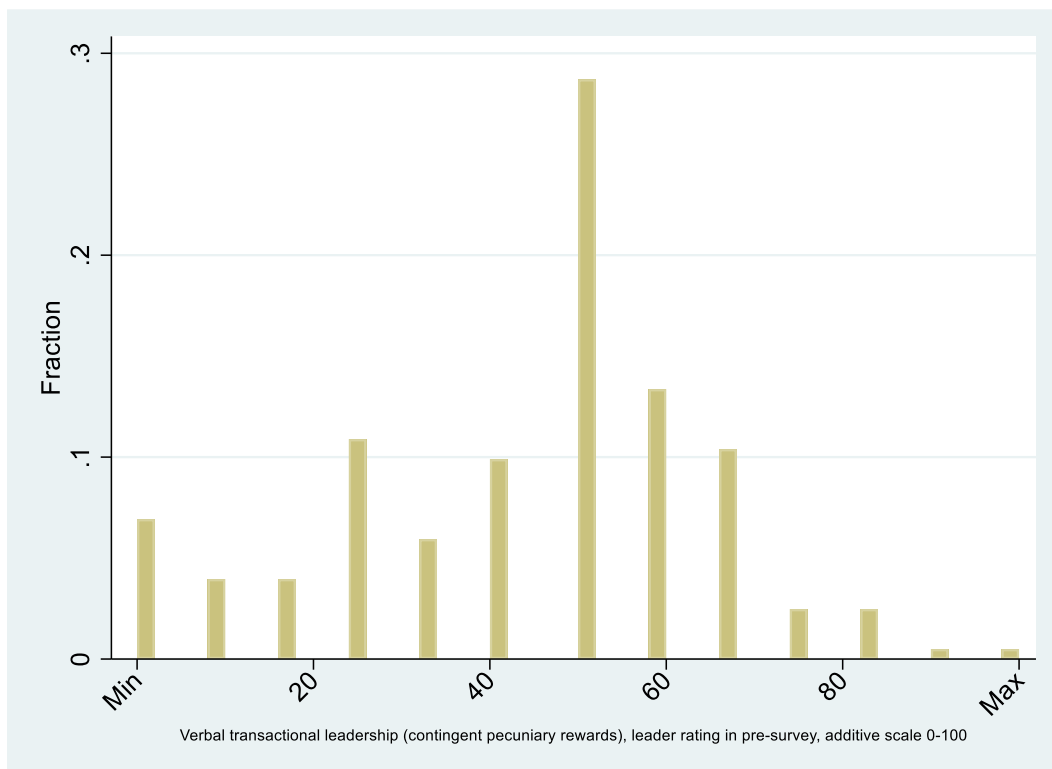
Table 4.39: Factor analysis: verbal transactional leadership (contingent pecuniary rewards) reported by public managers in the post-survey

Survey prompt: As a leader I…	Loadings
…reward the employees for their achievements when they meet my demands.	.877
…reward the employees based on how well they perform their work.	.868
…make it clear what the employees will receive if they meet the demands.	.746

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 148. Cronbach's alpha = .777.

Table 4.40: Factor analysis: verbal transactional leadership (contingent pecuniary rewards) reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…gives individual employees positive feedback when they perform well.	.948
…actively shows their appreciation of employees who do their jobs better than expected.	.947
…personally compliments employees when they do outstanding work.	.891

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3264. Cronbach's alpha = .921.

Table 4.41: Factor analysis: verbal transactional leadership (contingent pecuniary rewards) reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…rewards the employees for their achievements when they meet the leader's demands.	.948
…rewards the employees based on how well they perform their work.	.952
…makes it clear what the employees will receive if they meet the demands.	.872

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2654. Cronbach's alpha = .915.

Across public managers and employees, all loadings reach a minimum of .75, suggesting that the items reflect the same underlying concept. Generally, the loadings are slightly higher for employee responses than for leader responses. The alpha values show good internal reliability.

Figure 4.13: Distribution of verbal transactional leadership (contingent pecuniary rewards) as reported by public managers in the pre-survey

Verbal transactional leadership (contingent pecuniary rewards), leader rating in pre-survey, additive scale 0-100
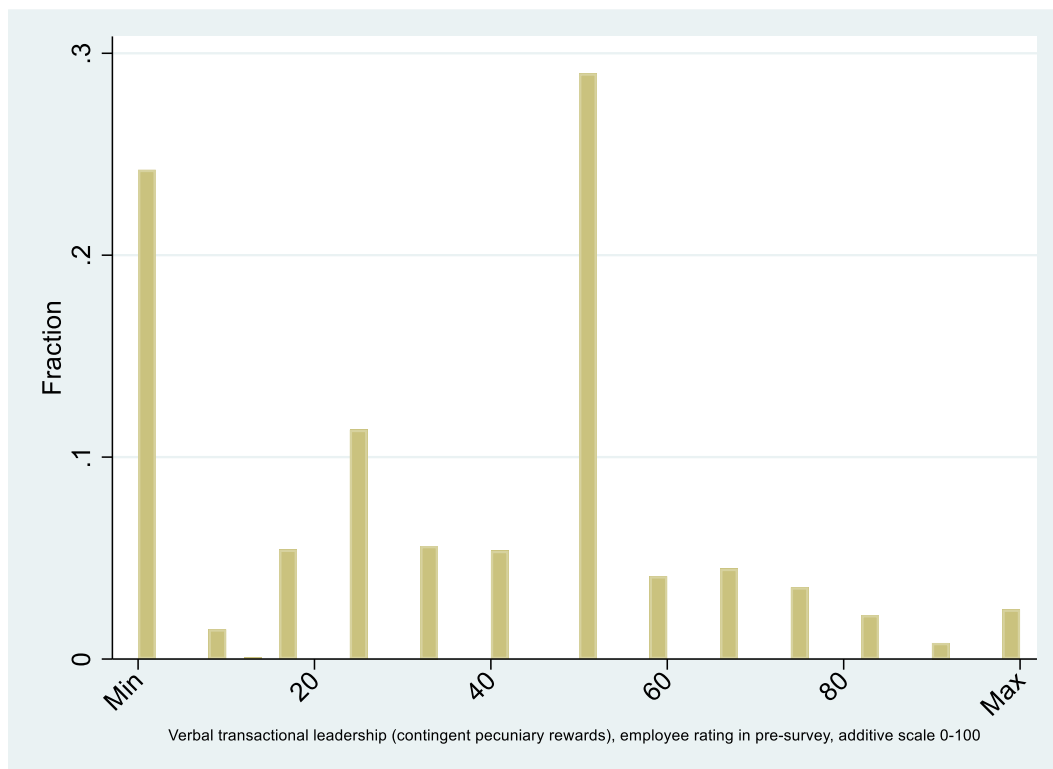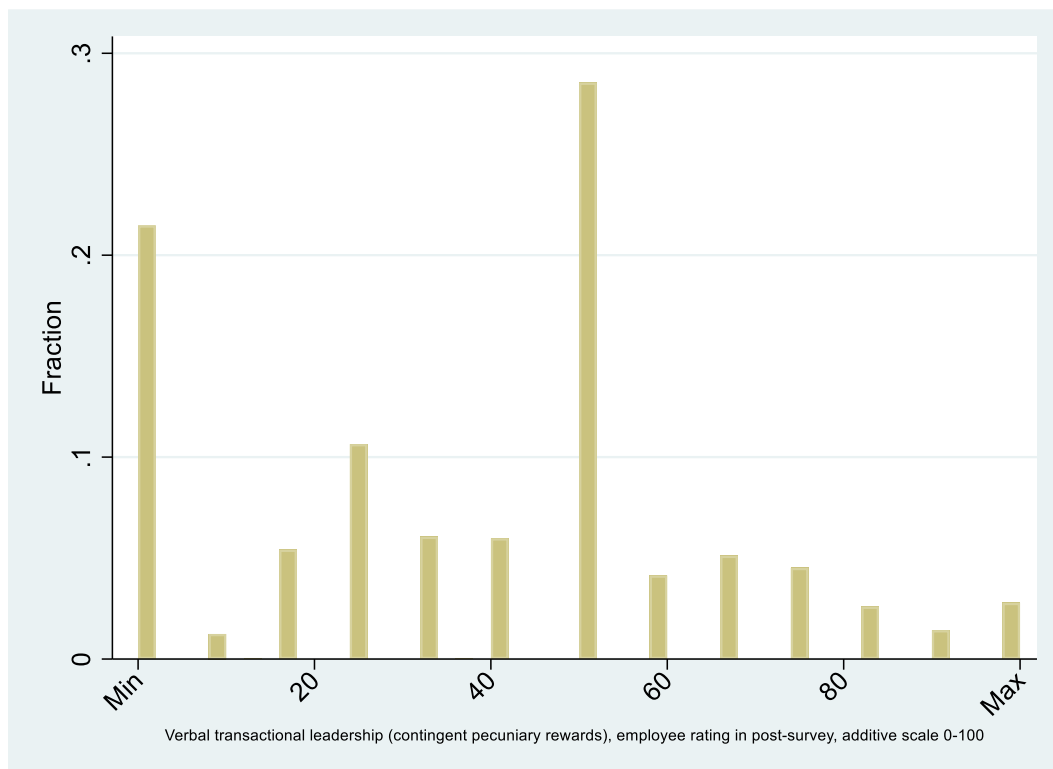
Note: N = 202. Mean = 43.77, std. dev. = 21.05, min. = 0, max. = 100, skewness = -.40, kurtosis = 2.82. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.14: Distribution of verbal transactional leadership (contingent pecuniary rewards) as reported by public managers in the post-survey
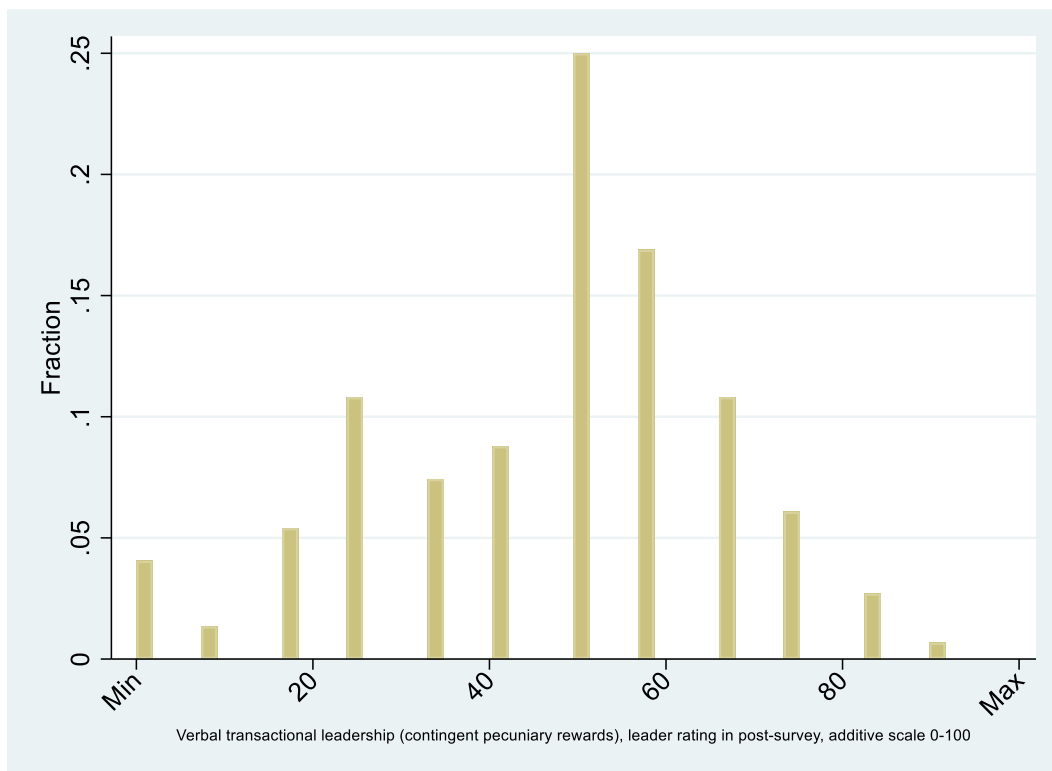
Note: N = 148. Mean = 46.85, std. dev. = 19.84, min. = 0, max. = 91.66, skewness = -.44, kurtosis = 2.82. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.15: Distribution of verbal transactional leadership (contingent pecuniary rewards) as reported by employees in the pre-survey

Note: N = 3269. Mean = 35.48, std. dev. = 26.62, min. = 0, max. = 100, skewness = .20, kurtosis = 2.33. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.16: Distribution of verbal transactional leadership (contingent pecuniary rewards) as reported by employees in the post-survey

Note: N = 2659. Mean = 37.93, std. dev. = 27.01, min. = 0, max. = 100, skewness = .15, kurtosis = 2.34. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

The distributions for leader responses approach a normal distribution but with a large spike in the middle of the scale. The distributions for employee responses are slightly right-skewed with two peaks: one at the lower limit of the scale and one in the middle. Across public managers and employees, all mean values are below the middle of the scale. This suggests that the managers are perceived to enact verbal transactional leadership through contingent pecuniary rewards to a fairly limited degree, both by the public managers themselves and their employees.

4.2.3 Contingent Sanctions

Table 4.42: Items measuring verbal transactional leadership, contingent sanctions

	Survey prompt: As a leader I… / *Som leder…*	Source
trans_cs_1	…ensure there are consequences for the employees if they perform worse than their colleagues. …*lader jeg det få konsekvenser for medarbejderne, hvis de præsterer dårligere end deres kollegaer.*	Jensen et al., 2019a
trans_cs_2	…ensure there are consequences for the employees if they do not consistently perform as required. …*sørger jeg for, at det får konsekvenser for medarbejderne, hvis de ikke vedvarende præsterer som krævet.*	Jensen et al., 2019a
trans_cs_3	…ensure there are consequences for the employees if they do not meet my demands. …*lader jeg det få konsekvenser for mine medarbejdere, hvis de ikke lever op til mine krav.*	Jensen et al., 2019a
	Survey prompt: My leader… / *Min leder…*	Source
trans_cs_1	…ensures there are consequences for the employees if they perform worse than their colleagues. …*lader det få konsekvenser for medarbejderne, hvis de præsterer dårligere end deres kollegaer.*	Jensen et al., 2019a
trans_cs_2	…ensures there are consequences for the employees if they do not consistently perform as required. …*sørger for, at det får konsekvenser for medarbejderne, hvis de ikke vedvarende præsterer som krævet.*	Jensen et al., 2019a
trans_cs_3	…ensures there are consequences for the employees if they do not meet my demands. …*lader det få konsekvenser for medarbejderne, hvis de ikke lever op til lederens krav.*	Jensen et al., 2019a

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.43: Factor analysis: verbal transactional leadership (contingent sanctions) reported by public managers in the pre-survey

Survey prompt: As a leader I…	Loadings
…ensure there are consequences for the employees if they perform worse than their colleagues.	.840
…ensure there are consequences for the employees if they do not consistently perform as required.	.851
…ensure there are consequences for the employees if they do not meet my demands.	.877

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 201. Cronbach's alpha = .811.

Table 4.44: Factor analysis: verbal transactional leadership (contingent sanctions) reported by public managers in the post-survey

Survey prompt: As a leader I…	Loadings
…ensure there are consequences for the employees if they perform worse than their colleagues.	.814
…ensure there are consequences for the employees if they do not consistently perform as required.	.856
…ensure there are consequences for the employees if they do not meet my demands.	.907

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 149. Cronbach's alpha = .817.

Table 4.45: Factor analysis: verbal transactional leadership (contingent sanctions) reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…ensures there are consequences for the employees if they perform worse than their colleagues.	.932
…ensures there are consequences for the employees if they do not consistently perform as required.	.959
…ensures there are consequences for the employees if they do not meet their demands.	.950

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3267. Cronbach's alpha = .942.

Table 4.46: Factor analysis: verbal transactional leadership (contingent pecuniary rewards) reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…ensures there are consequences for the employees if they perform worse than their colleagues.	.928
…ensures there are consequences for the employees if they do not consistently perform as required.	.961
…ensures there are consequences for the employees if they do not meet their demands.	.948

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2659. Cronbach's alpha = .941.

Across public managers and employees, all survey loadings are above .8, which is very high. The alpha values also show very good internal reliability. Hence, all three items can be used to construct a reflective index.

Figure 4.17: Distribution of verbal transactional leadership (contingent sanctions) as reported by public managers in the pre-survey
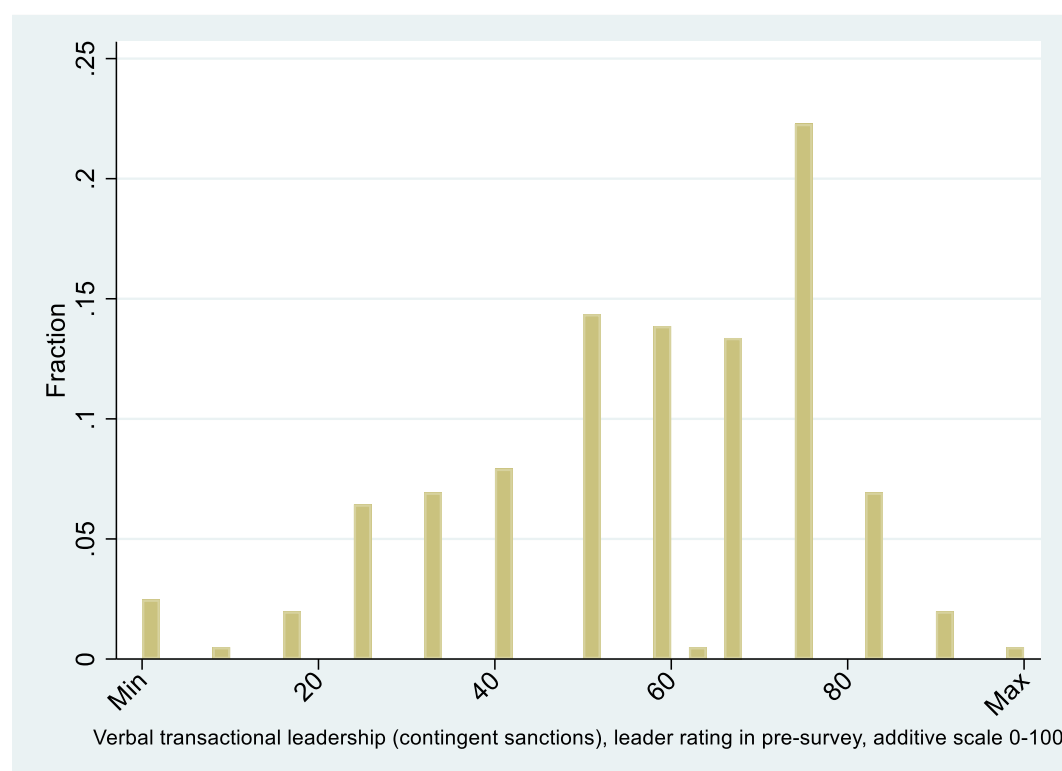
Note: N = 202. Mean = 56.87, std. dev. = 20.56, min. = 0 max. = 100, skewness = -.67, kurtosis = 3.03. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.18: Distribution of verbal transactional leadership (contingent sanctions) as reported by public managers in the post-survey
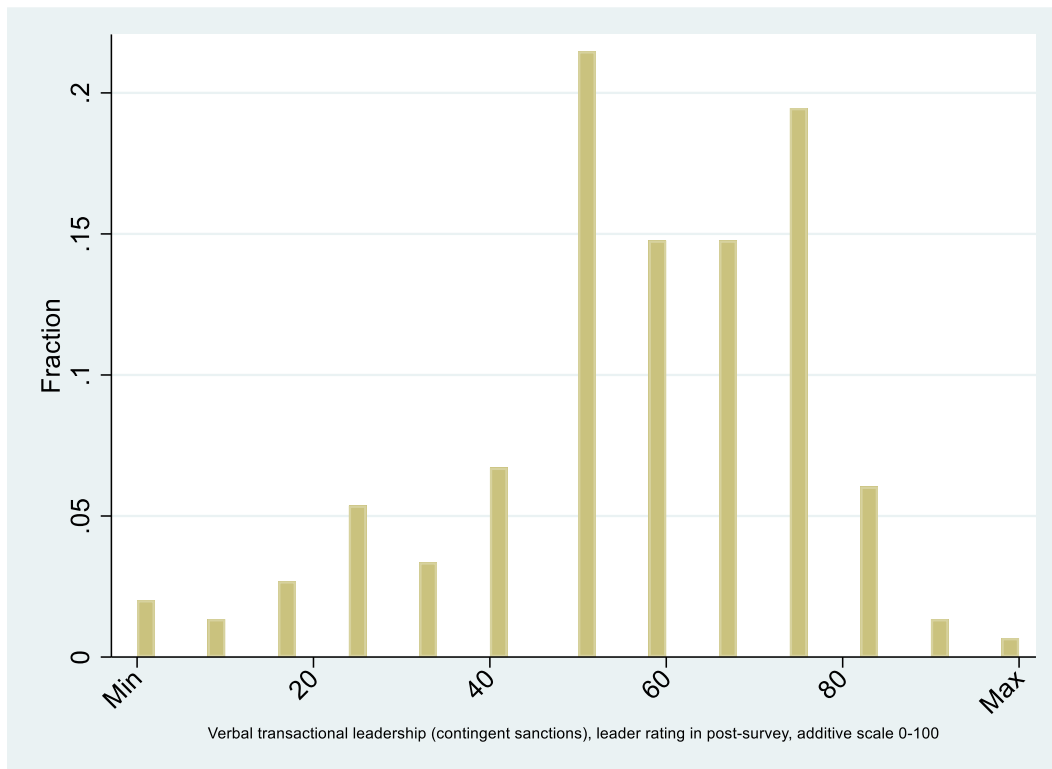
Note: N = 149. Mean = 56.54, std. dev. = 19.77, min. = 0, max. = 100, skewness = -.73, kurtosis = 3.40. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.19: Distribution of verbal transactional leadership (contingent sanctions) as reported by employees in the pre-survey
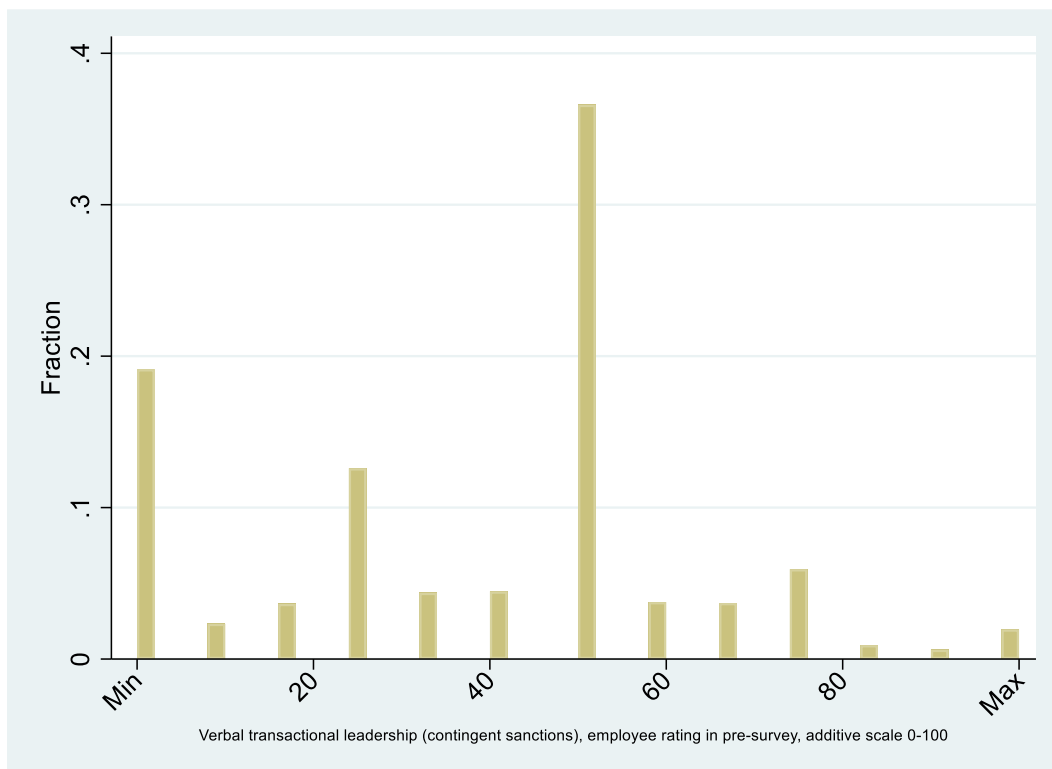
Note: N = 3271. Mean = 37.95, std. dev. = 25.06, min. = 0, max. = 100, skewness = -.02, kurtosis = 2.43. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.20: Distribution of verbal transactional leadership (contingent sanctions) as reported by employees in the post-survey
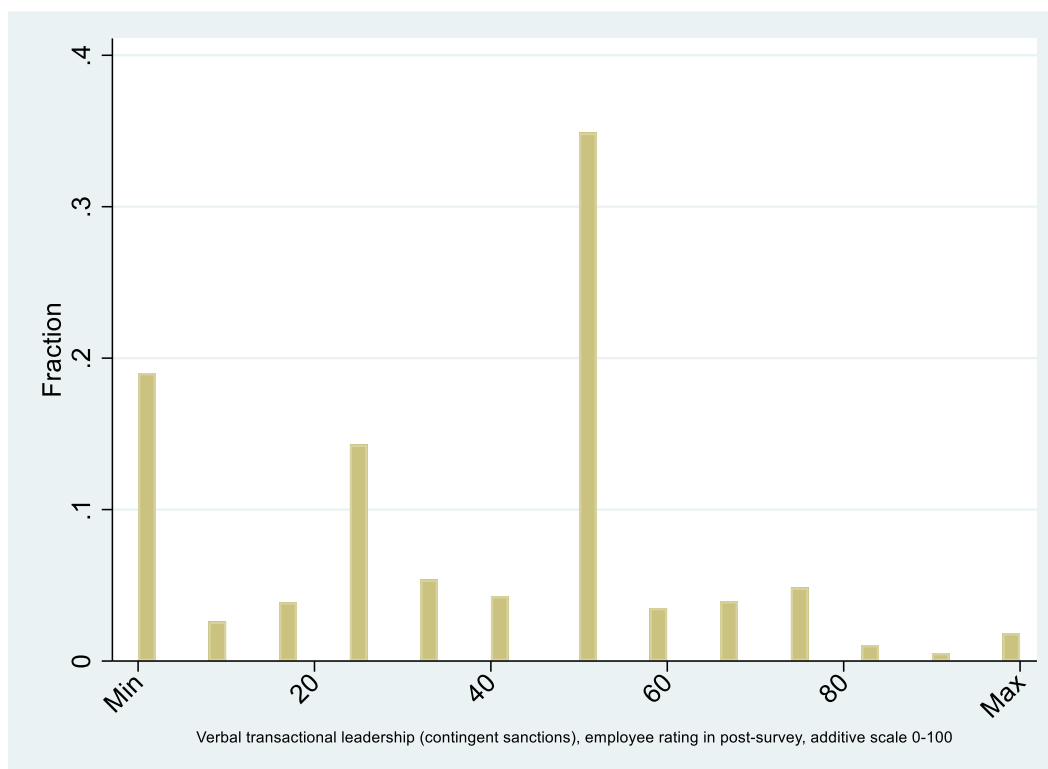
Note: N = 2661. Mean = 36.95, std. dev. = 24.72, min. = 0, max. = 100, skewness = .04, kurtosis = 2.46. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

The distributions for public managers' responses approach normal distributions but are slightly left-skewed. Employee responses, on the other hand, have a spike in the middle of the scale but are more dispersed than the leader responses, as evident by the higher standard deviation. A substantially lower mean for the employee responses indicate that they think their leaders enact visionary leadership through contingent sanctions to a much lower degree than the leaders themselves perceive.

4.3   Professional Development Leadership – Overall

Professional development leadership is a leadership approach that focuses on the professional resources of the employees, i.e., their specialized, theoretical knowledge and professional norms (Andersen & Pedersen, 2012). The core ambition of professional development leadership is to facilitate a shared understanding of professional quality in an organizational unit and realize it in practice. The core behaviors of professional development leadership comprise the leader's attempts to create alignment between organizational goals and professional norms, develop professional knowledge, and activate professional norms and knowledge in practice (Lund, 2021). The measure of professional development leadership is a new measure consisting of 12 items (Lund, 2021). Some of them are inspired by the measures of professional development leadership applied by the Danish Leadership and Management Commission (Ledelseskommissionen, 2018) and the National

Leadership Evaluation (Ledelsesevalueringen, 2021). All items are measured using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree."

Table 4.47: Items measuring professional development leadership

	Leaders: As a leader… / *Som leder…*	Source
faglig1_1	…I make an active effort to ensure a common understanding of professional quality in my unit. *…gør jeg en aktiv indsats for at sikre en fælles forståelse af faglig kvalitet i min enhed.*	Lund, 2021
faglig1_2	…I work actively to ensure that there is coherence between professional norms and the unit's objectives. *…arbejder jeg aktivt for, at der er sammenhæng mellem faglige normer og enhedens målsætninger.*	Lund, 2021
faglig1_3	…I try to develop the employees' professional norms towards the unit's objectives. *…forsøger jeg at udvikle medarbejdernes faglige normer i retningen af organisationens målsætninger.*	Lund, 2021
faglig1_4	…I work on translating the organization's objectives to ensure that they are professionally meaningful. *…arbejder jeg med at oversætte organisationens målsætninger, så de er fagligt meningsfulde.*	Lund, 2021
faglig2_1	…I actively contribute to ensuring that the employees are professionally updated. *…bidrager jeg aktivt til, at medarbejderne er fagligt opdaterede.*	Lund, 2021
faglig2_2	…I make an active effort to ensure the employees' professional development. *…gør jeg en aktiv indsats for at sikre medarbejdernes faglige udvikling.*	Lund, 2021
faglig2_3	…I prioritize resources so that employees can acquire new professional knowledge.	Lund, 2021

	...prioriterer jeg ressourcer til, at medarbejderne kan tilegne sig ny faglig viden.	
faglig2_4	...I support knowledge sharing in order to make our solution of the task even better. ...understøtter jeg videndeling med henblik på at gøre vores løsning af opgaven endnu bedre.	Lund, 2021
faglig3_1	...I contribute to ensuring the professional quality of our work. ...er jeg med til at sikre den faglige kvalitet af vores arbejde.	Lund, 2021
faglig3_2	...I actively support the employees' application of professional knowledge in the task solution. ...understøtter jeg aktivt, at medarbejderne anvender faglig viden i opgaveløsningen.	Lund, 2021
faglig3_3	...I create opportunities to discuss professional norms. ...skaber jeg anledninger til at drøfte faglige normer.	Lund, 2021
faglig3_4	...I make an active effort to ensure professional reflection in the work. ...gør jeg en aktiv indsats for at sikre den faglige refleksion i arbejdet.	Lund, 2021
Employees: My leader... /*Min leder…*		
faglig1_1	...makes an effort to ensure a common understanding of professional quality in my unit. ...gør en aktiv indsats for at sikre en fælles forståelse af faglig kvalitet i min enhed.	Lund, 2021
faglig1_2	...works actively to ensure that there is coherence between professional norms and the unit's objectives. ...arbejder aktivt for, at der er sammenhæng mellem faglige normer og enhedens målsætninger.	Lund, 2021
faglig1_3	...tries to develop the employees' professional norms towards the unit's objectives.	Lund, 2021

	...forsøger at udvikle medarbejdernes faglige normer i retningen af organisationens målsætninger.	
faglig1_4	...works on translating the organization's objectives to ensure that they are professionally meaningful. *...arbejder med at oversætte organisationens målsætninger, så de er fagligt meningsfulde.*	Lund, 2021
faglig2_1	...actively contributes to ensuring that the employees are professionally updated. *...bidrager aktivt til, at medarbejderne er fagligt opdaterede.*	Lund, 2021
faglig2_2	...makes an active effort to ensure the employees' professional development. *...gør en aktiv indsats for at sikre medarbejdernes faglige udvikling.*	Lund, 2021
faglig2_3	...prioritizes resources so that employees can acquire new professional knowledge. *...prioriterer ressourcer til, at medarbejderne kan tilegne sig ny faglig viden.*	Lund, 2021
faglig2_4	...supports knowledge sharing in order to make our solution of the task even better. *...understøtter videndeling med henblik på at gøre vores løsning af opgaven endnu bedre.*	Lund, 2021
faglig3_1	...contributes to ensuring the professional quality of our work. *...er med til at sikre den faglige kvalitet af vores arbejde.*	Lund, 2021
faglig3_2	...actively supports the employees' application of professional knowledge in the task solution. *...understøtter aktivt, at medarbejderne anvender faglig viden i opgaveløsningen.*	Lund, 2021
faglig3_3	...creates opportunities to discuss professional norms. *...skaber anledninger til at drøfte faglige normer.*	Lund, 2021

| faglig3_4 | ...makes an active effort to ensure the professional reflection in the work.

...gør en aktiv indsats for at sikre den faglige refleksion i arbejdet. | Lund, 2021 |

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.48: Correlation matrix. Professional development leadership items as reported by public managers in the pre-survey

	faglig1_1	faglig1_2	faglig1_3	faglig1_4	faglig2_1	faglig2_2	faglig2_3
faglig1_1	1.00						
faglig1_2	0.60	1.00					
faglig1_3	0.46	0.61	1.00				
faglig1_4	0.36	0.49	0.54	1.00			
faglig2_1	0.35	0.24	0.23	0.18	1.00		
faglig2_2	0.27	0.29	0.34	0.21	0.47	1.00	
faglig2_3	0.30	0.28	0.30	0.24	0.36	0.49	1.00
faglig2_4	0.11	0.19	0.31	0.19	0.30	0.44	0.41
faglig3_1	0.41	0.41	0.34	0.30	0.42	0.35	0.26
faglig3_2	0.30	0.36	0.31	0.23	0.39	0.36	0.24
faglig3_3	0.23	0.32	0.30	0.12	0.29	0.31	0.18
faglig3_4	0.29	0.32	0.34	0.26	0.26	0.35	0.27

Table 4.48 (continued)

	faglig2_4	faglig3_1	faglig3_2	faglig3_3	faglig3_4
faglig2_4	1.00				
faglig3_1	0.24	1.00			
faglig3_2	0.30	0.58	1.00		
faglig3_3	0.36	0.38	0.50	1.00	
faglig3_4	0.46	0.43	0.49	0.61	1.00

Note: Table entries are Pearson's correlation coefficients. N = 200.

Table 4.49: Correlation matrix. Professional development leadership items as reported by public managers in the post-survey

	faglig1_1	faglig1_2	faglig1_3	faglig1_4	faglig2_1	faglig2_2	faglig2_3
faglig1_1	1.00						
faglig1_2	0.62	1.00					
faglig1_3	0.48	0.64	1.00				
faglig1_4	0.38	0.58	0.55	1.00			
faglig2_1	0.39	0.38	0.38	0.24	1.00		
faglig2_2	0.48	0.38	0.40	0.30	0.65	1.00	
faglig2_3	0.23	0.22	0.31	0.31	0.38	0.47	1.00
faglig2_4	0.46	0.36	0.36	0.35	0.28	0.40	0.44
faglig3_1	0.51	0.49	0.38	0.31	0.48	0.47	0.27
faglig3_2	0.44	0.47	0.39	0.29	0.43	0.57	0.32
faglig3_3	0.46	0.55	0.57	0.43	0.31	0.39	0.27
faglig3_4	0.41	0.41	0.38	0.30	0.30	0.40	0.32

Table 4.49 (continued)

	faglig2_4	faglig3_1	faglig3_2	faglig3_3	faglig3_4
faglig2_4	1.00				
faglig3_1	0.36	1.00			
faglig3_2	0.36	0.60	1.00		
faglig3_3	0.38	0.41	0.51	1.00	
faglig3_4	0.52	0.47	0.55	0.62	1.00

Note: Table entries are Pearson's correlation coefficients. N = 148.

Table 4.50: Correlation matrix. Professional development leadership items as reported by employees in the pre-survey

	faglig1_1	faglig1_2	faglig1_3	faglig1_4	faglig2_1	faglig2_2	faglig2_3
faglig1_1	1.00						
faglig1_2	0.83	1.00					
faglig1_3	0.73	0.78	1.00				
faglig1_4	0.71	0.76	0.76	1.00			
faglig2_1	0.66	0.66	0.68	0.65	1.00		
faglig2_2	0.64	0.65	0.72	0.65	0.84	1.00	
faglig2_3	0.53	0.56	0.64	0.57	0.69	0.78	1.00
faglig2_4	0.62	0.63	0.63	0.62	0.70	0.71	0.68
faglig3_1	0.72	0.72	0.68	0.68	0.74	0.71	0.59
faglig3_2	0.69	0.71	0.66	0.66	0.71	0.69	0.59
faglig3_3	0.54	0.57	0.63	0.58	0.66	0.75	0.86
faglig3_4	0.64	0.65	0.64	0.63	0.67	0.68	0.65

Table 4.50 (continued)

	faglig2_4	faglig3_1	faglig3_2	faglig3_3	faglig3_4
faglig2_4	1.00				
faglig3_1	0.66	1.00			
faglig3_2	0.67	0.83	1.00		
faglig3_3	0.66	0.63	0.63	1.00	
faglig3_4	0.82	0.71	0.73	0.70	1.00

Note: Table entries are Pearson's correlation coefficients. N = 3168.

Table 4.51: Correlation matrix. Professional development leadership items as reported by employees in the post-survey

	faglig1_1	faglig1_2	faglig1_3	faglig1_4	faglig2_1	faglig2_2	faglig2_3
faglig1_1	1.00						
faglig1_2	0.82	1.00					
faglig1_3	0.73	0.76	1.00				
faglig1_4	0.71	0.75	0.76	1.00			
faglig2_1	0.63	0.63	0.64	0.63	1.00		
faglig2_2	0.62	0.61	0.66	0.62	0.83	1.00	
faglig2_3	0.49	0.50	0.57	0.54	0.68	0.76	1.00
faglig2_4	0.62	0.61	0.61	0.61	0.70	0.71	0.67
faglig3_1	0.69	0.68	0.66	0.67	0.71	0.67	0.57
faglig3_2	0.67	0.67	0.65	0.65	0.68	0.66	0.57
faglig3_3	0.50	0.50	0.57	0.54	0.66	0.73	0.86
faglig3_4	0.62	0.60	0.62	0.61	0.66	0.67	0.64

Table 4.51 (continued)

	faglig2_4	faglig3_1	faglig3_2	faglig3_3	faglig3_4
faglig2_4	1.00				
faglig3_1	0.68	1.00			
faglig3_2	0.67	0.82	1.00		
faglig3_3	0.64	0.60	0.61	1.00	
faglig3_4	0.81	0.71	0.72	0.69	1.00

Note: Table entries are Pearson's correlation coefficients. N = 2593.

Table 4.52: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	Degrees of freedom	p-value
Leaders	Pre-survey	0.855	871.52	66	0.000
	Post-survey	0.878	819.43	66	0.000
Employees	Pre-survey	0.940	39839.53	66	0.000
	Post-survey	0.935	31144.86	66	0.000

Note: H0: variables are not intercorrelated.

For public managers' responses, a considerable amount of the inter-item correlations is fairly weak. Thus, more than a fifth of the coefficients for public managers' responses fall below the general criteria of r = 0.3. Particularly, items 1.4 and 2.4 have low inter-item correlations. At the same time, all coefficients have positive values as expected. For employee responses, on the other hand, all coefficients are strong (close to or above 0.5). This suggests that the weaker correlations for public managers' responses may be a result of the smaller sample size and not a lack of validity of the questions. The KMO values indicate that a large proportion of variation in the data may be caused by underlying variables, and therefore, a factor analysis can be conducted.

Table 4.53: Exploratory factor analysis: professional development leadership as reported by public managers in the pre-survey

Survey prompt: As a leader…	Factors		
	1	2	3
…I make an active effort to ensure a common understanding of professional quality in my unit.	.736		
…I work actively to ensure that there is coherence between professional norms and the unit's objectives.	.832		
…I try to develop the employees' professional norms towards the unit's objectives.	.744		
…I work on translating the organization's objectives to ensure that they are professionally meaningful.	.782		
…I actively contribute to ensuring that the employees are professionally updated.			.558
…I make an active effort to ensure the employees' professional development.			.769
…I prioritize resources so that employees can acquire new professional knowledge.			.834
…I support knowledge sharing in order to make our solution of the task even better.			.658
…I contribute to ensuring the professional quality of our work.		.556	
…I actively support the employees' application of professional knowledge in the task solution.		.743	
…I create opportunities to discuss professional norms.		.860	
…I make an active effort to ensure professional reflection in the work.		.748	

Note: Extraction method: principal component analysis. Three factors with an eigenvalue higher than 1 were extracted. Oblimin rotation was then used to make the factor structure clearer. Loadings < .3 are left blank. N = 200. Cronbach's alpha for items in factor 1 = .805. Cronbach's alpha for items in factor 2 = .731. Cronbach's alpha for items in factor 3 = .800.

Table 4.54: Exploratory factor analysis: professional development leadership as reported by public managers in the post-survey

| Survey prompt: As a leader…	Factors	
	1	2
…I make an active effort to ensure a common understanding of professional quality in my unit.	.564	
…I work actively to ensure that there is coherence between professional norms and the unit's objectives.	.863	
…I try to develop the employees' professional norms towards the unit's objectives.	.794	
…I work on translating the organization's objectives to ensure that they are professionally meaningful.	.821	
…I actively contribute to ensuring that the employees are professionally updated.		.811
…I make an active effort to ensure the employees' professional development.		.869
…I prioritize resources so that employees can acquire new professional knowledge.		.684
…I support knowledge sharing in order to make our solution of the task even better.	.311	.416
…I contribute to ensuring the professional quality of our work.		.554
…I actively support the employees' application of professional knowledge in the task solution.		.623
…I create opportunities to discuss professional norms.	.710	
…I make an active effort to ensure professional reflection in the work.	.399	.398

Note: Extraction method: principal component analysis. Two factors with an eigenvalue higher than 1 were extracted. Oblimin rotation was then used to make the factor structure clearer. Loadings < .3 left blank. N = 148. Cronbach's alpha for items in factor 1 = .858. Cronbach's alpha for items in factor 2 = .832.

Table 4.55: Exploratory factor analysis: professional development leadership as reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…makes an effort to ensure a common understanding of professional quality in my unit.	.824
…works actively to ensure that there is coherence between professional norms and the unit's objectives.	.846
…tries to develop the employees' professional norms towards the unit's objectives.	.848

	Factor
…works on translating the organization's objectives to ensure that they are professionally meaningful.	.821
…actively contributes to ensuring that the employees are professionally updated.	.860
…makes an active effort to ensure the employees' professional development.	.875
…prioritizes resources so that employees can acquire new professional knowledge.	.805
…supports knowledge sharing in order to make our solution of the task even better.	.833
…contributes to ensuring the professional quality of our work.	.861
…actively supports the employees' application of professional knowledge in the task solution.	.852
…creates opportunities to discuss professional norms.	.813
…makes an active effort to ensure professional reflection in the work.	.844

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3168. Cronbach's alpha = .962.

Table 4.56: Exploratory factor analysis: professional development leadership as reported by employees in the post-survey

Survey prompt: My leader…	Factor	
	1	2
…makes an effort to ensure a common understanding of professional quality in my unit.	.939	
…works actively to ensure that there is coherence between professional norms and the unit's objectives.	.969	
…tries to develop the employees' professional norms towards the unit's objectives.	.789	
…works on translating the organization's objectives to ensure that they are professionally meaningful.	.843	
…actively contributes to ensuring that the employees are professionally updated.	.339	.599
…makes an active effort to ensure the employees' professional development.		.731
…prioritizes resources so that employees can acquire new professional knowledge.		.985
…supports knowledge sharing in order to make our solution of the task even better.	.310	.614
…contributes to ensuring the professional quality of our work.	.627	.306
…actively supports the employees' application of professional knowledge in the task solution.	.598	.323
…creates opportunities to discuss professional norms.		.963

…makes an active effort to ensure the professional reflection in the work.	.332	.593

Note: Extraction method: principal component analysis. Two factors with an eigenvalue higher than 1 were extracted. Oblimin rotation was then used to make the factor structure clearer. Loadings < .3 left blank. N = 2593. Cronbach's alpha for items in factor 1 = .950. Cronbach's alpha for items in factor 2 = .947.

The four analyses do not extract the same number of factors. For pre-survey public manager responses, three factors are extracted, corresponding to the three subdimensions of professional development leadership. The factor analyses of post-survey responses for both public managers and employees extract two factors with an eigenvalue above 1. In both cases, the relation between the two factors and the different items are not clear-cut as some items have similar loadings on both dimensions. In the analysis for the employee pre-survey, only one factor was extracted, and all items showed high loadings on this factor.

Importantly, the factor solutions above have been created through strict adherence to Kaiser's criterion, i.e., only extracting factors with an eigenvalue above 1 (Kaiser, 1960). In all the conducted factor analyses, however, the factor with the highest eigenvalue explains by far the most variation in the data, whereas second and third factors only just reach an eigenvalue above 1. When the number of items is relatively large as in this case, the probability that a second factor reaches an eigenvalue above 1 increases, ceteris paribus. Thus, Kaiser's criterion may not be an appropriate criterion by itself for selecting the proper number of factors to extract (Zwick, 1982).

A common alternative to Kaiser's criterion is the scree test (Braeken & van Assen, 2017). Scree plots of the eigenvalues in all four analyses (not displayed) show that only one factor lies above the steepest point of the graph, suggesting that the included items measure only one major latent dimension (Cattell, 1966). Furthermore, all loadings are very high (above .8) in the analysis of employees in the pre-survey where only one factor was extracted, whereas the dimensions are less clear in the other three factor analyses. Considering these arguments, the factor analysis suggests that all items can be used in a reflective index.

Figure 4.21: Distribution of professional development leadership as reported by public managers in the pre-survey
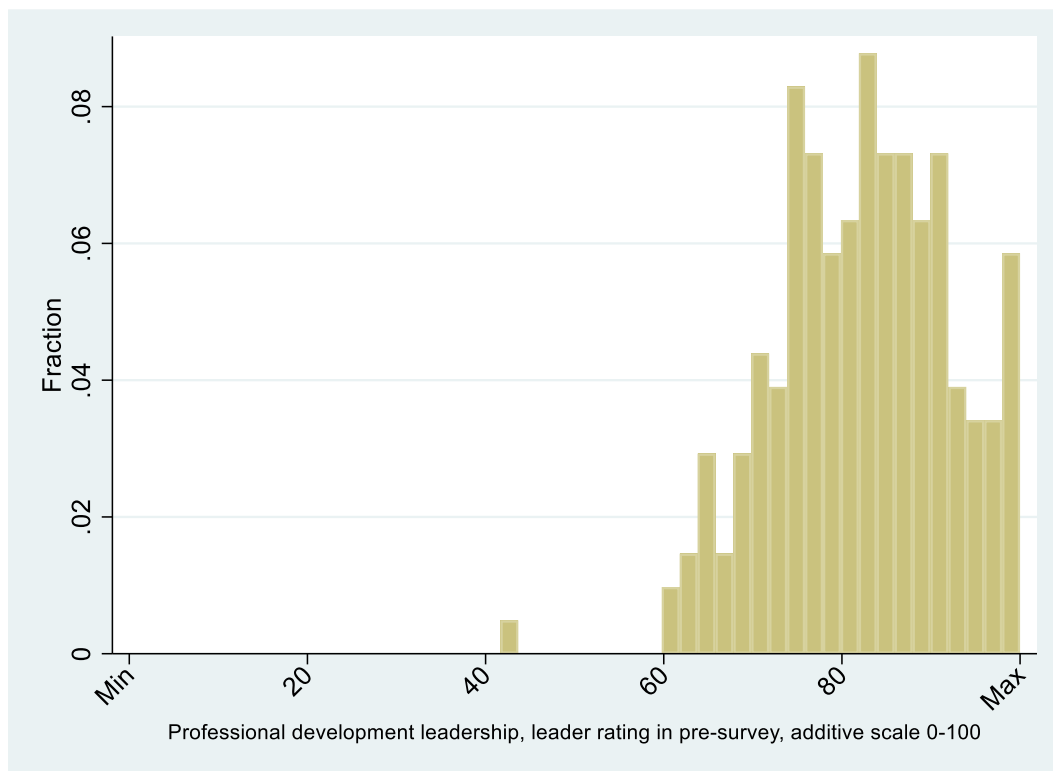
Note: N = 205. Mean = 82.66, std. dev. = 10.19, min. = 41.67, max. = 100, skewness = -.38, kurtosis = 3.26. If the respondents had missing values on one to four items, the missing values were replaced with the mean value of the items they answered. Respondents with less than eight items answered were excluded from the analysis.

Figure 4.22: Distribution of professional development leadership as reported by public managers in the post-survey
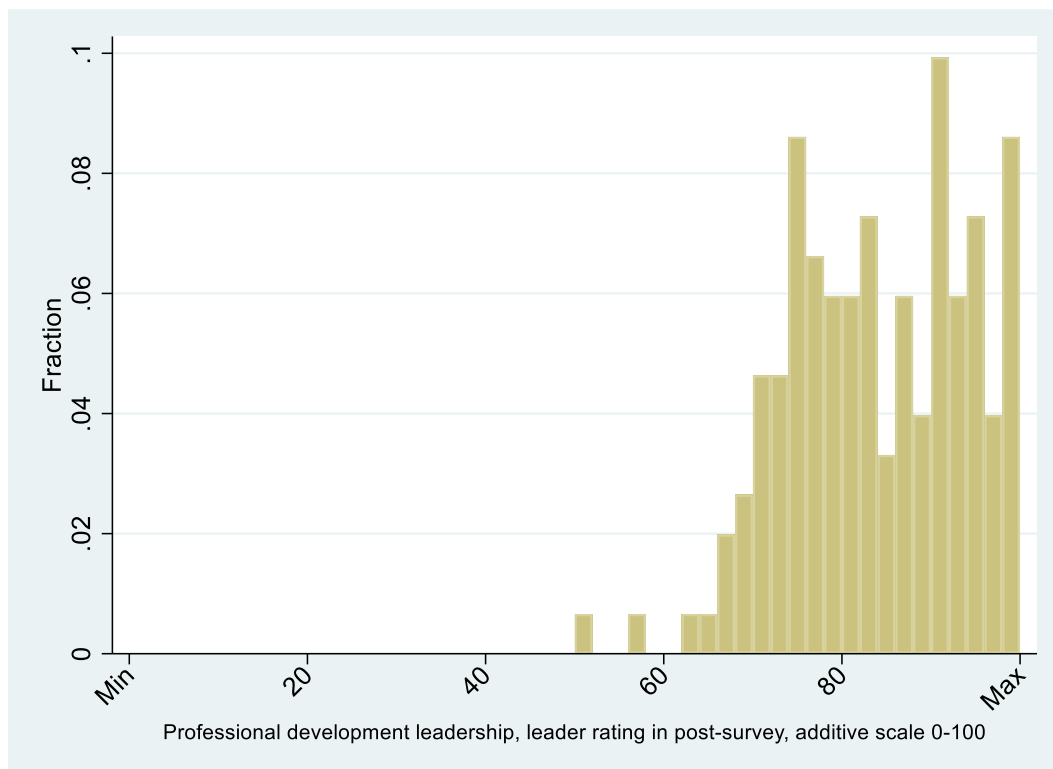
Note: N = 151. Mean = 84.32, std. dev. = 10.50, min. = 50, max. = 100, skewness = -.34, kurtosis = 2.59. If the respondents had missing values on one to four items, the missing values were replaced with the mean value of the items they answered. Respondents with less than eight items answered were excluded from the analysis.

Figure 4.23: Distribution of professional development leadership as reported by employees in the pre-survey

Professional development leadership, employee rating in pre-survey, additive scale 0-100
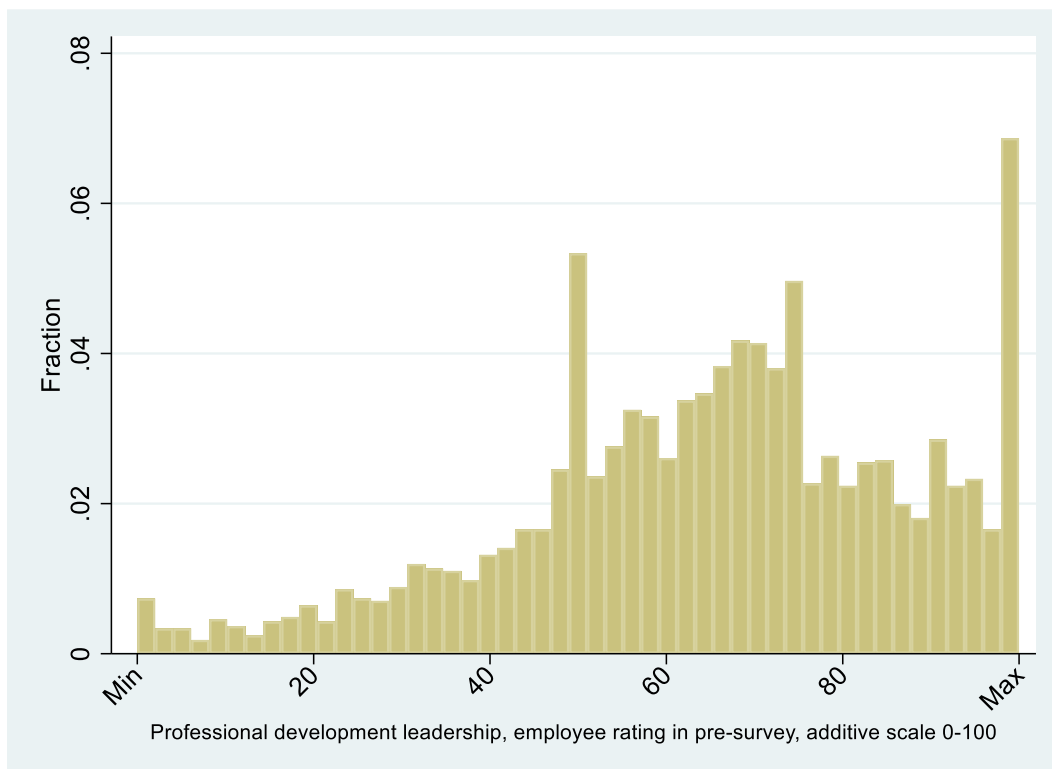
Note: N = 3261. Mean = 65.22, std. dev. = 22.77, min. = 0, max. = 100, skewness = -.52, kurtosis = 2.94. If the respondents had missing values on one to four items, the missing values were replaced with the mean value of the items they answered. Respondents with less than eight items answered were excluded from the analysis.

Figure 4.24: Distribution of professional development leadership as reported by employees in the post-survey
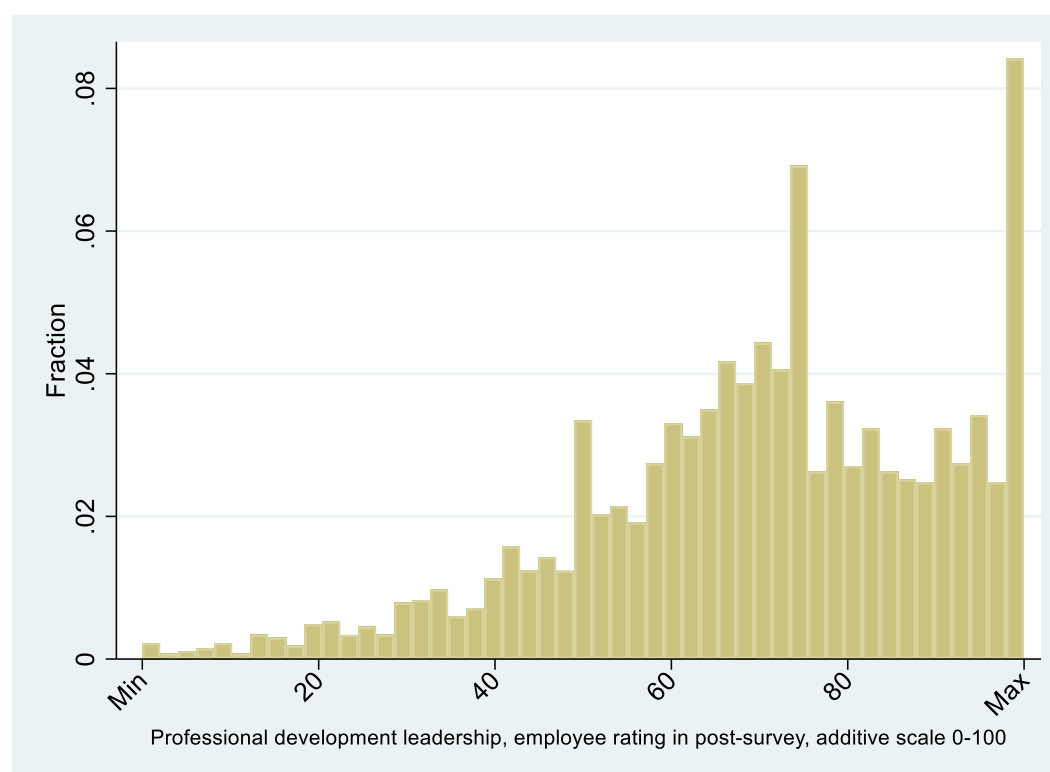
Note: N = 2661. Mean = 70.43, std. dev. = 20.90, min. = 0, max. = 100, skewness = -.64, kurtosis = 3.15. If the respondents had missing values on one to four items, the missing values were replaced with the mean value of the items they answered. Respondents with less than eight items answered were excluded from the analysis.

Across public managers and employees, all distributions are somewhat left-skewed. This suggests that both managers and employees perceive a high degree of professional development leadership in the behavior of the leaders. However, the mean is lower for the employees, indicating that they think their managers enact professional development leadership to a lower degree than the public managers think themselves. Furthermore, the standard deviation is higher for employees as their responses are more dispersed across the full scale than the leader responses.

4.3.1 Align

Table 4.57: Items measuring professional development leadership (align)

	Leaders: As a leader… / *Som leder…*	**Source**
faglig1_1	...I make an active effort to ensure a common understanding of professional quality in my unit. *…gør jeg en aktiv indsats for at sikre en fælles forståelse af faglig kvalitet i min enhed.*	Lund, 2021

faglig1_2	...I work actively to ensure that there is coherence between professional norms and the unit's objectives. *...arbejder jeg aktivt for, at der er sammenhæng mellem faglige normer og enhedens målsætninger.*	Lund, 2021
faglig1_3	...I try to develop the employees' professional norms towards the unit's objectives. *...forsøger jeg at udvikle medarbejdernes faglige normer i retningen af organisationens målsætninger.*	Lund, 2021
faglig1_4	...I work on translating the organization's objectives to ensure that they are professionally meaningful. *...arbejder jeg med at oversætte organisationens målsætninger, så de er fagligt meningsfulde.*	Lund, 2021
Employees: My leader… /*Min leder…*		
faglig1_1	…makes an effort to ensure a common understanding of professional quality in my unit. *…gør en aktiv indsats for at sikre en fælles forståelse af faglig kvalitet i min enhed.*	Lund, 2021
faglig1_2	…works actively to ensure that there is coherence between professional norms and the unit's objectives. *…arbejder aktivt for, at der er sammenhæng mellem faglige normer og enhedens målsætninger.*	Lund, 2021
faglig1_3	…tries to develop the employees' professional norms towards the unit's objectives. *…forsøger at udvikle medarbejdernes faglige normer i retningen af organisationens målsætninger.*	Lund, 2021
faglig1_4	…works on translating the organization's objectives to ensure that they are professionally meaningful. *…arbejder med at oversætte organisationens målsætninger, så de er fagligt meningsfulde.*	Lund, 2021

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.58: Test of assumptions for factor analysis

| | | Kaiser-Meyer-Olkin Measure of Sampling Adequacy | Bartlett's Test of Sphericity | | |
			Chi-square	*Degrees of freedom*	*p-value*
Leaders	Pre-survey	0.765	270.153	6	0.000
	Post-survey	0.768	219.021	6	0.000
Employees	Pre-survey	0.842	10417.912	6	0.000
	Post-survey	0.841	8325.156	6	0.000

Note: H0: variables are not intercorrelated.

The values of the KMO tests are above the satisfactory level of .6, which means the data are adequate for factor analysis. Inter-item correlations can be viewed in tables 4.48–4.51.

Table 4.59: Exploratory factor analysis: professional development leadership (align) as reported by public managers in the pre-survey

Survey prompt: As a leader…	Loadings
…I make an active effort to ensure a common understanding of professional quality in my unit.	.760
…I work actively to ensure that there is coherence between professional norms and the unit's objectives.	.859
…I try to develop the employees' professional norms towards the unit's objectives.	.827
…I work on translating the organization's objectives to ensure that they are professionally meaningful.	.736

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 204. Cronbach's alpha = .805.

Table 4.60: Exploratory factor analysis: professional development leadership (align) as reported by public managers in the post-survey

Survey prompt: As a leader…	Loadings
…I make an active effort to ensure a common understanding of professional quality in my unit.	.757
…I work actively to ensure that there is coherence between professional norms and the unit's objectives.	.886
…I try to develop the employees' professional norms towards the unit's objectives.	.825
…I work on translating the organization's objectives to ensure that they are professionally meaningful.	.758

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 150. Cronbach's alpha = .820.

Table 4.61: Exploratory factor analysis: professional development leadership (align) as reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…makes an effort to ensure a common understanding of professional quality in my unit.	.900
…works actively to ensure that there is coherence between professional norms and the unit's objectives.	.931
…tries to develop the employees' professional norms towards the unit's objectives.	.900
…works on translating the organization's objectives to ensure that they are professionally meaningful.	.893

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3245. Cronbach's alpha = .927.

Table 4.62: Exploratory factor analysis: professional development leadership (align) as reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…makes an effort to ensure a common understanding of professional quality in my unit.	.903
…works actively to ensure that there is coherence between professional norms and the unit's objectives.	.922
…tries to develop the employees' professional norms towards the unit's objectives.	.899
…works on translating the organization's objectives to ensure that they are professionally meaningful.	.891

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2652. Cronbach's alpha = .925.

All loadings are high, especially for employee responses. This suggests that all items capture the same underlying concept and that they can be used to construct a reflective index. All alpha values are higher than .8, which shows good internal reliability.

Figure 4.25: Distribution of professional development leadership (align) as reported by public managers in the pre-survey
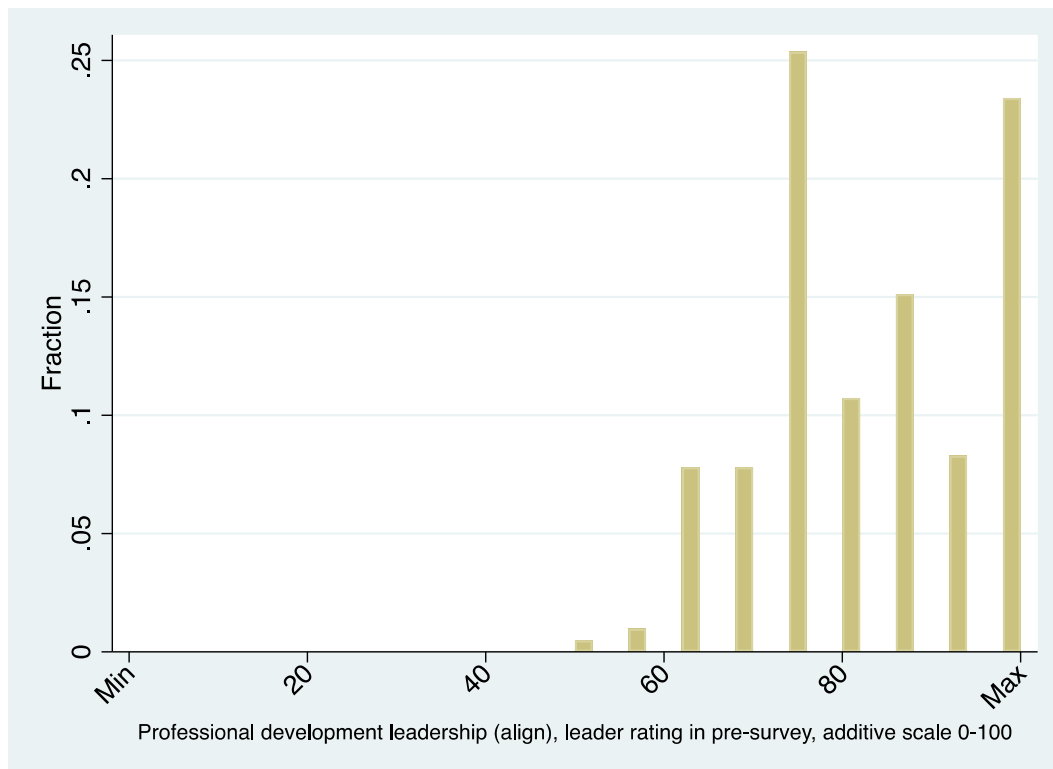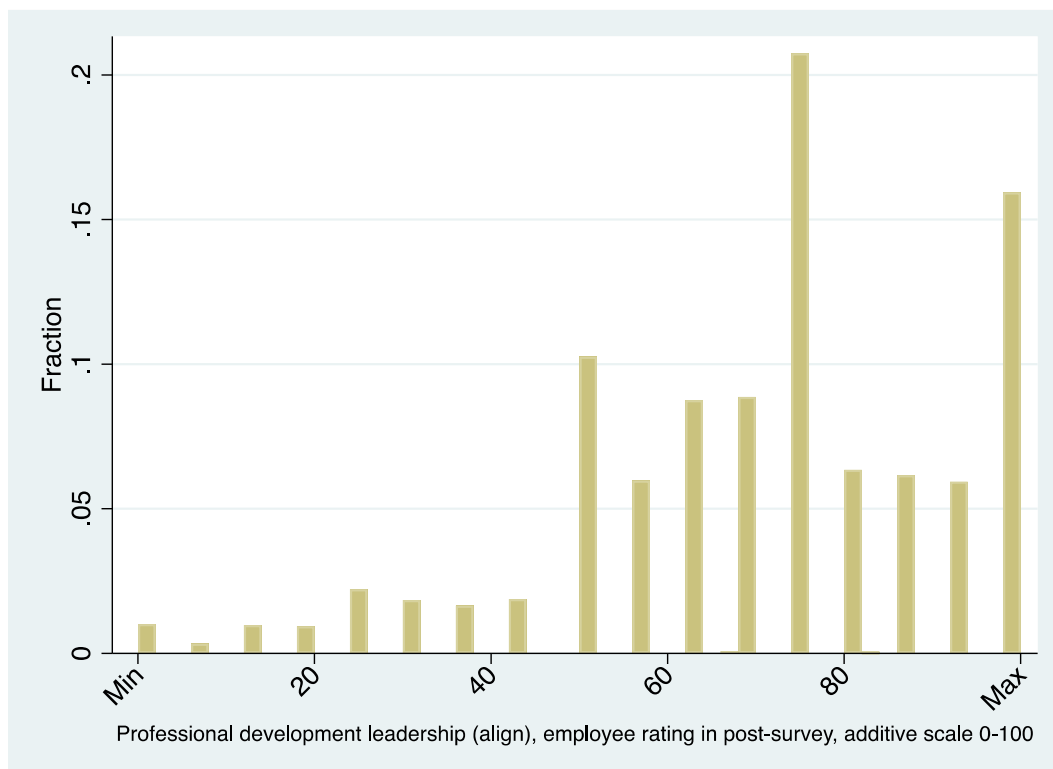

Note: N = 205. Mean = 83.20, std. dev. = 12.59, min. = 50, max. = 100, skewness = -.110, kurtosis = 1.996. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.26: Distribution of professional development leadership (align) as reported by public managers in the post-survey
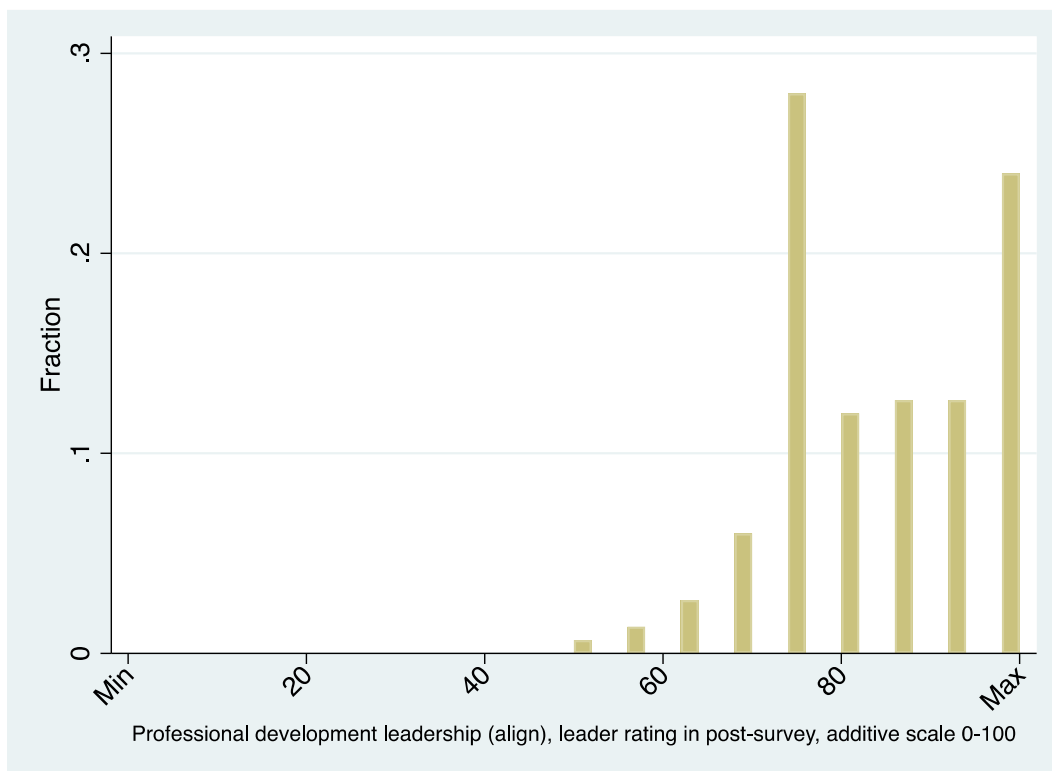
Note: N = 150. Mean = 84.58, std. dev. = 11.98, min. = 50, max. = 100, skewness = -.220, kurtosis = 2.22. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.27: Distribution of professional development leadership (align) as reported by employees in the pre-survey
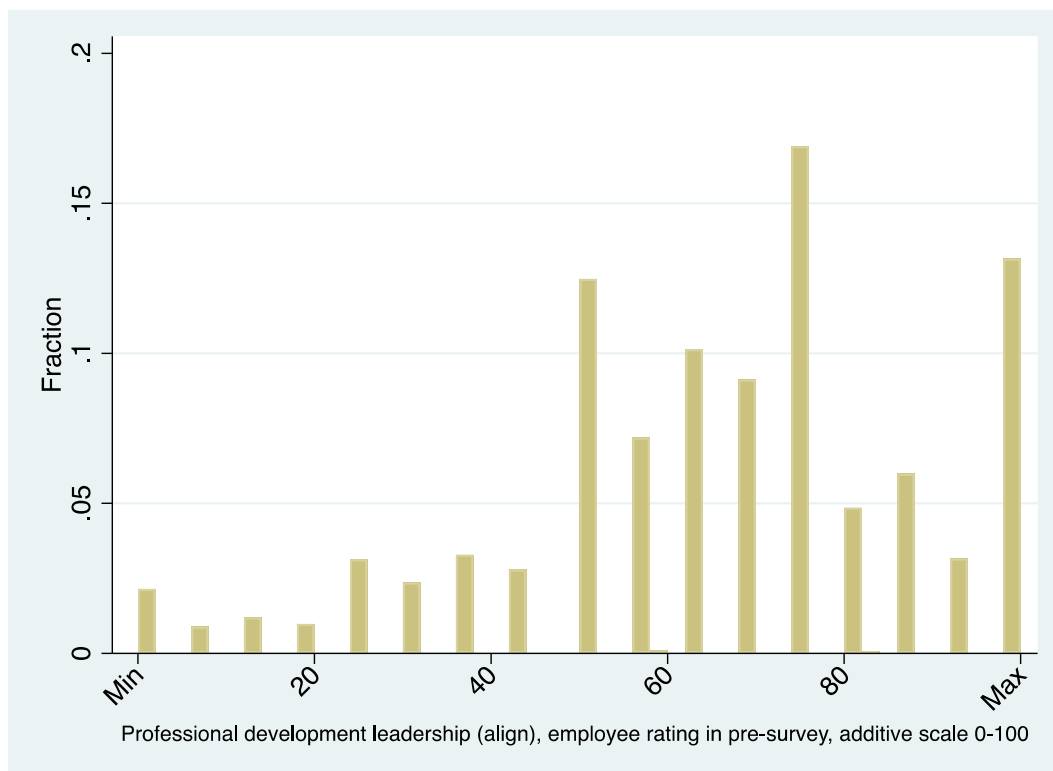
Note: N = 3253. Mean = 65.38, std. dev. = 23.95, min. = 0, max. = 100, skewness = -.58, kurtosis = 3.10. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.28: Distribution of professional development leadership (align) as reported by employees in the post-survey

Note: N = 2660. Mean = 70.67, std. dev. = 22.13, min. = 0, max. = 100, skewness = -.73, kurtosis = 3.44. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

All distributions are slightly left-skewed with means above the middle of the scale, suggesting that both public managers and employees think that the managers enact professional development leadership by attempting to align organizational goals and professional norms. However, just like for the overall measure for professional development leadership, the mean is higher for public managers' responses than for employee responses.

4.3.2   Develop

Table 4.63: Items measuring professional development leadership (develop)

	Leaders: As a leader… / *Som leder…*	**Source**
faglig2_1	…I actively contribute to ensuring that the employees are professionally updated. *…bidrager jeg aktivt til, at medarbejderne er fagligt opdaterede.*	Lund, 2021
faglig2_2	…I make an active effort to ensure the employees' professional development.	Lund, 2021

	…gør jeg en aktiv indsats for at sikre medarbejdernes faglige udvikling.	
faglig2_3	...I prioritize resources so that employees can acquire new professional knowledge. *…prioriterer jeg ressourcer til, at medarbejderne kan tilegne sig ny faglig viden.*	Lund, 2021
faglig2_4	...I support our knowledge sharing in order to make our solution of the task even better. *…understøtter jeg videndeling med henblik på at gøre vores løsning af opgaven endnu bedre.*	Lund, 2021
	Employees: My leader… /*Min leder…*	
faglig2_1	…actively contributes to ensuring that the employees are professionally updated. *…bidrager aktivt til, at medarbejderne er fagligt opdaterede.*	Lund, 2021
faglig2_2	…makes an active effort to ensure the employees' professional development. *…gør en aktiv indsats for at sikre medarbejdernes faglige udvikling.*	Lund, 2021
faglig2_3	…prioritizes resources so that employees can acquire new professional knowledge. *…prioriterer ressourcer til, at medarbejderne kan tilegne sig ny faglig viden.*	Lund, 2021
faglig2_4	…supports knowledge sharing in order to make our solution of the task even better. *…understøtter videndeling med henblik på at gøre vores løsning af opgaven endnu bedre.*	Lund, 2021

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.64: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Leaders	Pre-survey	0.751	165.713	6	0.000
	Post-survey	0.698	157.254	6	0.000
Employees	Pre-survey	0.821	9786.418	6	0.000
	Post-survey	0.823	7646.163	6	0.000

Note: H0: variables are not intercorrelated.

KMO values above .6 indicate that a satisfactory proportion of variation in the data may be caused by underlying variables, and the Bartlett's test shows that the inter-item correlations are significantly different from an uncorrelated matrix. The inter-item correlations can be viewed in tables 4.48–4.51.

Table 4.65: Exploratory factor analysis: professional development leadership (develop) as reported by public managers in the pre-survey

Survey prompt: As a leader…	Loadings
…I actively contribute to ensuring that the employees are professionally updated.	.704
…I make an active effort to ensure the employees' professional development.	.816
…I prioritize resources so that employees can acquire new professional knowledge.	.753
…I support knowledge sharing in order to make our solution of the task even better.	.712

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 203. Cronbach's alpha = .731.

Table 4.66: Exploratory factor analysis: professional development leadership (develop) as reported by public managers in the post-survey

Survey prompt: As a leader…	Loadings
…I actively contribute to ensuring that the employees are professionally updated.	.777
…I make an active effort to ensure the employees' professional development.	.847
…I prioritize resources so that employees can acquire new professional knowledge.	.732
…I support knowledge sharing in order to make our solution of the task even better.	.670

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 151. Cronbach's alpha = .747.

Table 4.67: Exploratory factor analysis: professional development leadership (develop) as reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…actively contributes to ensuring that the employees are professionally updated.	.905
…makes an active effort to ensure the employees' professional development.	.933
…prioritizes resources so that employees can acquire new professional knowledge.	.879
…supports knowledge sharing in order to make our solution of the task even better.	.860

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3255. Cronbach's alpha = .916.

Table 4.68: Exploratory factor analysis: professional development leadership (develop) as reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…actively contributes to ensuring that the employees are professionally updated.	.901
…makes an active effort to ensure the employees' professional development.	.929
…prioritizes resources so that employees can acquire new professional knowledge.	.870
…supports knowledge sharing in order to make our solution of the task even better.	.860

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2645. Cronbach's alpha = .912.

Across leaders and employees, all loadings are satisfactory for index construction. The loadings for employee responses are somewhat higher than for public manager responses. The alpha values show good internal reliability.

Figure 4.29: Distribution of professional development leaderships (develop) as reported by public managers in the pre-survey
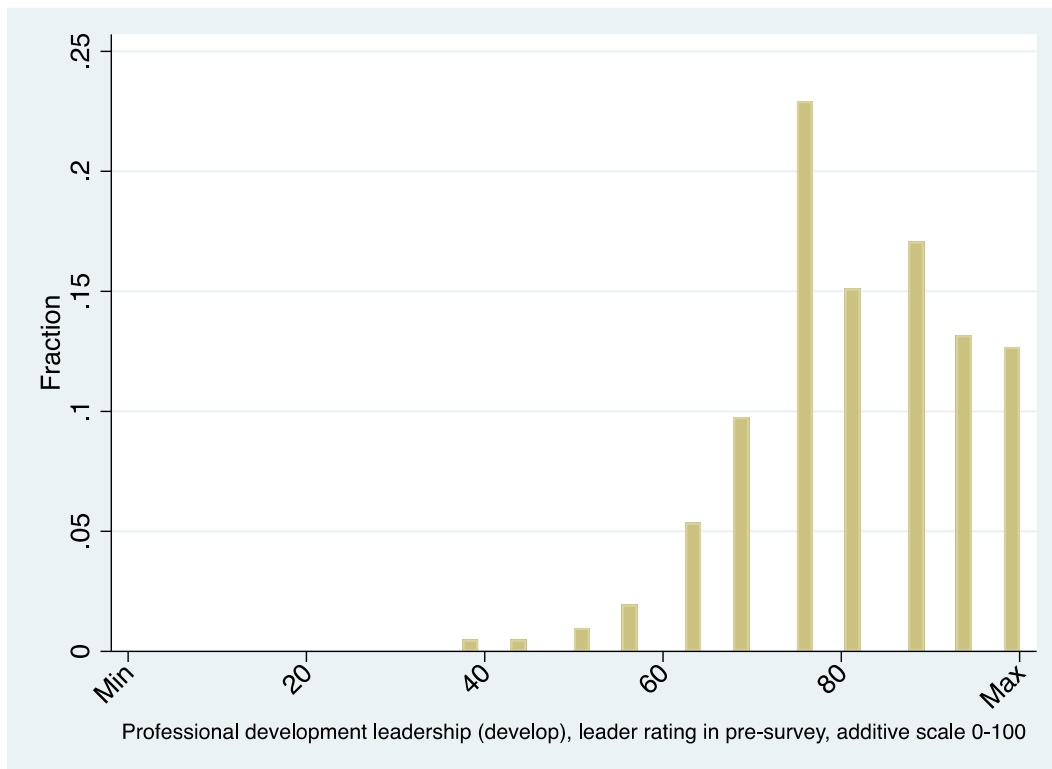
Note: N = 205. Mean = 81.49, std. dev. = 12.39, min. = 37.5, max. = 100, skewness = -.44, kurtosis = 3.16. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.30: Distribution of professional development leaderships (develop) as reported by public managers in the post-survey
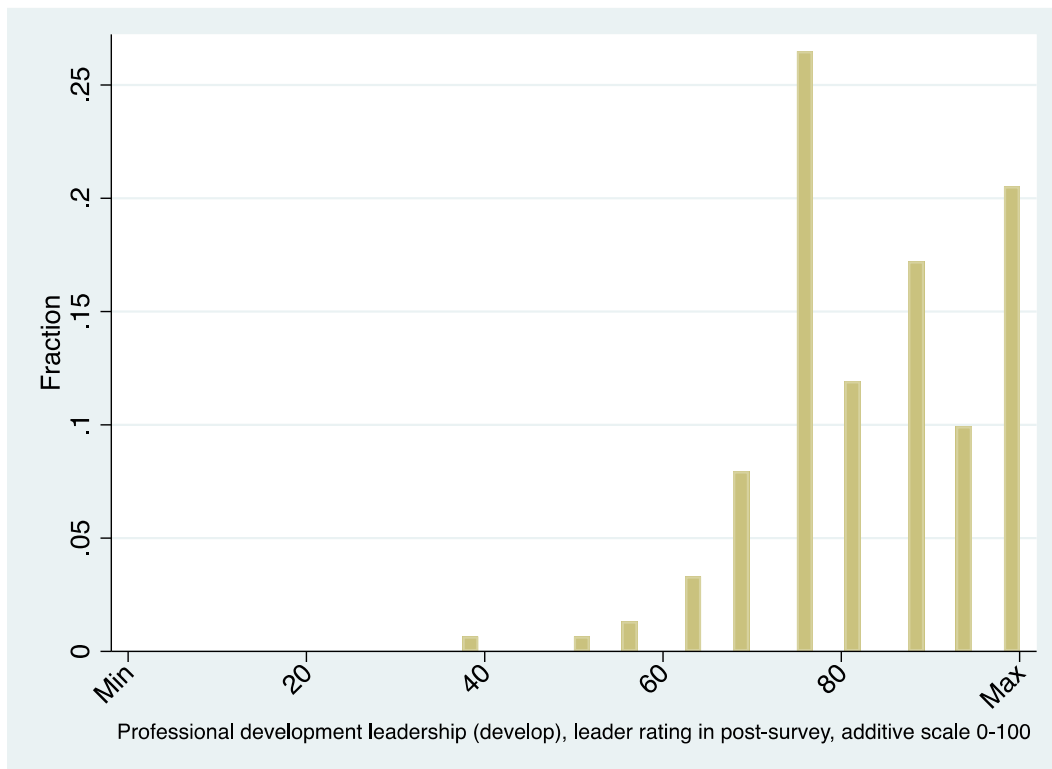
Note: N = 151. Mean = 83.31, std. dev. = 12.36, min. = 37.5, max. = 100, skewness = -.41, kurtosis = 3.15. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.31: Distribution of professional development leaderships (develop) as reported by employees in the pre-survey
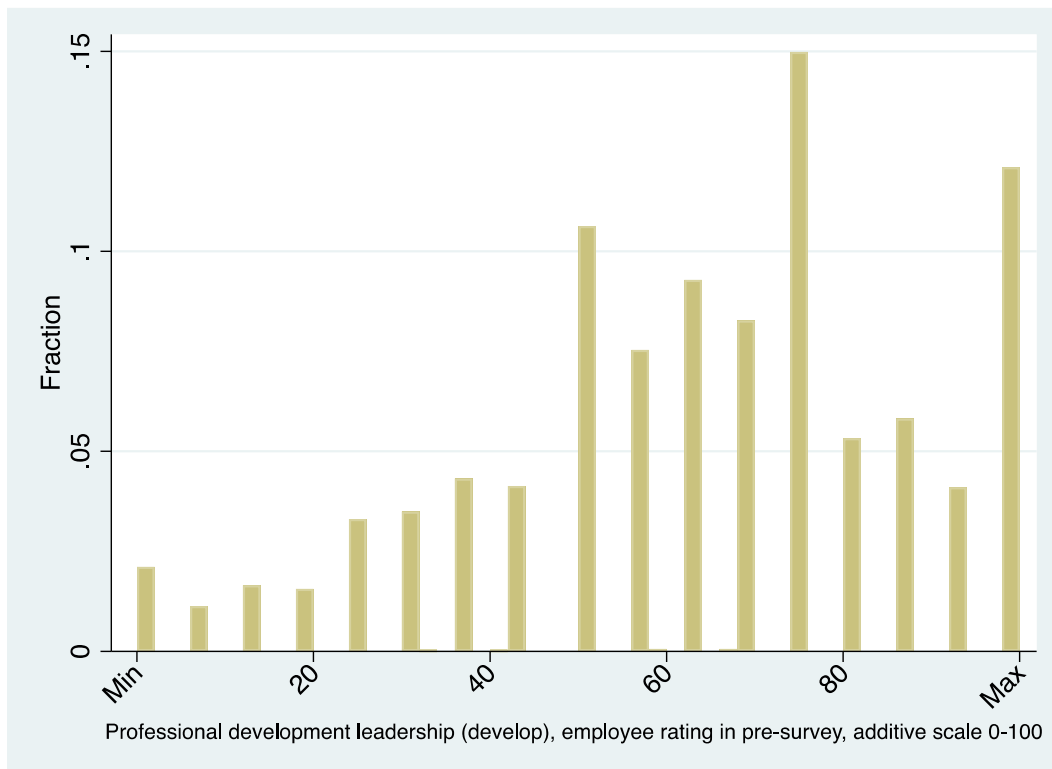
Note: N = 3263. Mean = 63.69, std. dev. = 24.96, min. = 0, max. = 100, skewness = -.49, kurtosis = 2.74. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.32: Distribution of professional development leaderships (develop) as reported by employees in the post-survey

Professional development leadership (develop), employee rating in post-survey, additive scale 0-100
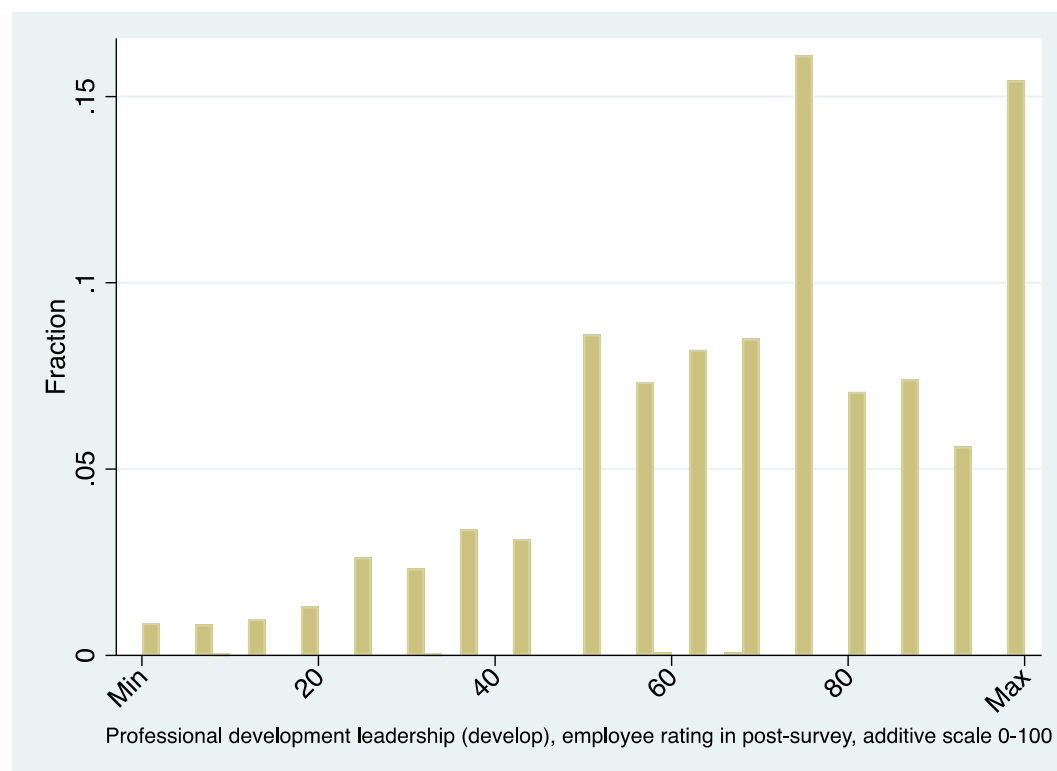
Note: N = 2657. Mean = 68.98, std. dev. = 23.44, min. = 0, max. = 100, skewness = -.63, kurtosis = 2.96. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

All distributions are somewhat left-skewed with a spike around 75 on the scale. The mean is lower for employee responses than public managers' responses. Thus, according to the employees, the public managers enact professional development leadership through attempts to develop professional knowledge to a lower degree than in the managers' own perception.

4.3.3 Activate

Table 4.69: Items measuring professional development leadership (activate)

	Leaders: As a leader… / *Som leder…*	**Source**
faglig3_1	…I contribute to ensuring the professional quality of our work. *…er jeg med til at sikre den faglige kvalitet af vores arbejde.*	Lund, 2021
faglig3_2	…I actively support the employees' application of professional knowledge in the task solution. *…understøtter jeg aktivt, at medarbejderne anvender faglig viden i opgaveløsningen.*	Lund, 2021

faglig3_3	...I create opportunities to discuss professional norms. *…skaber jeg anledninger til at drøfte faglige normer.*	Lund, 2021
faglig3_4	...I make an active effort to ensure professional reflection in the work. *…gør jeg en aktiv indsats for at sikre den faglige refleksion i arbejdet.*	Lund, 2021
	Employees: My leader… /*Min leder…*	
faglig3_1	…contributes to ensuring the professional quality of our work. *…er med til at sikre den faglige kvalitet af vores arbejde.*	Lund, 2021
faglig3_2	…actively supports the employees' application of professional knowledge in the task solution. *…understøtter aktivt, at medarbejderne anvender faglig viden i opgaveløsningen.*	Lund, 2021
faglig3_3	…creates opportunities to discuss professional norms. *…skaber anledninger til at drøfte faglige normer*.	Lund, 2021
faglig3_4	…makes an active effort to ensure professional reflection in the work. *…gør en aktiv indsats for at sikre den faglige refleksion i arbejdet.*	Lund, 2021

Note: The replies of both leaders and employees were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.70: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Leaders	Pre-survey	0.735	254.05	6	0.000
	Post-survey	0.764	207.37	6	0.000
Employees	Pre-survey	0.811	8742.25	6	0.000
	Post-survey	0.808	6926.06	6	0.000

Note: H0: variables are not intercorrelated.

The KMO values indicate that a sufficient proportion of variation might be explained by underlying variables, which means that factor analyses can be conducted. The inter-item correlations can be viewed in tables 4.48–4.51.

Table 4.71: Exploratory factor analysis: professional development leadership (activate) as reported by public managers in the pre-survey

Survey prompt: As a leader…	Loadings
…I contribute to ensuring the professional quality of our work.	.747
…I actively support the employees' application of professional knowledge in the task solution.	.816
…I create opportunities to discuss professional norms.	.791
…I make an active effort to ensure professional reflection in the work.	.804

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 200. Cronbach's alpha = .800.

Table 4.72: Exploratory factor analysis: professional development leadership (activate) as reported by public managers in the post-survey

Survey prompt: As a leader…	Loadings
…I contribute to ensuring the professional quality of our work.	.768
…I actively support the employees' application of professional knowledge in the task solution.	.834
…I create opportunities to discuss professional norms.	.789
…I make an active effort to ensure professional reflection in the work.	.827

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 149. Cronbach's alpha = .817.

Table 4.73: Exploratory factor analysis: professional development leadership (activate) as reported by employees in the pre-survey

Survey prompt: My leader…	Loadings
…contributes to ensuring the professional quality of our work.	.898
…actively supports the employees' application of professional knowledge in the task solution.	.908
…creates opportunities to discuss professional norms.	.832
…makes an active effort to ensure professional reflection in the work.	.889

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3199. Cronbach's alpha = .903.

Table 4.74: Exploratory factor analysis: professional development leadership (activate) as reported by employees in the post-survey

Survey prompt: My leader…	Loadings
…contributes to ensuring the professional quality of our work.	.896
…actively supports the employees' application of professional knowledge in the task solution.	.900
…creates opportunities to discuss professional norms.	.820
…makes an active effort to ensure professional reflection in the work.	.891

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2621. Cronbach's alpha = .898.

Across public managers and employees, all loadings are high. This indicates that all questions reflect the same underlying concept. Alpha values higher than .8 show good internal reliability.

Figure 4.33: Distribution of professional development leaderships (activate) as reported by public managers in the pre-survey
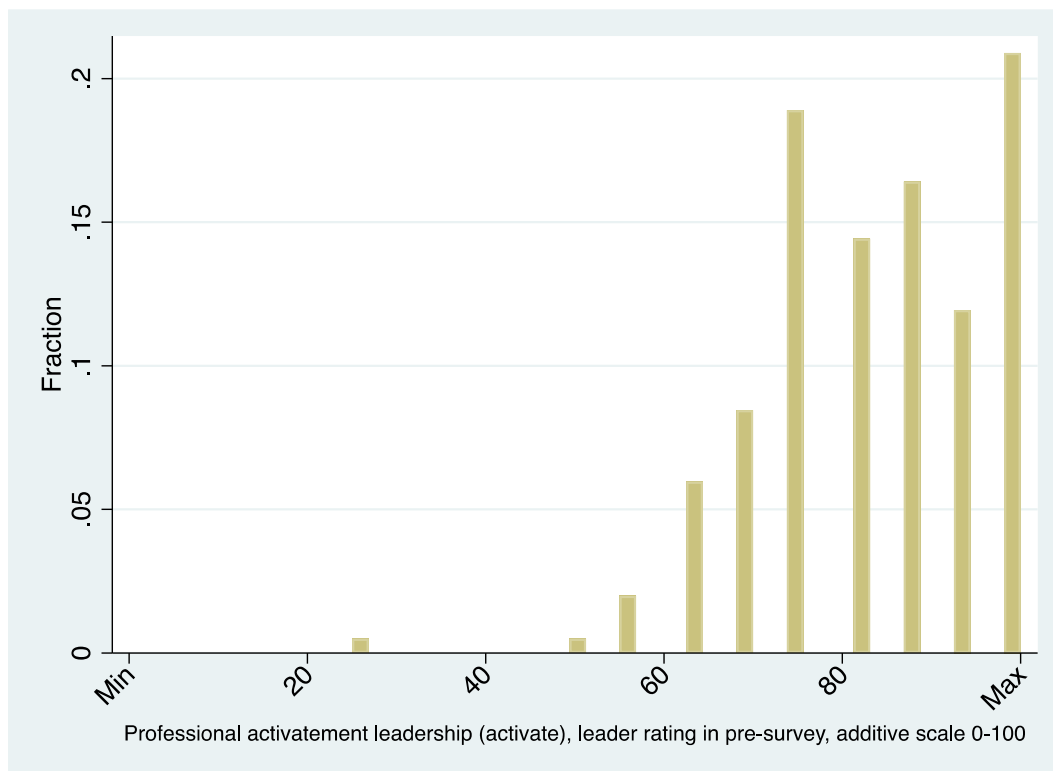
Note: N = 201. Mean = 83.40, std. dev. = 13.02, min. = 25, max. = 100, skewness = -.64, kurtosis = 3.81. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.34: Distribution of professional development leaderships (activate) as reported by public managers in the post-survey
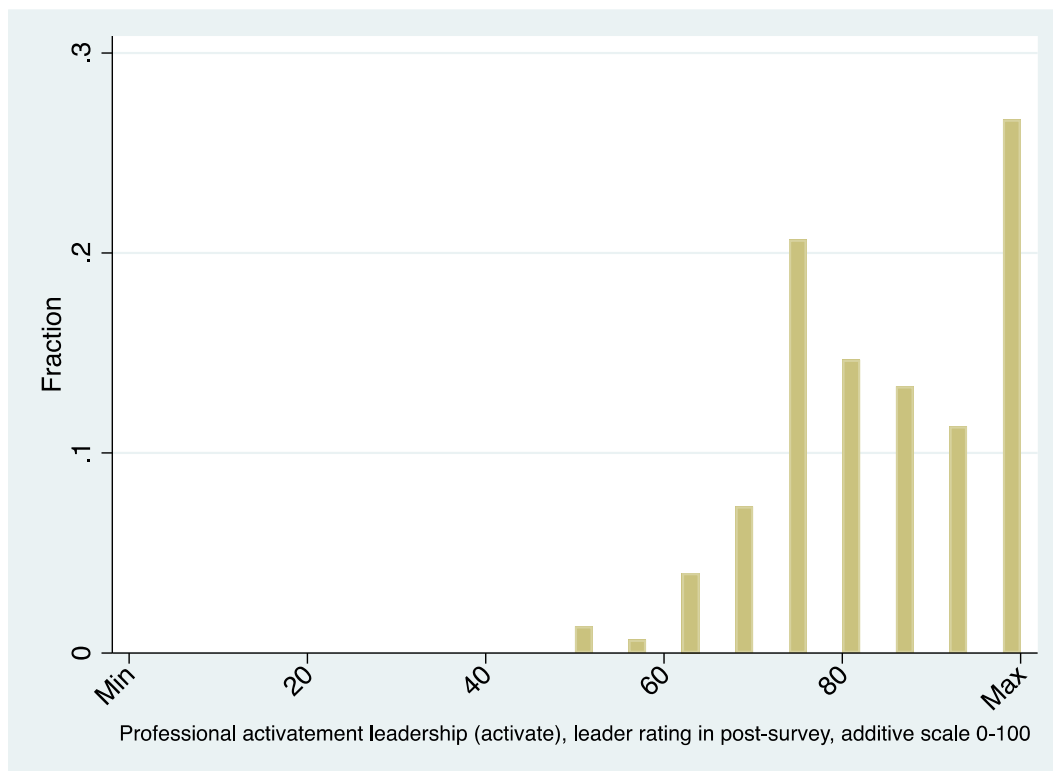
Note: N = 150. Mean = 84.96, std. dev. = 12.44, min. = 50, max. = 100, skewness = -.38, kurtosis = 2.37. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.35: Distribution of professional development leaderships (activate) as reported by employees in the pre-survey
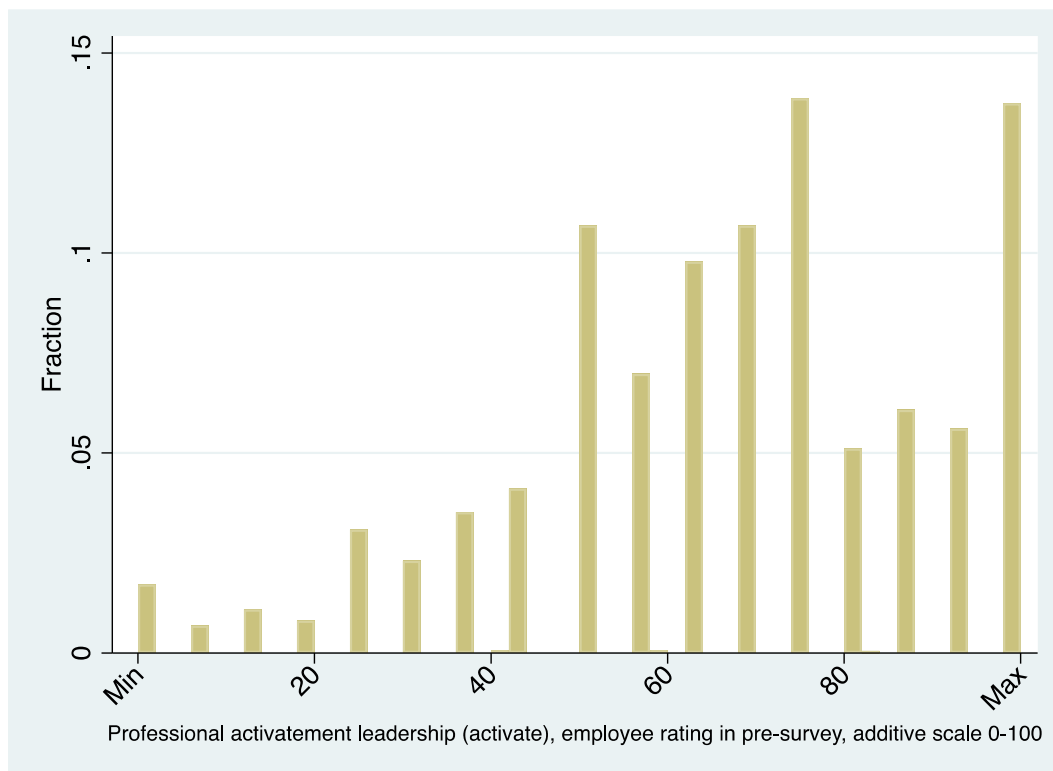
Note: N = 3210. Mean = 66.62, std. dev. = 23.80, min. = 0, max. = 100, skewness = -55, kurtosis = 2.98. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.36: Distribution of professional development leaderships (activate) as reported by employees in the post-survey
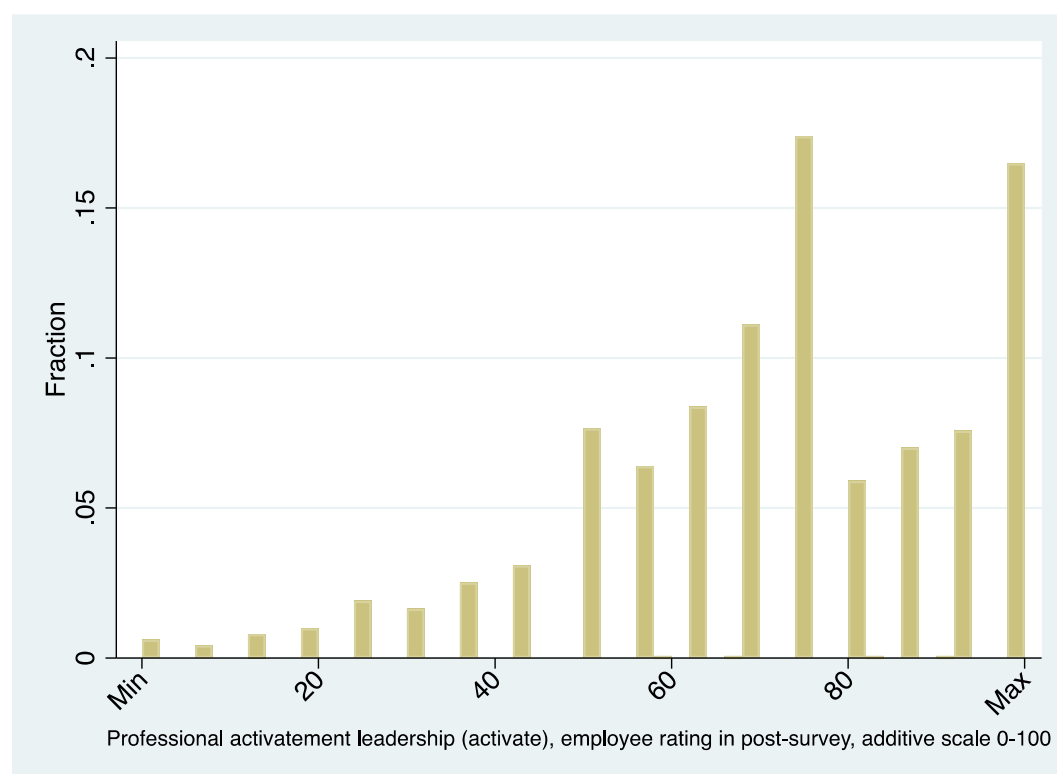
Note: N = 2627. Mean = 71.56, std. dev. = 21.91, min. = 0, max. = 100, skewness = -.69, kurtosis = 3.24. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Across public managers and employees, all distributions are left-skewed with a spike around 75 and another at the upper limit of the scale. All means are substantially above the midpoint of the scale. This suggests that according to both public managers and employees, the managers enact professional development leadership through attempts to activate professional norms and knowledge in practice. However, the mean is higher for manager responses than for employee responses, meaning that public managers find this leadership behavior more prevalent among themselves than the employees do.

4.4   Leadership Identity

Leadership identity can increase leadership effectiveness (Day & Sin, 2011). Leader–follower identity processes play an important role in determining how "leaders and followers will influence" and "be influenced" (Epitropaki et al., 2017: 104). Leadership identity is often conceptualized and measured in terms of more or less leadership identity (Hiller, 2006; Kwok et al., 2018). However, social desirability bias may incline public managers to perceive themselves as leaders to a high degree. Therefore, we measure leadership identity by letting the respondents prioritize between their occupational identity and their leadership identity as proposed by Grøn et al. (2020). The public sector is characterized by strong occupations, and thus, leadership identity in the public sector can be meaningfully contrasted by their occupational identity (Grøn et al., 2020).

Public managers were asked to assess on a Likert scale from 0 to 10 which of the opposing identities they asses as most important: occupational identity or leader identity.

Table 4.75: Question measuring leadership identity

	Leaders	Source
Identitet	På en skala fra 0 til 10 hvordan vil du da vurdere din faglige identitet i forhold til din identitet som leder? Du skal se 0 som udtryk for, at din faglige identitet er klart vigtigst, 5 udtrykker, at din faglige identitet og din identitet som leder er lige vigtige, og 10 er udtryk for, at din identitet som leder er klart vigtigst. *On a scale from 0 to 10, how would you assess your occupational identity in relation to your identity as a leader? (0 = "My occupational identity is clearly most important", 5 = "My occupational identity and my leader identity are equally important", and 10 = "My leader identity is clearly most important").*	(Grøn et al., 2020)

Note: Question only appeared for leaders.

Figure 4.37: Occupational identity vs. leadership identity, public manager rating in pre-survey
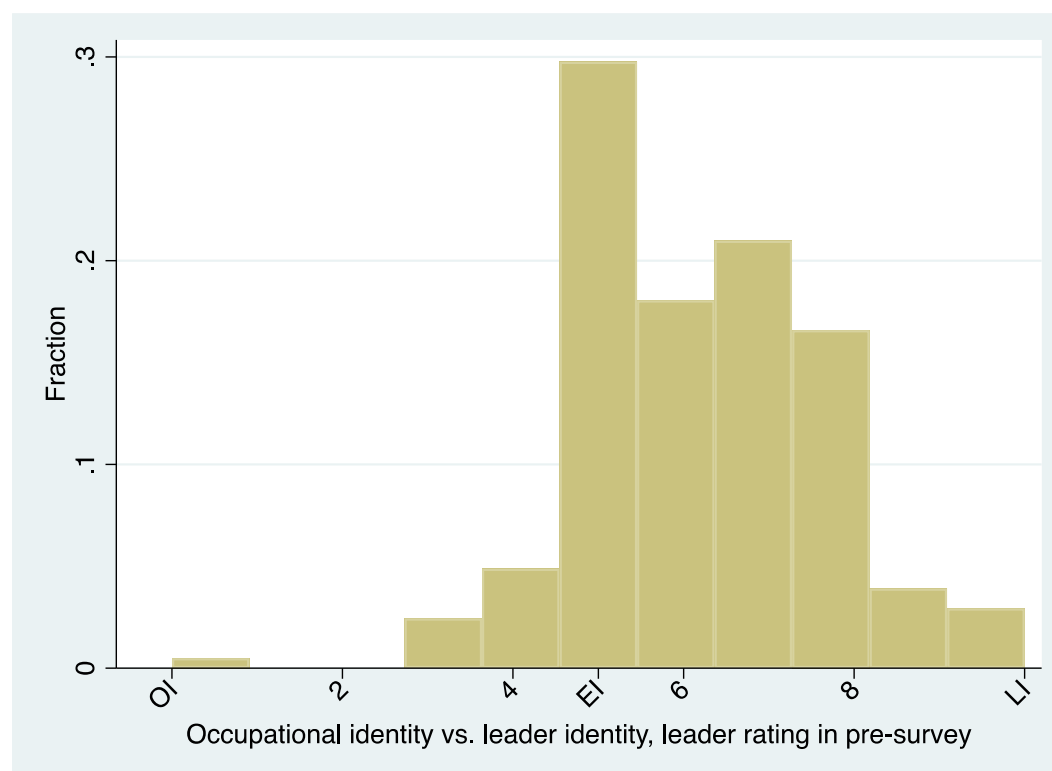
Note: N = 205, mean = 6.28, std. dev. = 1.59, min. = 0, max. = 10, skewness = -.01, kurtosis = 3.48. OI = "Occupational identity clearly most important," EI = "Equally important," LI = "Leader identity clearly most important."

Figure 4.38: Occupational identity vs. leadership identity, public manager rating in post-survey
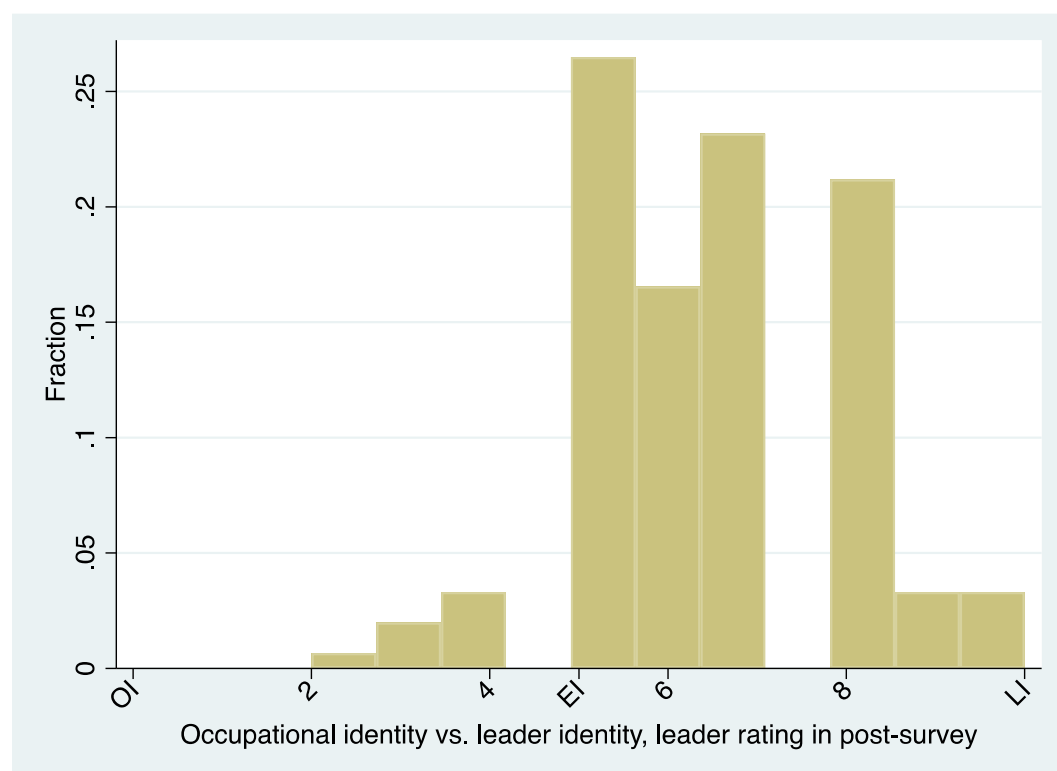
Note: N = 151, mean = 6.47, std. dev. = 1.54, min. = 2, max. = 10, skewness = .002, kurtosis = 2.8. OI = "Occupational identity clearly most important," EI = "Equally important," LI = "Leader identity clearly most important."

In both survey waves, public manager responses approach a normal distribution with a peak in the middle (at the value 5). A mean slightly above the midpoint of the scale indicates that leaders find their leader identity more important than their occupational identity.

4.5   Leadership Approach Priority

Public managers may use several different approaches in their leadership, and leadership research has investigated which leadership behaviors are associated with organizational outcomes such as organizational performance (e.g., Jacobsen et al, 2021). Social desirability potentially affects leaders' responses to questions regarding their behaviors related to their leadership behavior. We therefore measure public managers' priorities between different leadership approaches.

Public managers were asked to assess on a Likert scale from 0 to 10 which of the following leadership approaches they asses as most important: transformational leadership, transactional leadership, and professional development leadership. The managers were asked to assess the importance of the approaches in a pairwise comparison.

Table 4.76: Items measuring leadership approach priority

	Leaders: Please indicate which of these two leadership tasks is most important to you on a scale from 0 to 10. It is most important to make sure… *Ledere: Angiv på en skala fra 0–10 hvilken af disse to ledelsesopgaver, der er vigtigst for dig. Det er vigtigst at sørge for…*	**Source**
Ledopg_1	…that the professional knowledge and norms among employees contribute to achieving the goals of the organization (0) / …that it is always clear to the employees what is required of them to gain a reward (10). *…at medarbejdernes faglige viden og normer bidrager til opnåelsen af organisationens målsætninger (0) / …at det hele tiden er klart for medarbejderne, hvad der skal til for at opnå belønning (10).*	Own
Ledopg_2	…that it is always clear to the employees how they can best realize the unit's vision (0) / …that the professional knowledge and norms among employees contribute to achieving the goals of the organization (10). *…at det hele tiden er klart for medarbejderne, hvordan de bedst kan gøre visionen til virkelighed (0) /… at medarbejdernes faglige viden og normer bidrager til opnåelsen af organisationens målsætninger (10).*	Own
Ledopg_3	…that it is always clear to the employees what is required of them to gain a reward (0) / …that it is always clear to the employees how they can best realize the unit's vision (0). …at *det hele tiden er klart for medarbejderne, hvad der skal til for at opnå belønning (0) /…at det hele tiden er klart for medarbejderne, hvordan de bedst kan gøre visionen til virkelighed (10).*	Own

Note: These questions only appeared for the leaders.

Figure 4.39: Professional development leadership vs. transactional leadership, public manager rating in pre-survey

Professional development leadership vs. transactional leadership, leader rating in pre-survey
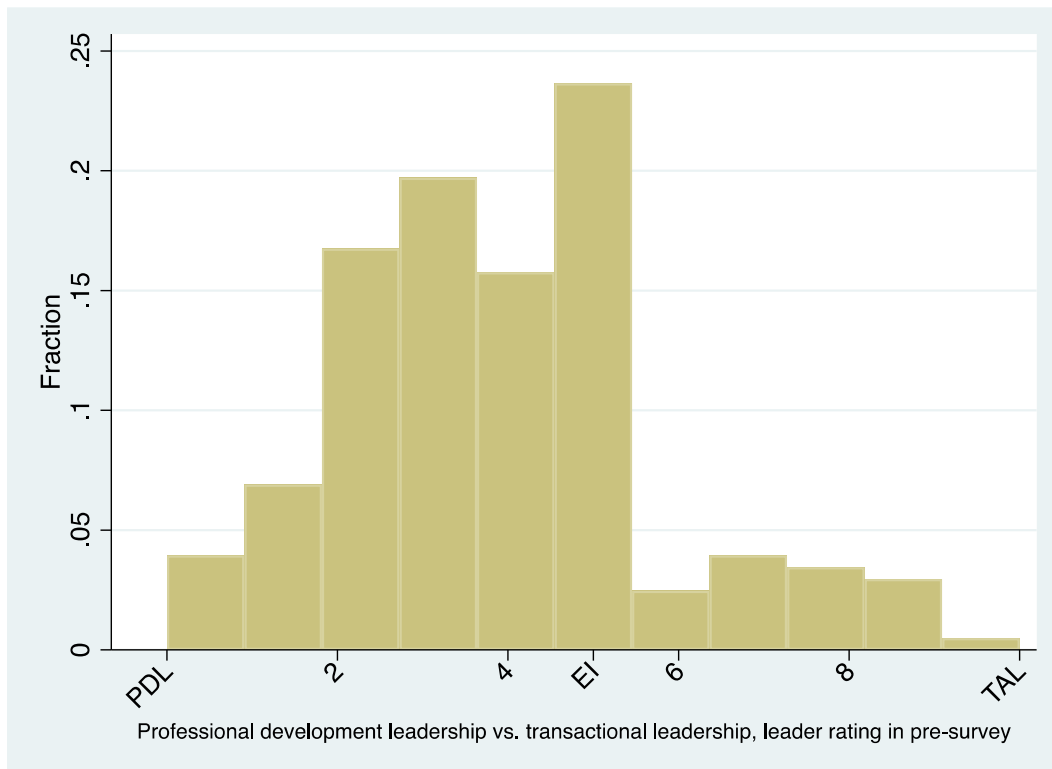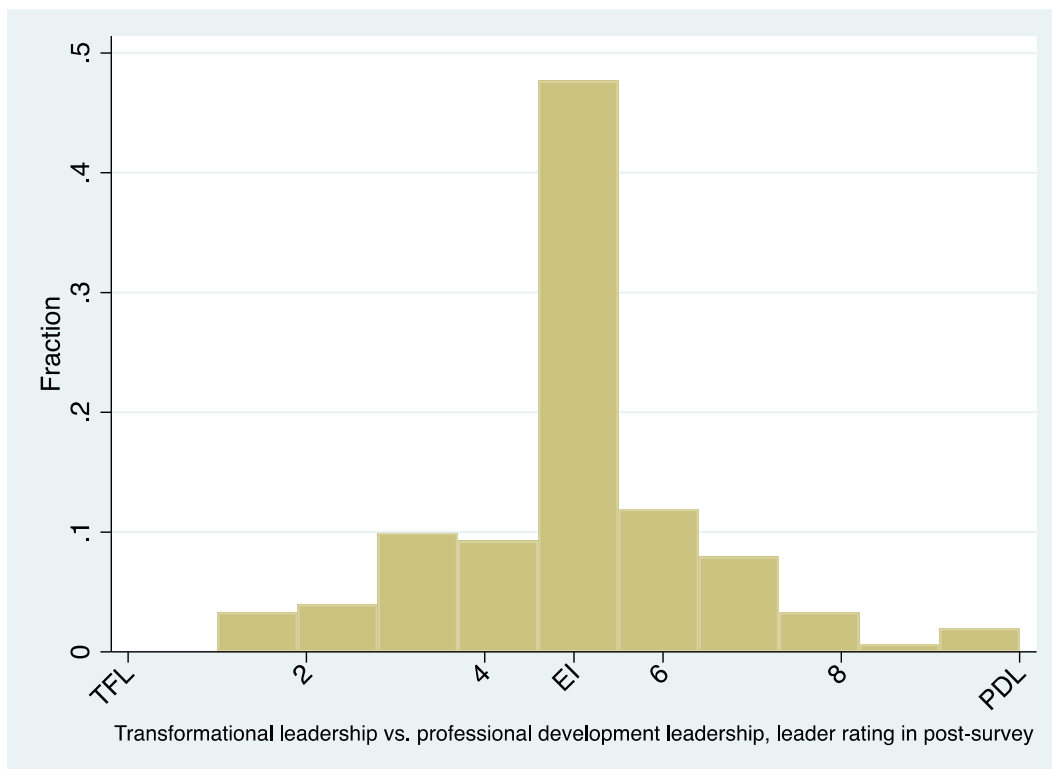
Note: N = 203, mean = 3.82, std. dev. = 2.07, min. = 0, max. = 10, skewness = .55, kurtosis = 3.26. PDL = "It is most important to make sure that the professional knowledge and norms among employees contribute to achieving the goals of the organization," EI = "Equally important," TAL = "It is most important to make sure that it is always clear to the employees what is required of them to gain a reward."

Figure 4.40: Professional development leadership vs. transactional leadership, public manager rating in post-survey
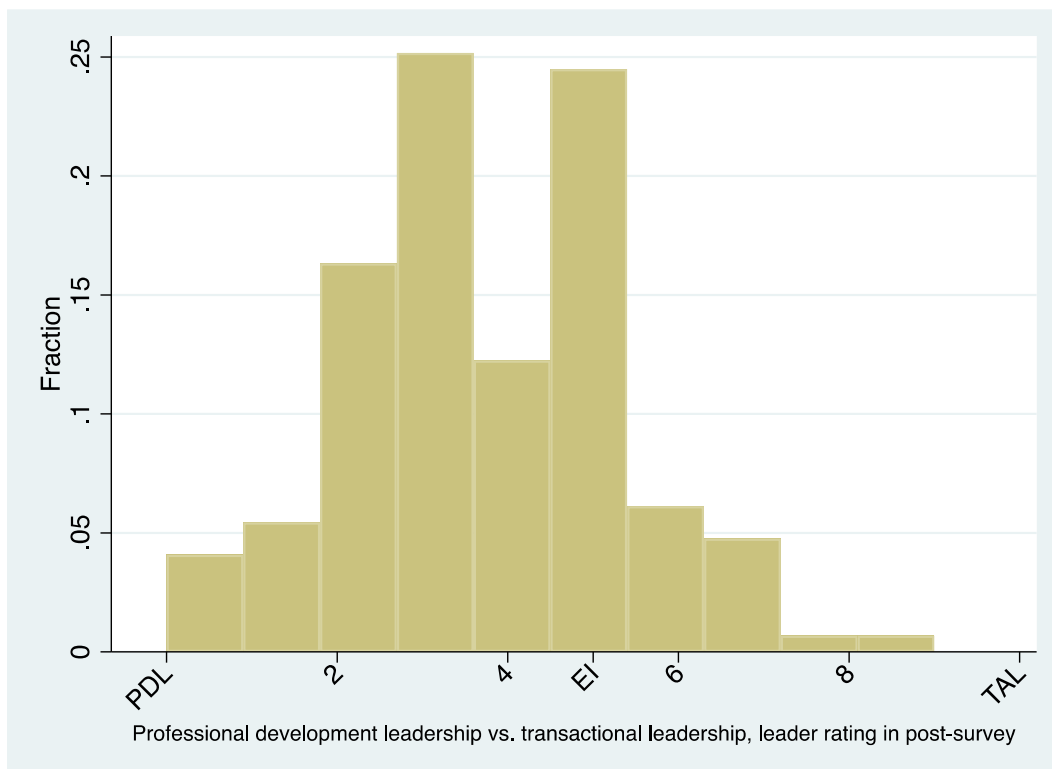
Note: N = 147, mean = 3.67 std. dev. = 1.78, min. = 0, max. = 9, skewness = .15, kurtosis = 2.83. PDL = "It is most important to make sure that the professional knowledge and norms among employees contribute to achieving the goals of the organization," EI = "Equally important," TAL = "It is most important to make sure that it is always clear to the employees what is required of them to gain a reward."

Figure 4.41: Transformational leadership vs. professional development leadership, public manager rating in pre-survey

Transformational leadership vs. professional development leadership, leader rating in pre-survey
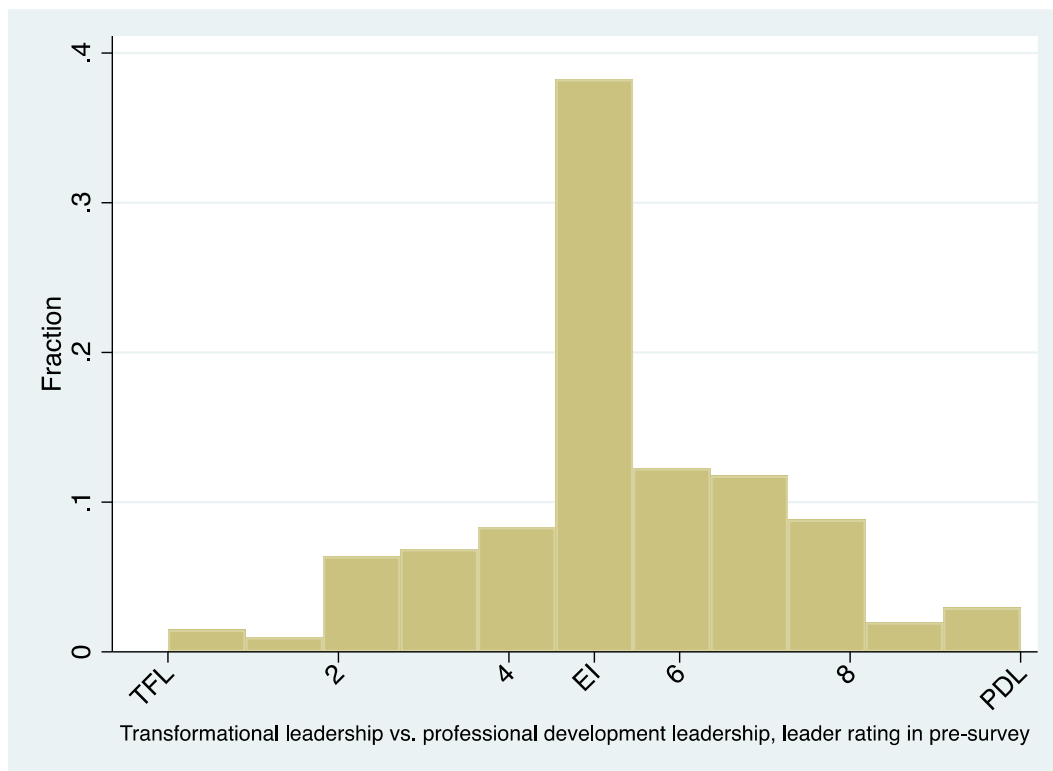
Note: N = 204, mean = 5.32, std. dev. = 1.95, min. = 0, max. = 10, skewness = -.02, kurtosis = 3.37. TFL = "It is most important to make sure that it is always clear to the employees how they can best realize the unit's vision," EI = "Equally important," PDL = "It is most important to make sure that the professional knowledge and norms among employees contribute to achieving the goals of the organization."

Figure 4.42: Transformational leadership vs. professional development leadership, public manager rating in post-survey

Transformational leadership vs. professional development leadership, leader rating in post-survey

Note: N = 151, mean = 4.96, std. dev. = 1.65, min. = 0, max. = 10, skewness = .18, kurtosis = 4.30. TFL = "It is most important to make sure that it is always clear to the employees how they can best realize the unit's vision," EI = "Equally important," PDL = "It is most important to make sure that the professional knowledge and norms among employees contribute to achieving the goals of the organization."

Figure 4.43: Transactional leadership vs. transformational leadership, public manager rating in pre-survey
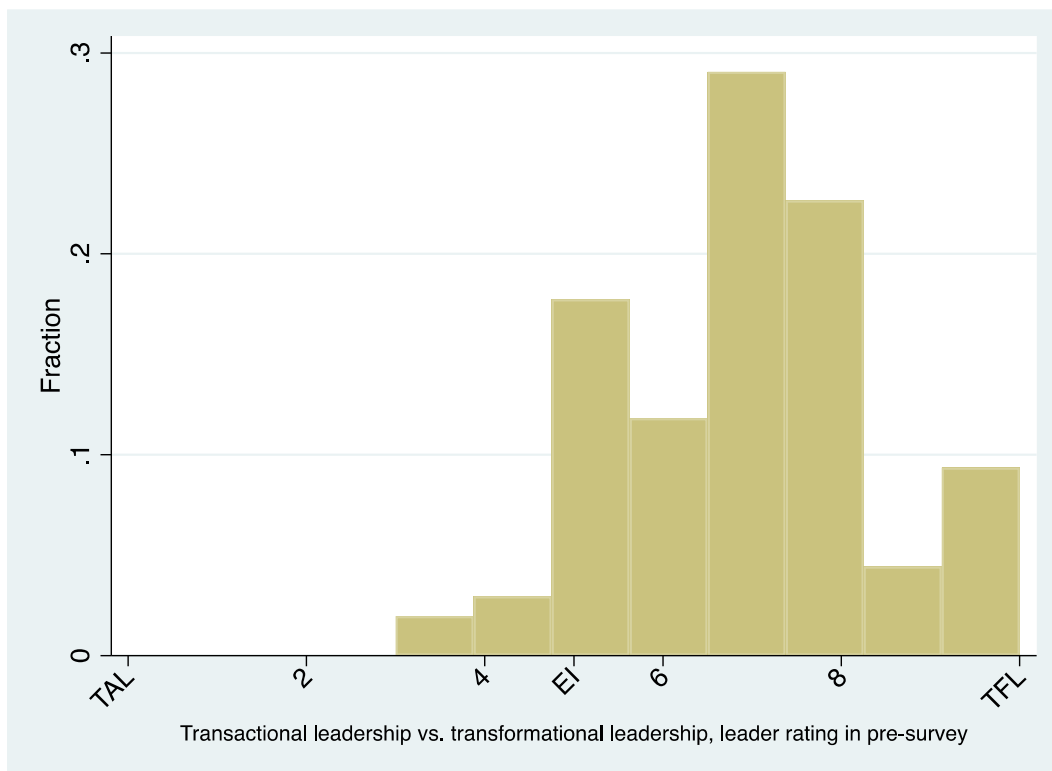
Note: N = 203, mean = 6.96, std. dev. = 1.63, min. = 3, max. = 10, skewness = -.03, kurtosis = 2.68. TAL = "It is most important to make sure that it is always clear to the employees what is required of them to gain a reward," EI = "Equally important," TFL = "It is most important to make sure that it is always clear to the employees how they can best realize the unit's vision."

Figure 4.44: Transactional leadership vs. transformational leadership, public manager rating in post-survey

Transactional leadership vs. transformational leadership, leader rating in post-survey

Note: N = 150, mean = 7.13, std. dev. = 1.66, min. = 0, max. = 10, skewness = -.79, kurtosis = 4.78. TAL = "It is most important to make sure that it is always clear to the employees what is required of them to gain a reward," EI = "Equally important," TFL = "It is most important to make sure that it is always clear to the employees how they can best realize the unit's vision."

The distributions show that the public managers generally prioritize transformational leadership and professional development leadership to a similar degree, whereas they prioritize transactional leadership to a lesser extent.

4.6   Use of Goal-Oriented Development Dialogues

Table 4.77: Items measuring use of goal-based development dialogues, number of dialogues

	Leaders/employees	Source
Antal_udviklingsdia	L: How many development dialogues have you conducted with each of your employees on average since October 2020? L: *Hvor mange udviklingssamtaler har du gennemsnitligt haft med hver af dine medarbejdere siden oktober 2020?* E: How many development dialogues with your leader have you taken part in since October 2020? M: *Hvor mange udviklingssamtaler har du haft med din leder siden oktober 2020?*	Own
Virtuel_udv_dia	L: How many of these development dialogues were conducted virtually? Please specify the approximate share of the interviews in percent. L: *Hvor mange af disse udviklingssamtaler blev foretaget virtuelt? Angiv omtrentlig andel i procent.* E: How many of these development dialogues were conducted virtually? M: *Hvor mange af disse udviklingssamtaler blev foretaget virtuelt?*	Own
Indi_opfølg	L: The average number of individual follow-up dialogues per employee (since October 2020). L: *Gennemsnitligt antal individuelle opfølgningsdialoger pr. medarbejder (siden oktober 2020).* E: How many individual follow-up dialogues with your leader have you taken part in since October 2020? M: *Hvor mange individuelle opfølgningsdialoger har du haft med din leder siden oktober 2020?*	Own
Grp_opfølg	L: The average number of group-based follow-up dialogues per employee (since October 2020).	Own

|	L: *Gennemsnitligt antal gruppebaserede opfølgningsdialoger pr. medarbejder (siden oktober 2020).*	
	E: How many group-based follow-up dialogues with your leader have you taken part in since October 2020? M: *Hvor mange gruppebaserede opfølgningsdialoger har du haft med din leder siden oktober 2020?*	
Uformel_indi_opfølg	L: The average number of informal individual follow-up dialogues per employee (since October 2020). L: *Gennemsnitligt antal uformelle individuelle opfølgningsdialoger pr. medarbejder (siden oktober 2020).* E: How many informal individual follow-up dialogues with your leader have you taken part in since October 2020? M: *Hvor mange uformelle individuelle opfølgningsdialoger har du haft med din leder siden oktober 2020?*	Own
Uformel_grp_opfølg	L: The average number of informal group-based follow-up dialogues per employee (since October 2020). L: *Gennemsnitligt antal uformelle gruppebaserede opfølgningsdialoger pr. medarbejder (siden oktober 2020).* E: How many informal group-based follow-up dialogues with your leader have you taken part in since October 2020? M: *Hvor mange uformelle gruppebaserede opfølgningsdialoger har du haft med din leder siden oktober 2020?*	Own

Note: Questions only appeared in the post-survey.

Figure 4.45: Average number of development dialogues per employee since Oct. 2020, public manager responses
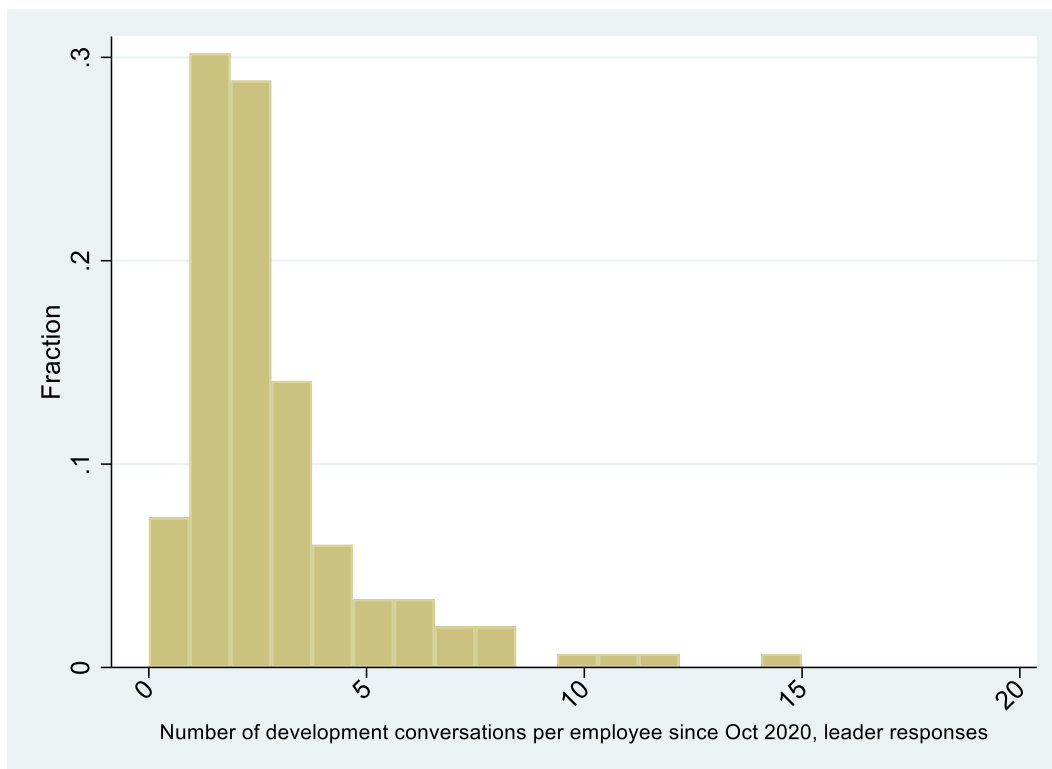
Note: N = 149, mean = 2.54, std. dev. = 2.36, min. = 0, max. = 15, skewness = 2.33, kurtosis = 10.05.

Figure 4.46: Number of development dialogues since Oct. 2020, employee responses
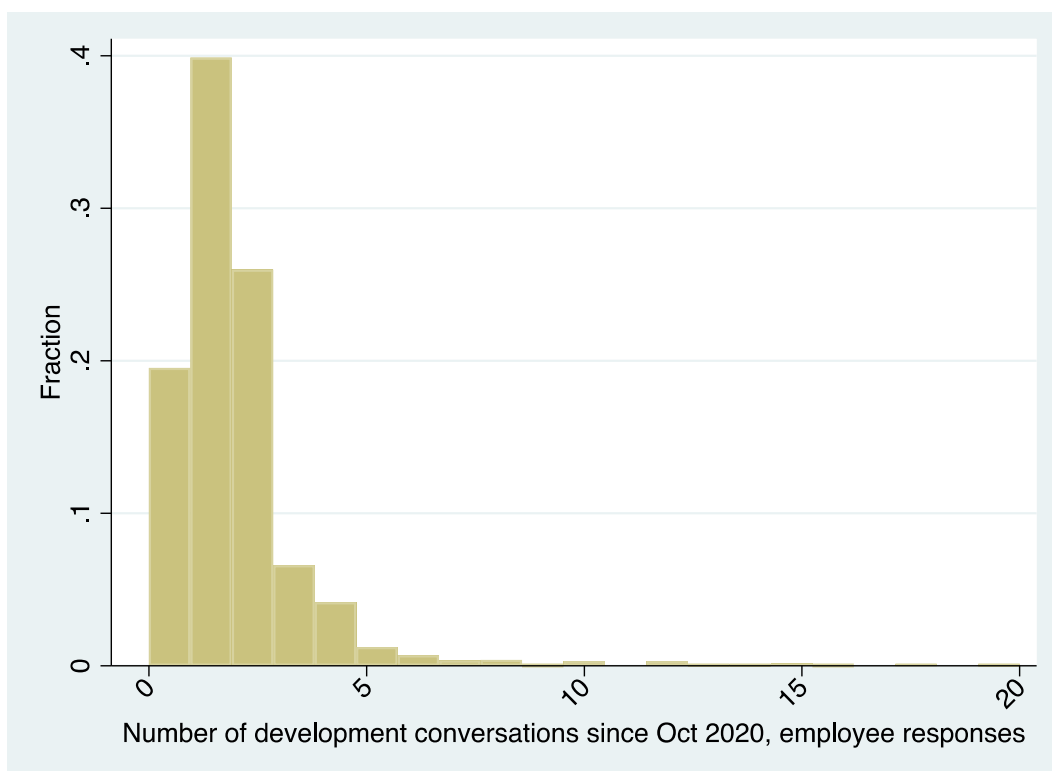
Note: N = 2591, mean = 1.60, std. dev. = 1.82, min. = 0, max. = 20, skewness = 4.21, kurtosis = 30.90.

The public managers report having held more development dialogues per employee (2.54), than the employees report on average (1.60).

Figure 4.47: Share of development dialogues since Oct. 2020 conducted virtually, public manager responses
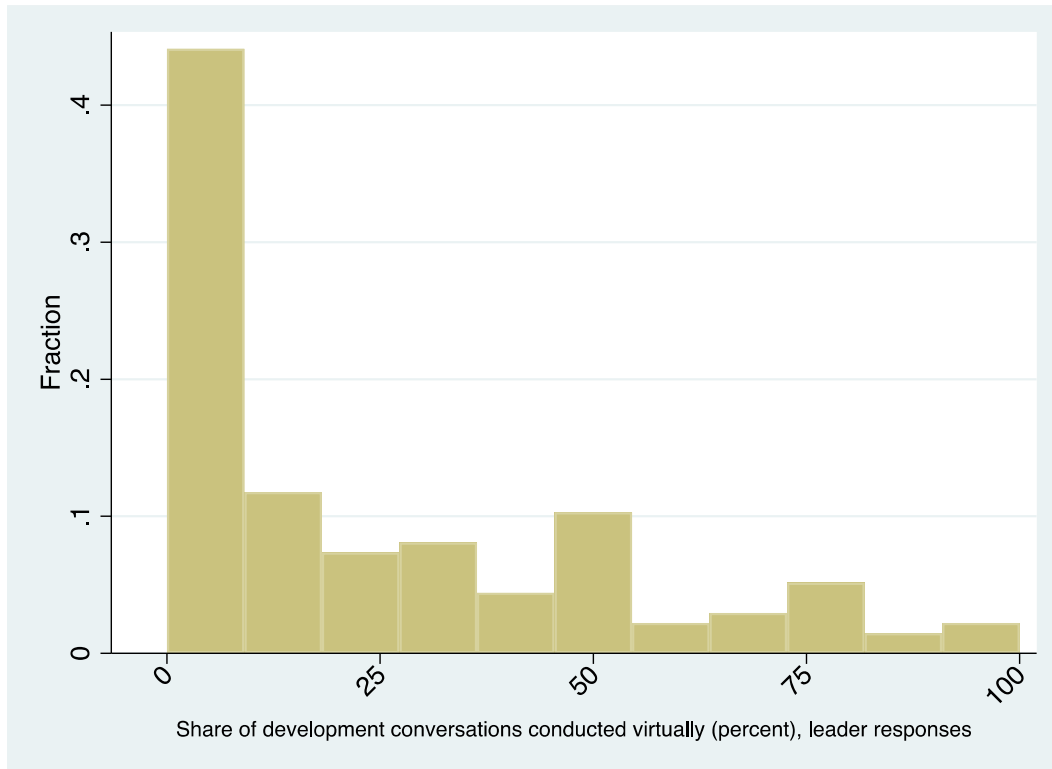
Note: N = 136, mean = 23.01, std. dev. = 28.48, min. = 0, max. = 100, skewness = 1.09, kurtosis = 3.06.

Figure 4.48: Number of development dialogues since Oct. 2020 conducted virtually, employee responses
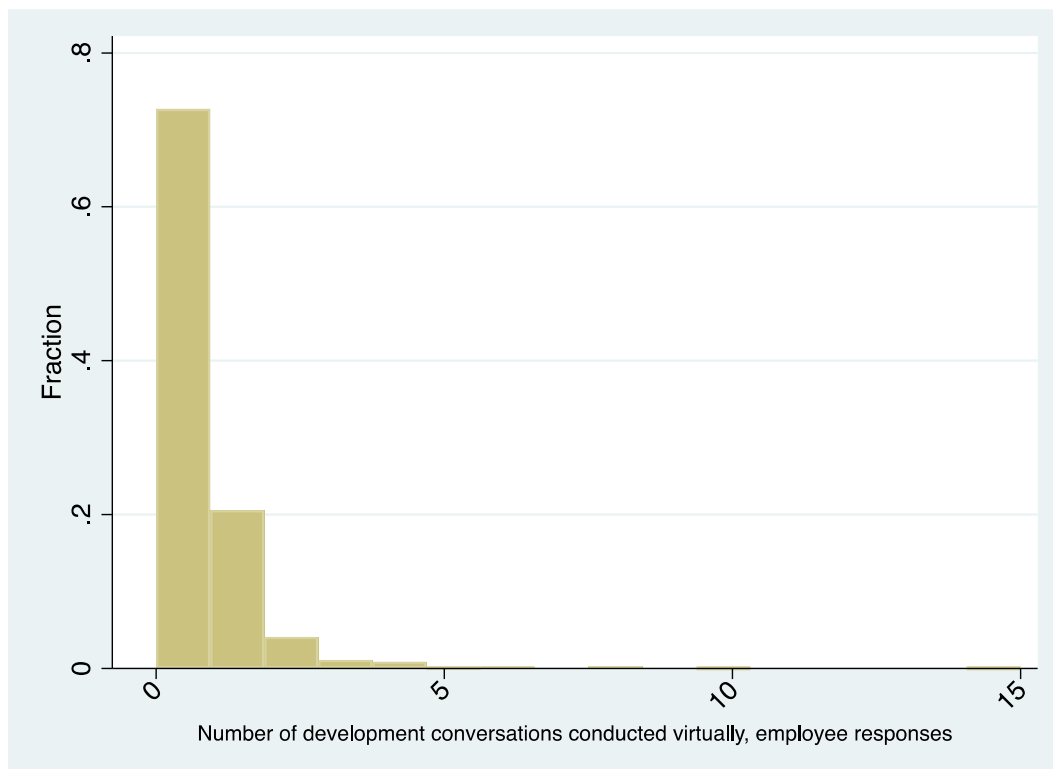
Note: N = 2072, mean = .40, std. dev. = .92, min. = 0, max. = 15, skewness = 5.33, kurtosis = 53.38.

Both public managers and employees report that few of the development dialogues were conducted virtually. Note that statistics are not directly comparable between leaders and employees due to different phrasing of the question.

Figure 4.49: Average number of individual follow-up dialogues per employee since Oct. 2020, public manager responses
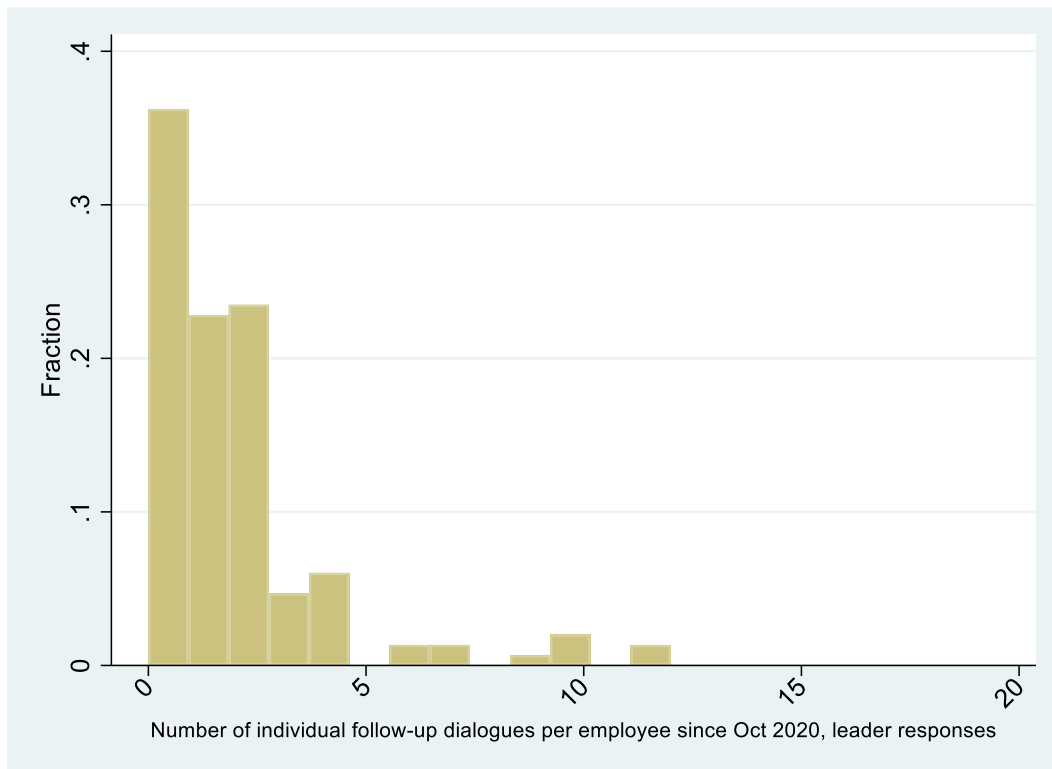
Note: N = 149, mean = 1.68, std. dev. = 2.33, min. = 0, max. = 12, skewness = 2.51, kurtosis = 10.00.

Figure 4.50: Number of individual follow-up dialogues since Oct. 2020, employee responses
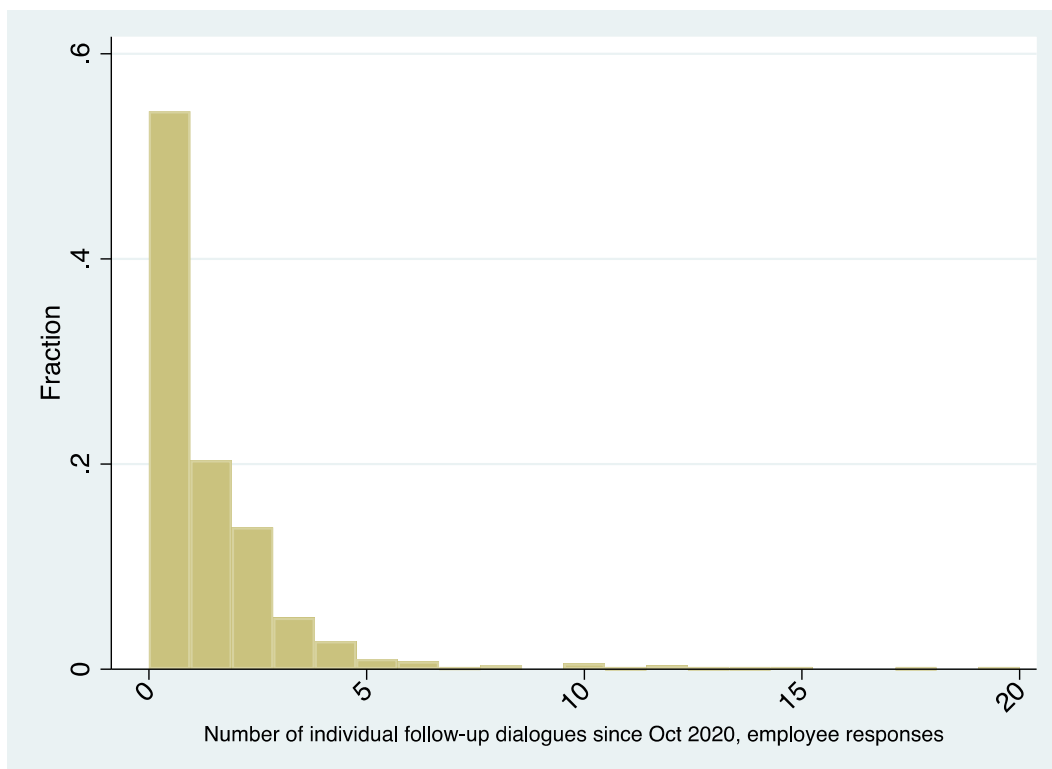
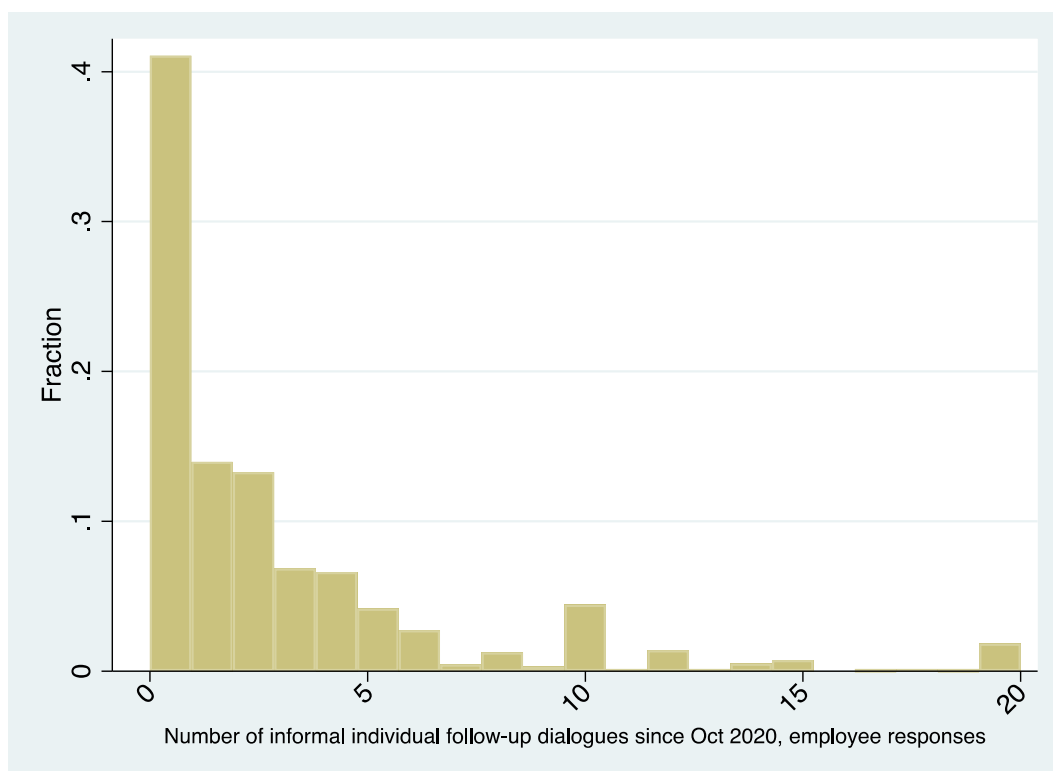Note: N = 2019, mean = 1.06, std. dev. = 2.01, min. = 0, max. = 20, skewness = 4.43, kurtosis = 31.35.

The public managers report more individual follow-up dialogues than the employees do. However, both distributions peak at the bottom of the scale, depicting zero dialogues held.

Figure 4.51: Average number of group-based follow-up dialogues per employee since Oct. 2020, public manager responses
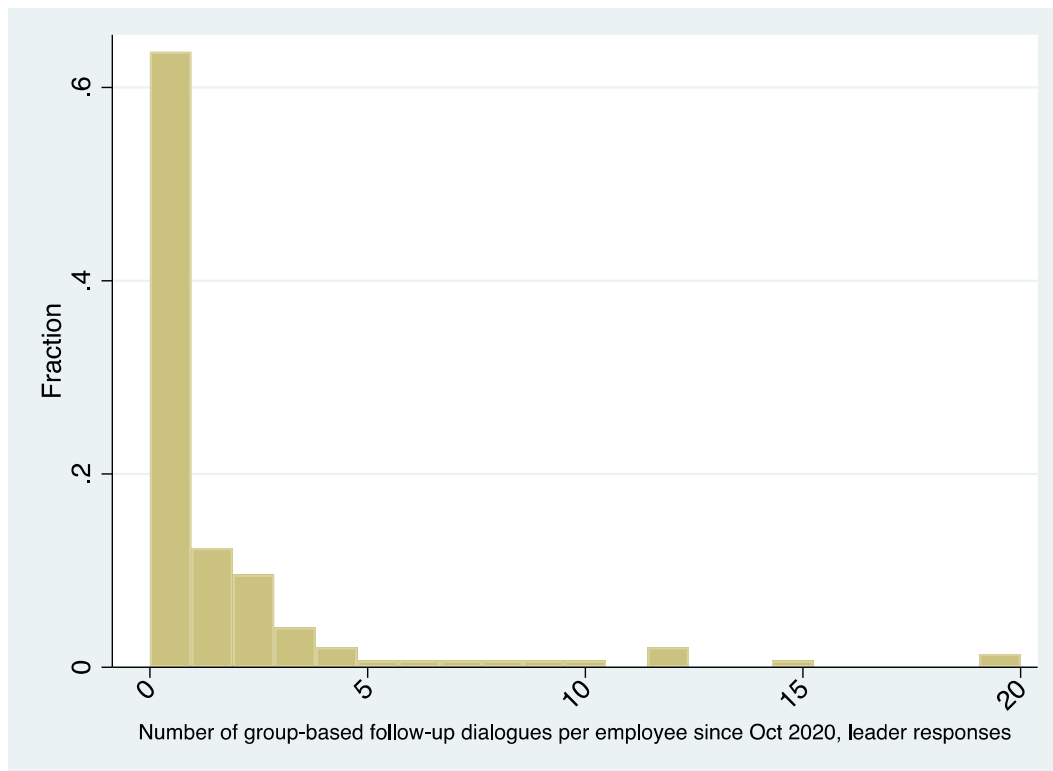
Note: N = 146, mean = 1.45, std. dev. = 3.40, min. = 0, max. = 20, skewness = 3.54, kurtosis = 16.55.

Figure 4.52: Number of group-based follow-up dialogues since Oct. 2020, employee responses
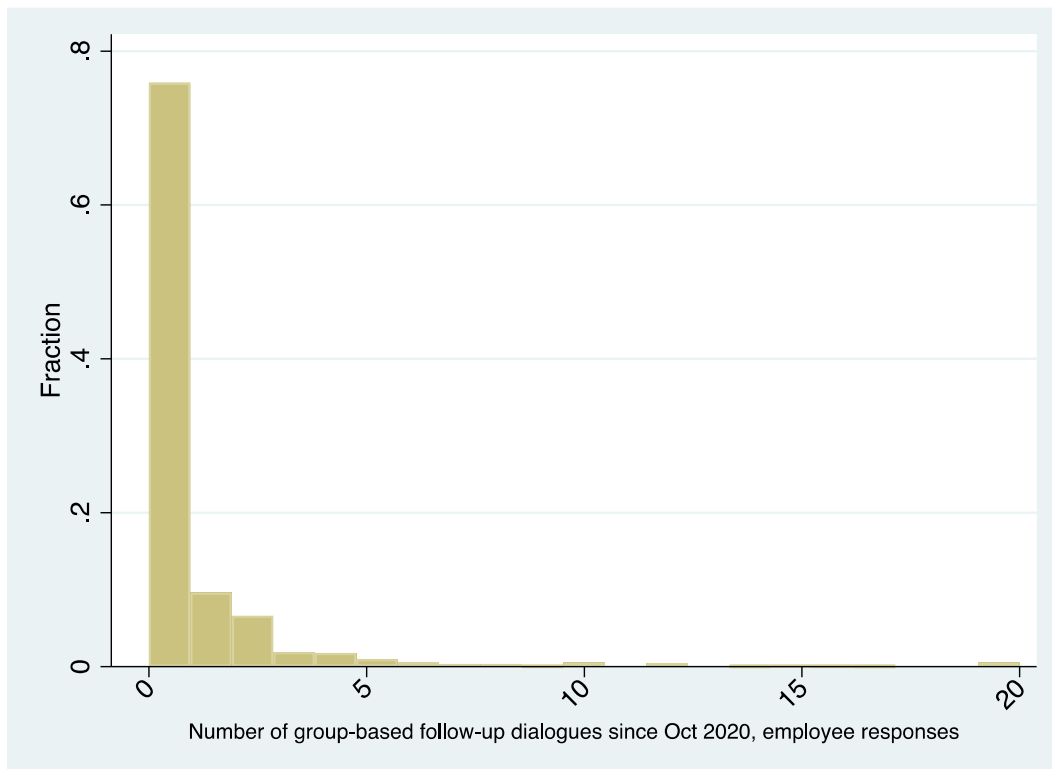
Note: N = 1966, mean = .77, std. dev. = 2.29, min. = 0, max. = 20, skewness = 5.27, kurtosis = 36.77.

The public managers report more group-based follow-up dialogues than the employees do. Both managers and employees report fewer group-based dialogues than individual dialogues.

Figure 4.53: Average number of informal individual follow-up dialogues per employee since Oct. 2020, public manager responses
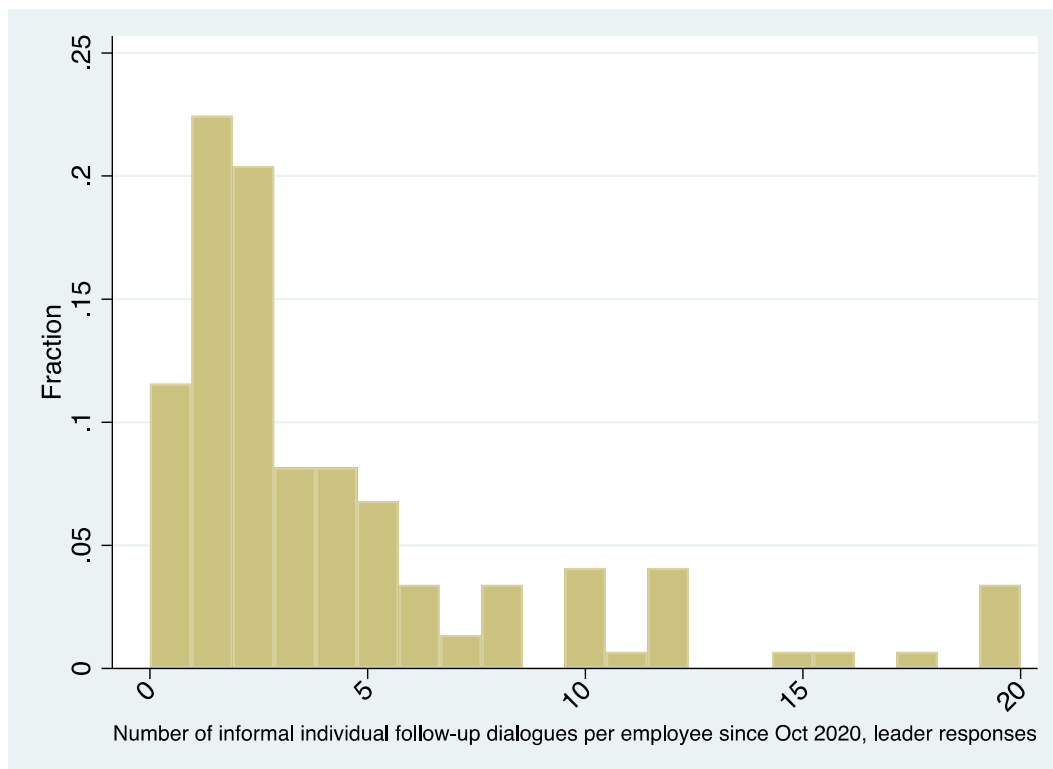
Note: N = 147, mean = 4.10, std. dev. = 4.69, min. = 0, max. = 20, skewness = 1.87, kurtosis = 6.16.
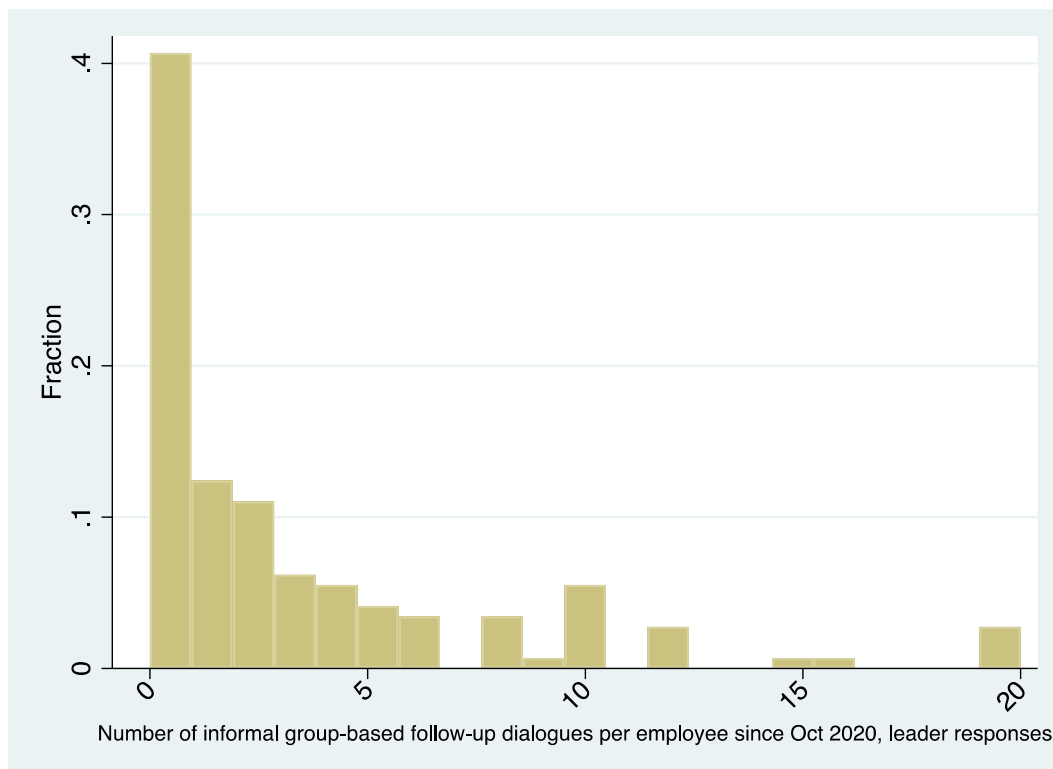
Figure 4.54: Number of informal individual follow-up dialogues since Oct. 2020, employee responses

Note: N = 2011, mean = 2.63, std. dev. = 4.02, min. = 0, max. = 20, skewness = 2.36, kurtosis = 9.03.

The public managers report more informal individual follow-up dialogues than the employees do. The distribution for employees peak at 0, whereas 1 and 2 dialogues are more popular answers for the managers. However, both public managers and employees report more informal individual follow-up dialogues than formal ones.

Figure 4.55: Average number of informal group-based follow-up dialogues per employee since Oct. 2020, public manager responses

Note: N = 145, mean = 3.15, std. dev. = 4.59, min. = 0, max. = 20, skewness = 1.95, kurtosis = 6.63.

Figure 4.56: Number of informal group-based follow-up dialogues since Oct. 2020, employee responses
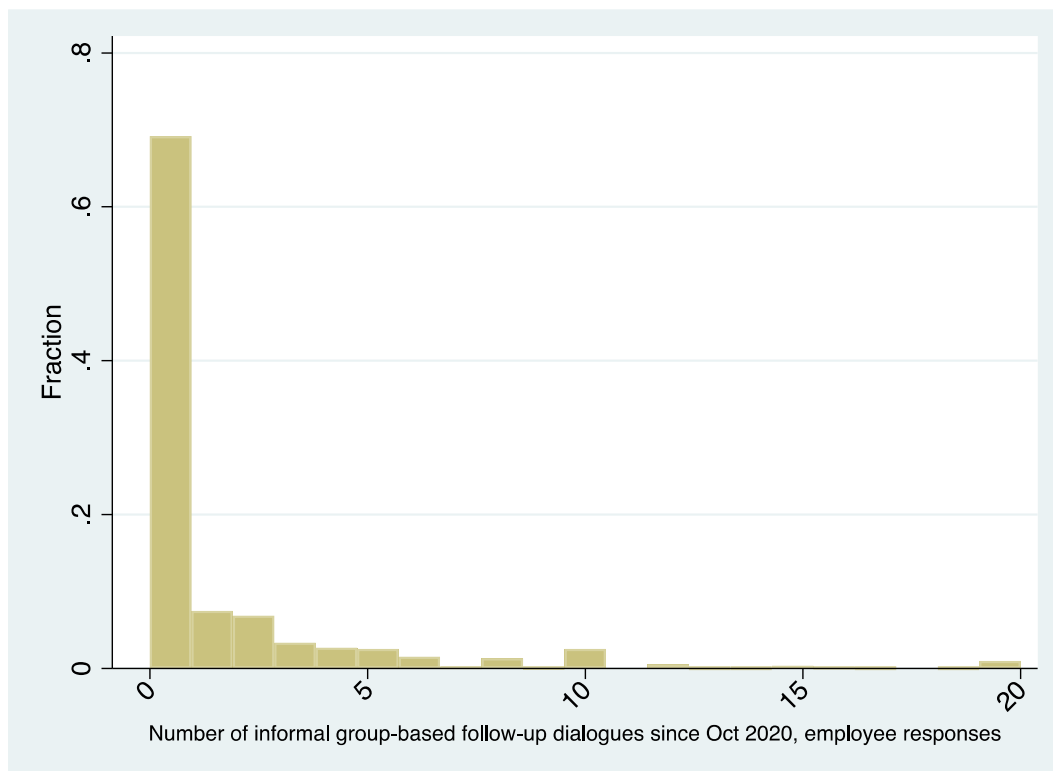
Note: N = 1967, mean = 1.39, std. dev. = 3.20, min. = 0, max. = 20, skewness = 3.40, kurtosis = 16.31.

The public managers report more informal group-based follow-up dialogues on average than the employees do.

4.7 Use of Goal-Oriented Development Dialogues, Use According to Target Behavior

Table 4.78: Items measuring use of goal-oriented development dialogues, use according to target behavior

	Leaders/employees	Source
Udv_dia_udsagn1_1	L: I have sent the preparatory questions to employees, which they had to answer as preparation for the development conversations. *L: Jeg har sendt forberedelsesspørgsmål til medarbejderne, som de skulle besvare som forberedelse til udviklingssamtalerne.* E: I received a number of questions from my leader that I was to answer to prepare for the development conversation. *M: Jeg modtog en række spørgsmål fra min leder, som jeg skulle besvare som forberedelse til udviklingssamtalen.*	Own
Udv_dia_udsagn1_2	L: The employees have sent their preparations to me before the conversations. *L: Medarbejderne har sendt deres forberedelse til mig forud for samtalerne.* E: I have sent my preparations to my leader before the conversation so that they are able to prepare for the conversation. *M: Jeg har sendt min forberedelse af samtalen til min leder forud for samtalen, så han/hun kunne være bedre forberedt til samtalen.*	Own
Udv_dia_udsagn1_3_kun_leder	L: I have read the employees' answers to the preparatory questions before the development conversations. *L: Jeg har læst medarbejdernes besvarelse af forberedelsesspørgsmålene forud for udviklingssamtalerne.*	Own
Udv_dia_udsagn1_3	L: The development conversations with my employees have had their starting point in the preparation work that the employees did beforehand.	Own

	L: Udviklingssamtalerne med mine medarbejdere har taget afsæt i den forberedelse, som medarbejderne har gjort forud for samtalerne. E: The development conversation had the preparation I had done beforehand as its starting point. *M: Udviklingssamtalen tog afsæt i den forberedelse, som jeg selv har gjort forud for samtalen.*	
Udv_dia_udsagn1_4	L: In the development conversations, the employee and I have formulated concrete goals for how the employee can contribute to the realization of our vision/overall goals. *L: I udviklingssamtalerne har medarbejderen og jeg formuleret konkrete målsætninger for, hvordan medarbejderen kan bidrage til realiseringen af vores vision/overordnede målsætninger.* E: Initiated by my leader, we have formulated concrete goals for how I can contribute to the realization of our vision/overall goals. *M: Min leder har taget initiativ til, at vi sammen har formuleret konkrete målsætninger for, hvordan jeg kan bidrage til realiseringen af vores vision/overordnede målsætninger.*	Own
Udv_dia_udsagn2_1	L: The employees generally have a great sense of ownership of the goals that we have agreed on during the development conversations. *L: Medarbejderne oplever generelt et stort ejerskab til de målsætninger, som vi har aftalt i forbindelse med udviklingssamtalerne.* E: I feel a great sense of ownership of the goals that my leader and I have agreed on during the development conversations. *M: Jeg oplever stort ejerskab til de målsætninger, som min leder og jeg har*	Own

	aftalt i forbindelse med udviklingssamtalen.	
Udv_dia_udsagn2_2	L: The employees and I have developed an action plan concerning how they can reach their goals. *L: Medarbejderne udviklede sammen med mig en handleplan for, hvordan de kan nå deres udviklingsmål.* E: Together with my leader, I have developed an action plan concerning how I can reach my goals. *M: Sammen med min leder har jeg udviklet en handleplan for, hvordan jeg kan nå mit/mine udviklingsmål.*	Own
Udv_dia_udsagn2_3	L: The action plans make it tangible for each employee how they can work towards increasing their contribution to realizing the organization's vision/overall goals. *L: Handleplanerne gør det konkret for den enkelte medarbejder, hvordan han/hun kan arbejde med at øge sit bidrag til organisationens vision/overordnede målsætninger.* E: The action plan for my goals makes it tangible for me how I can work towards increasing my contribution to realizing the organization's vision/overall goals. *M: Handleplanen for mit/mine udviklingsmål gør det konkret for mig, hvordan jeg kan arbejde med at øge mit bidrag til organisationens vision/overordnede målsætninger.*	Own
Udv_dia_udsagn2_4	L: I have followed up on the goals we agreed on during the development conversations. *L: Jeg har fulgt op på de målsætninger, som vi har aftalt i udviklingssamtalerne.* E: My leader follows up on the goals we have agreed on. *M: Min leder følger op på den/de målsætning(er), som vi har aftalt.*	Own

Udv_dia_udsagn3_1	L: Together with my employees, I have assessed whether working with their goals has contributed to the realization of our vision/overall goals. *L: Jeg har sammen med medarbejderne evalueret, om arbejdet med deres udviklingsmål har bidraget til opnåelse af vores vision/overordnede målsætninger.* E: Together with my leader, I have assessed whether working with my goals has contributed to the realization of our vision/overall goals. *M: Sammen med min leder har jeg evalueret, om arbejdet med mit/mine udviklingsmål har bidraget til opnåelse af vores vision/overordnede målsætninger.*	Own
Udv_dia_udsagn3_2	L: In connection with the follow-up dialogues, the employees and I have further developed their action plans based on the experiences they have had. *L: I forbindelse med opfølgningsdialoger har jeg og medarbejderne videreudviklet deres handleplaner på baggrund af deres erfaringer.* E: In connection with the follow-up dialogues with my leader, I have further developed my action plan based on the experiences I have had. *M: I forbindelse med opfølgningsdialoger med min leder har jeg videreudviklet min handleplan på baggrund af de erfaringer, jeg har gjort.*	Own
Udv_dia_udsagn3_3	L: The development conversations have made the employees better at solving their tasks. *L: Udviklingsdialogerne har bidraget til, at medarbejderne er blevet bedre til løse deres opgaver.* E: The development conversations have made me better at solving my tasks. *M: Udviklingsdialogerne har bidraget til, at jeg er blevet bedre til at løse mine opgaver.*	Own

Opf_lg_udsagn_1	L: I think I have initiated a suitable amount of follow-up dialogues about the goals and action plans we agreed on during the development conversation. *L: Jeg oplever, at jeg har taget et passende antal opfølgningsdialoger i forhold til de udviklingsmål og handleplaner, som jeg har aftalt med mine medarbejdere i udviklingssamtalerne.* E: My leader has initiated a suitable amount of follow-up dialogues about the goals and action plans we agreed on during the development conversation. *M: Min leder har taget initiativ til et passende antal opfølgningsdialoger i forhold til de udviklingsmål og handleplaner, som vi aftalte i udviklingssamtalen.*	Own

Table 4.79: Response distribution for item udv_dia_udsagn1_1

I have sent the preparatory questions to employees, which they had to answer as preparation for the development conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 140)	3.57% (5)	7.14% (10)	8.57% (12)	17.86% (25)	61.86% (88)	4.29	1.12
I received a number of questions from my leader that I was to answer to prepare for the development conversation.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2134)	10.07% (215)	4.97% (106)	12.70% (271)	19.82% (423)	52.44% (1119)	4.00	1.33

Table 4.80: Response distribution for item udv_dia_udsagn1_2

The employees have sent their preparations to me before the conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 140)	30.71% (43)	15.00% (21)	12.14% (17)	18.57% (26)	23.57% (33)	2.89	1.59
I have sent my preparations to my leader before the conversation so that they are able to prepare for the conversation.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2127)	40.76% (867)	8.04% (171)	12.32% (162)	8.18% (174)	30.70% (653)	2.80	1.73

Table 4.81: Response distribution for item udv_dia_udsagn1_3_kun_leder

I have read the employees' answers to the preparatory questions before the development conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 140)	27.86% (39)	7.86% (11)	11.43% (16)	15.00% (21)	37.86% (53)	3.27	1.67

Table 4.82: Response distribution for item udv_dia_udsagn1_3

The development conversations with my employees have had their starting point in the preparation work that the employees did beforehand.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 140)	4.29% (6)	4.29% (6)	9.29% (13)	40.00% (56)	42.147% (59)	4.11	1.03
The development conversation had the preparation I had done beforehand as its starting point.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2131)	9.34% (199)	4.79% (102)	16.66% (355)	29.05% (619)	40.17% (856)	3.86	1.26

Table 4.83: Response distribution for item udv_dia_udsagn1_4

In the development conversations, the employees and I have formulated concrete goals for how the employee can contribute to the realization of our vision/overall goals.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 139)	.72% (1)	11.51% (16)	18.71% (26)	49.64% (69)	19.41% (27)	3.76	.92
Initiated by my leader, we have formulated concrete goals for how I can contribute to the realization of our vision/overall goals.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2130)	5.94% (122)	6.46% (136)	19.51% (416)	27.74% (583)	40.36% (873)	3.92	1.17

Table 4.84: Response distribution for item udv_dia_udsagn2_1

The employees generally have a great sense of ownership of the goals that we have agreed on during the development conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 139)	0% (0)	5.04% (7)	27.34% (38)	48.92% (68)	18.71% (26)	3.81	.79
I feel a great sense of ownership of the goals that my leader and I have agreed on during the development conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2124)	3.11% (66)	3.63% (77)	23.26% (494)	34.32% (729)	35.69% (758)	3.97	1.01

Table 4.85: Response distribution for item udv_dia_udsagn2_2

The employees and I have developed an action plan concerning how they can reach their goals.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 139)	1.44% (2)	10.07% (14)	24.46% (34)	39.57% (55)	24.46% (34)	3.76	.98
Together with my leader, I have developed an action plan concerning how can I reach my goals.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2122)	5.94% (126)	6.41% (136)	25.12% (533)	33.08% (702)	29.45% (625)	3.74	1.13

Table 4.86: Response distribution for item udv_dia_udsagn2_3

I have followed up on the goals we agreed on during the development conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 138)	1.45% (2)	5.80% (8)	36.96% (51)	34.78% (48)	21.01% (29)	3.68	.92
My leader follows up on the goals we have agreed on.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2117)	5.81% (123)	7.09% (150)	32.03% (678)	30.80% (652)	24.28% (514)	3.60	1.10

Table 4.87: Response distribution for item udv_dia_udsagn2_4

I have followed up on the goals we agreed on during the development conversations.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 140)	2.14% (3)	5.71% (8)	18.57% (26)	55.00% (77)	18.57% (26)	3.82	.88
My leader follows up on the goals we have agreed on.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2122)	7.26% (154)	6.88% (146)	28.70% (609)	29.36% (623)	27.80% (590)	3.64	1.17

Table 4.88: Response distribution for item udv_dia_udsagn3_1

Together with my employees, I have assessed whether working with their goals has contributed to the realization of our vision/overall goals.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 138)	7.25% (10)	17.39% (24)	29.71% (41)	37.68% (52)	7.97% (11)	3.22	1.06
Together with my leader, I have assessed whether working with my goals has contributed to the realization of our vision/overall goals.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2120)	10.75% (228)	10.28% (218)	35.09% (744)	25.19% (534)	18.68% (396)	3.31	1.20

Table 4.89: Response distribution for item udv_dia_udsagn3_2

In connection with follow-up dialogues, the employees and I have further developed their action plans based on the experiences they have had.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 139)	7.19% (10)	18.41% (26)	29.50% (41)	35.97% (50)	8.63% (12)	3.20	1.07
In connection with follow-up dialogues with my leader, I have further developed my action plan based on the experiences I have had.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2118)	12.75% (270)	11.28% (239)	35.32% (748)	24.65% (522)	16.01% (339)	3.20	1.21

Table 4.90: Response distribution for item udv_dia_udsagn3_3

The development conversations have made the employees better at solving their tasks.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 139)	2.88% (4)	7.19% (10)	38.13% (53)	48.20% (67)	3.60% (5)	3.42	.80
The development conversations have made me better at solving my tasks.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2119)	11.37% (241)	10.81% (229)	41.10% (871)	22.98% (487)	13.73% (291)	3.17	1.15

Table 4.91: Response distribution for item opf_lg_udsagn_1

I think I have initiated a suitable amount of follow-up dialogues about the goals and action plans we agreed on during the development conversation.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Leader replies (n = 150)	6.00% (9)	16.00% (24)	26.00% (39)	42.00% (63)	10.00% (15)	3.34	1.05
My leader has initiated a suitable amount of follow-up dialogues about the goals and action plans we agreed on during the development conversation.	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Employee replies (n = 2114)	11.87% (251)	8.51% (180)	34.44% (728)	20.20% (427)	24.98% (528)	3.38	1.27

For most of the above measures, the public managers and employees report approximately the same use of goal-oriented development dialogues.

4.8   Leadership Autonomy

A certain degree of autonomy can be seen as a precondition for conducting leadership. We measure different aspects of organizational autonomy using four items. The items concern managerial authority over hiring, firing, and resource allocation as well as organizational autonomy over internal organization. These distinctions are described by Verhoest et al. (2004) and have previously been used in public administration (e.g. Nielsen, 2014). The items were developed by Boye and colleagues (2015) and builds on item constructions in Andersen (2006).

Table 4.92: Leadership autonomy, items

	Leaders	Source
Autonomi_1	As a leader, I have great freedom to decide which employees we should hire. *Som leder har jeg stor frihed til at bestemme, hvilke medarbejdere vi skal ansætte.*	Boye et al, 2015
Autonomi_2	As a leader, I have great freedom to decide which employees we should dismiss. *Som leder har jeg stor frihed til at bestemme, hvilke medarbejdere vi skal afskedige.*	Boye et al, 2015
Autonomi_3	As a leader, I have great freedom to distribute our resources within the unit. *Som leder har jeg stor frihed til at fordele vores ressourcer inden for enheden.*	Boye et al, 2015
Autonomi_4	In my unit, we have the freedom to decide how we organize our work. *Min enhed er fri til selv at bestemme, hvordan vi organiserer vores arbejde.*	Boye et al, 2015

Note: These questions only appeared for the leaders. The answers were assigned the following values for the index construction: strongly disagree (helt uenig) = 0, mostly disagree (overvejende uenig) = 25, neither agree nor disagree (hverken enig eller uenig) = 50, mostly agree (overvejende enig) = 75, and strongly agree = 100 (helt enig).

Table 4.93: Factor analysis: leadership autonomy as reported by public managers in the pre-survey

	Loadings
As a leader, I have great freedom to decide which employees we should hire.	.738
As a leader, I have great freedom to decide which employees we should dismiss.	.656
As a leader, I have great freedom to distribute our resources within the unit.	.746
In my unit, we have the freedom to decide how we organize our work.	.654

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 203. Cronbach's alpha = .635.

Table 4.94: Factor analysis: leadership autonomy as reported by leaders in the post-survey

	Loadings
As a leader, I have great freedom to decide which employees we should hire.	.825
As a leader, I have great freedom to decide which employees we should dismiss.	.629
As a leader, I have great freedom to distribute our resources within the unit.	.808
In my unit, we have the freedom to decide how we organize our work.	.658

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 150. Cronbach's alpha = .674.

Across both survey waves, all loadings are satisfactory, though not particularly high. The alpha value falls slightly below the satisfactory limit of 0.7 in both the analysis of the pre-survey replies and the post-survey.

Figure 4.57: Distribution of leadership autonomy as reported by public managers in the pre-survey
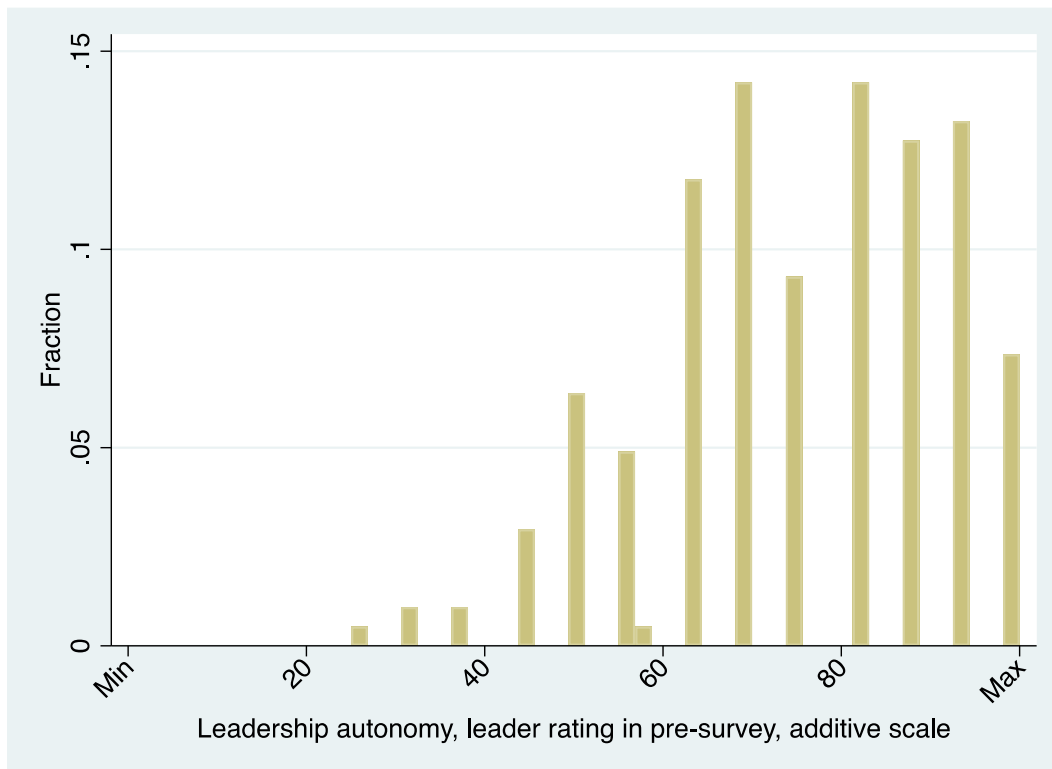
Note: N = 204. Mean = 74.89, std. dev. = 16.59, min. = 25, max. = 100, skewness = -.45, kurtosis = 2.61. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.
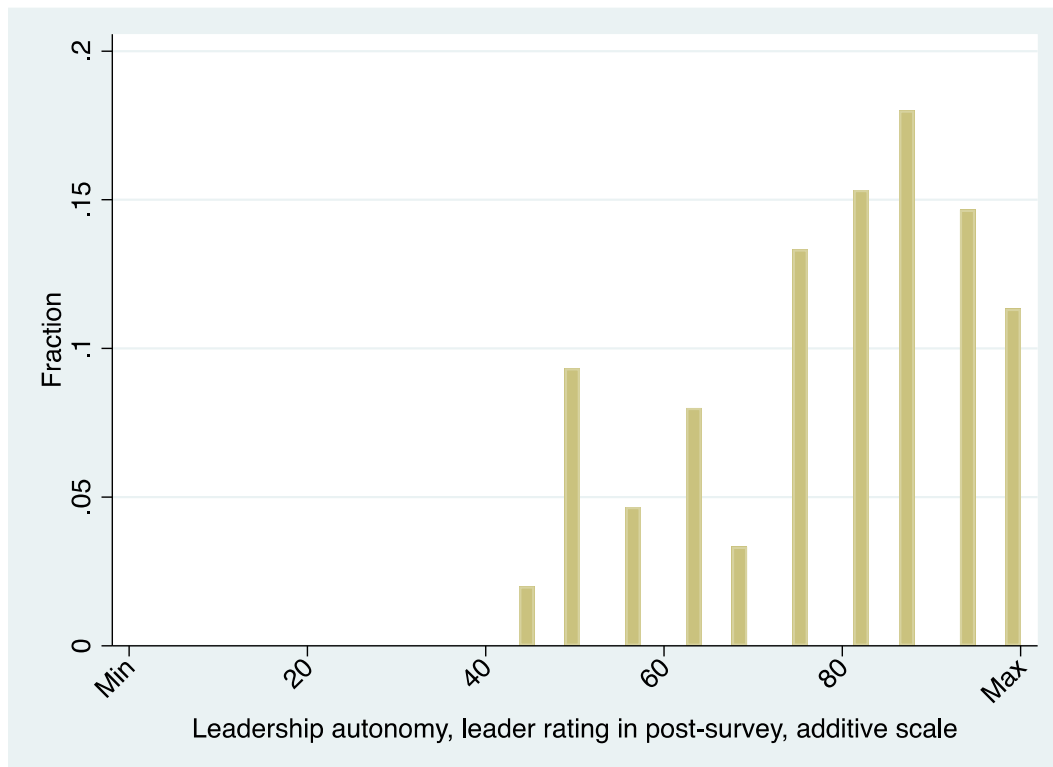
Note: N = 150. Mean = 78.75, std. dev. = 15.88, min. = 43.75, max. = 100, skewness = -.58, kurtosis = 2.28. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Both distributions are left-skewed with means near and just above 75, indicating that the public managers experience a high degree of leadership autonomy.

4.9   Perceived Prosocial Impact (on Society and Users)

"Perceived user impact" and "Perceived societal impact" reflect individuals' belief that they can contribute to other people and to the welfare of society at large through their daily work. We use two questions to capture employees' self-assessed impact of their job activities on other people and society. These questions have been used to examine the interaction between individuals' motives for serving the public and their opportunities to do so in their job (e.g., Steijn, 2008; Bro et al., 2017). The two items can be used separately, or they can be combined as a formative index measuring the prosocial impact of employee work efforts.

Table 4.95: Items measuring perceived prosocial impact of the job

	Employees	Source
pij_vv_1	My job is useful to society. *Mit arbejde gavner samfundet.*	Steijn, 2008;
pij_vv_2	In my job, I can help other people. *Jeg kan hjælpe andre mennesker i mit arbejde.*	Taylor, 2008

Note: These questions only appeared for the employees.

Table 4.96: Response distribution for pij_vv_1, employee replies

My job is useful to society	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Pre-survey (N = 3250)	0.28% (9)	1.05% (34)	7.69% (250)	39.32% (1278)	51.66% (1679)	4.41	.70
Post-survey (N = 2638)	0.34% (9)	0.45% (12)	5.34% (141)	37.64% (993)	56.22% (1483)	4.49	.65

Table 4.97: Response distribution for pij_vv_2, employee replies

My job is useful to society	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Standard deviation**
Post-survey (N = 3247)	0.22% (7)	0.28% (9)	3.79% (123)	31.51% (1023)	64.21% (2085)	4.59	.60
Post-survey (N = 2636)	0.30% (8)	0.27% (7)	2.81% (74)	29.74% (784)	66.88% (1763)	4.63	.59

Means above the middle of the scale suggest that the employees generally think that they have a positive impact on society and users through their job.

4.10 Vision Valence

Vision valence concerns how individuals perceive the importance of core organizational goals including the organizational vision. Vision valence is suggested as a significant antecedent of employee motivation (Wright, 2007). Vision valence is also a relevant concept in this project because vision valence is one of the important effects of transformational leadership (Wright et al., 2012) that may mediate the effect of transformational leadership on other organizational outcomes. We draw on previous studies in public sector contexts (e.g., Wright et al., 2012; Van Loon et al, 2013) in our measurement of vision valence.

Table 4.98: Items measuring vision valence

	Employees	Source
pij_vv_3	This organization's vision is important to me personally. *Visionen for denne organisation er vigtig for mig personligt.*	Modified from Van Loon et al., 2013
pij_vv_4	This organization delivers valuable public service. *Denne organisation leverer værdifuld offentlig service.*	Wright et al., 2012
pij_vv_5	I think that the priorities in this organization are important. *Jeg mener, at prioriteterne i denne organisation er vigtige.*	Wright et al., 2012

Note: These questions only appeared for the employees. The answers were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.99: Factor analysis: vision valence as reported by employees in the pre-survey

	Loadings
This organization's vision is important to me personally.	.794
This organization delivers valuable public service.	.857
I think that the priorities in this organization are important.	.877

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3231. Cronbach's alpha = .794.

Table 4.100: Factor analysis: vision valence as reported by employees in the post-survey

	Loadings
This organization's vision is important to me personally.	.817
This organization delivers valuable public service.	.863
I think that the priorities in this organization are important.	.872

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2630. Cronbach's alpha = .804.

All the loadings are above or near .8. This suggests that the questions reflect the same underlying dimension to a high degree. Alpha values around .8 show good internal reliability.

Figure 4.59: Distribution of vision valence as reported by employees in the pre-survey
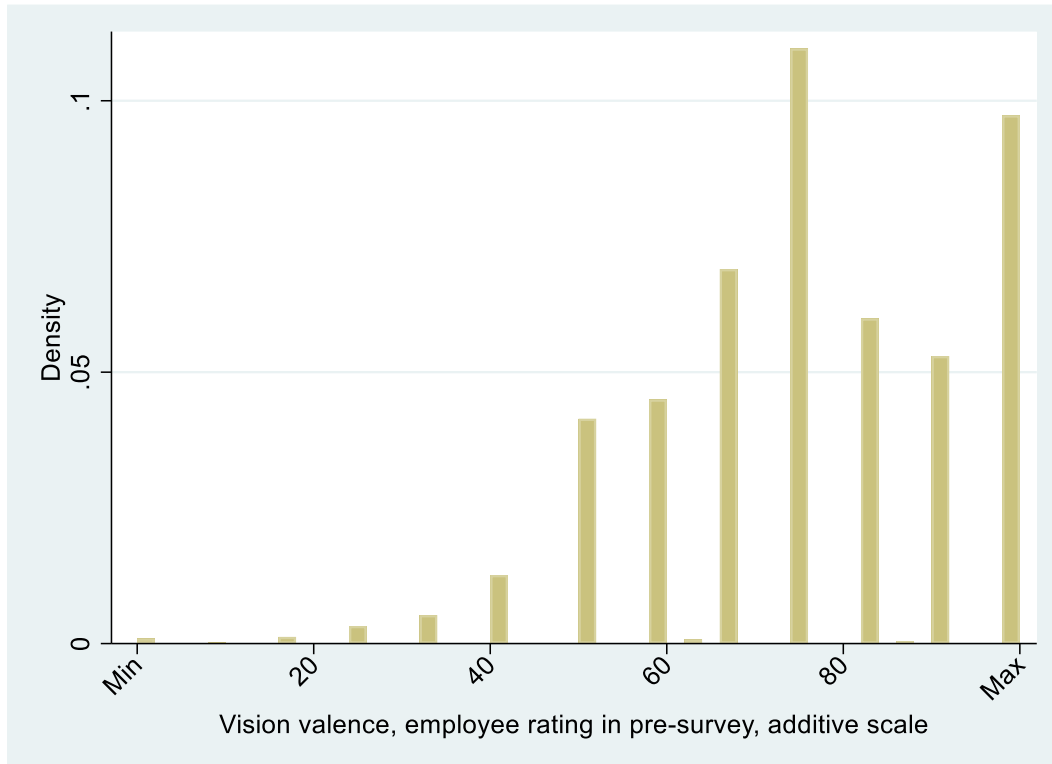
Note: N = 3247. Mean = 75.98, std. dev. = 18.14, min. = 0, max. = 100, skewness = -.52, kurtosis = 3.12. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.60: Distribution of prosocial impact as reported by employees in the post-survey
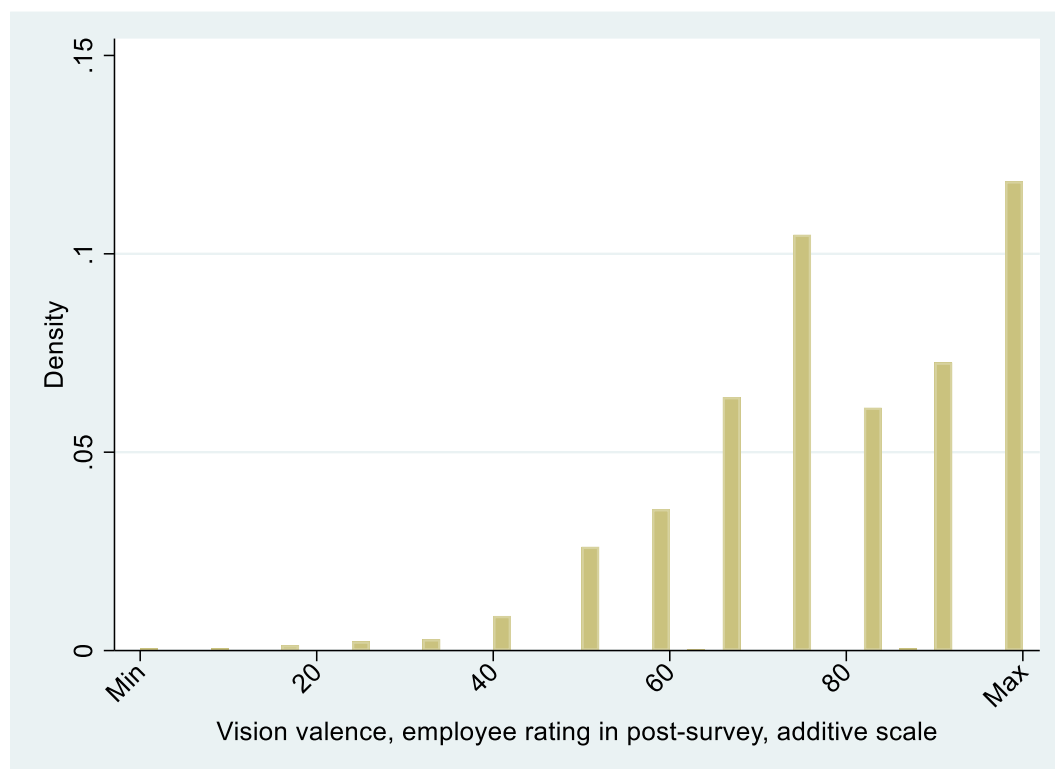
Note: N = 2638. Mean = 79.42, std. dev. = 17.34, min. = 0, max. = 100, skewness = -.74, kurtosis = 3.55. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Both distributions are strongly left-skewed, with peaks near the means and at the upper limit of the scale. This suggests that the employees generally find the core goals of the organization important.

4.11 Value Congruence/Person–Organization Fit

Following previous studies in public administration, we measure value congruence based on employees' assessment of the match between their own values and the organizational values (e.g., Jensen, 2018; Jensen et al., 2019b). This match is conceptualized as person–organization fit in other studies (see Wright & Pandey, 2008). Our measure captures the perceived similarity between the person and the environment (the organization). "Value congruence occurs when characteristics of the individual (employee values) and the environment (organizational values) match" (Jensen et al. 2019b: 14). Values are "conceptions, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of action" (ibid.).

Table 4.101: Items measuring value congruence/person–organization fit

	Employees	Source
Pef_pof_1	My values are very similar to the values of the organization. *Enhedens værdier stemmer godt overens med mine egne.*	Translated and tested by Jensen et al., 2019b based on Cable & Judge, 1996
Pef_pof_2	What this organization stands for is important to me. *Det, enheden står for, er vigtigt for mig.*	Translated and tested by Jensen et al., 2019b based on O'Reilly & Chatman, 1986
Pef_pof_3	I feel a strong sense of belonging to my organization. *Jeg føler en stærk tilknytning til min enhed.*	Translated and tested by Jensen et al., 2019b based on Bright, 2007
Pef_pof_4	I do not feel so comfortable with the values of my workplace. (reverse wording) *Jeg føler mig ikke så godt tilpas med værdierne på min arbejdsplads. (omvendt formuleret)*	Translated and tested by Jensen et al., 2019b based on Bright, 2007

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*). An exception is the item *pef_pof_4*, which was reversed by recoding, so a high value indicated a high degree of value congruence for all items.

Table 4.102: Factor analysis: value congruence/person–organization fit as reported by employees in the pre-survey

	Loadings
My values are very similar to the values of the organization.	.881
What this organization stands for is important to me.	.872
I feel a strong sense of belonging to my organization.	.794
I do not feel so comfortable with the values of my workplace	-.668

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3239. Cronbach's alpha = .806.

Table 4.103: Factor analysis: value congruence/person–organization fit as reported by employees in the post-survey

	Loadings
My values are very similar to the values of the organization.	.874
What this organization stands for is important to me.	.878
I feel a strong sense of belonging to my organization.	.800
I do not feel so comfortable with the values of my workplace	-.559

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2634. Cronbach's alpha = .759.

Across both survey waves, most loadings are high (near or above .8), which indicates that the items perform well at measuring the same underlying concept. The only exception is the last item, which is reversely worded. For this item, loadings are not particularly high and only just satisfactory in the case of employee replies. However, alpha values above .7 show satisfactory internal reliability.

Figure 4.61: Distribution of value congruence as reported by employees in the pre-survey
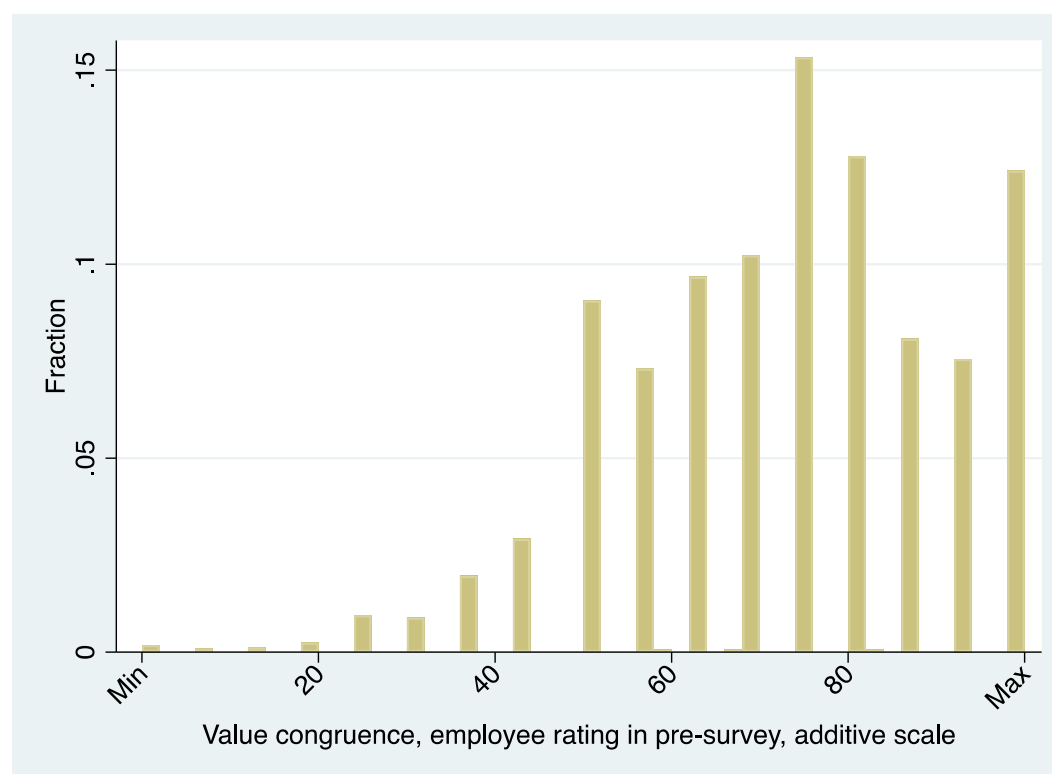
Note: N = 3255. Mean = 72.90, std. dev. = 18.53, min. = 0, max. = 100, skewness = -.47, kurtosis = 3.00. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Figure 4.62: Distribution of value congruence as reported by employees in the post-survey
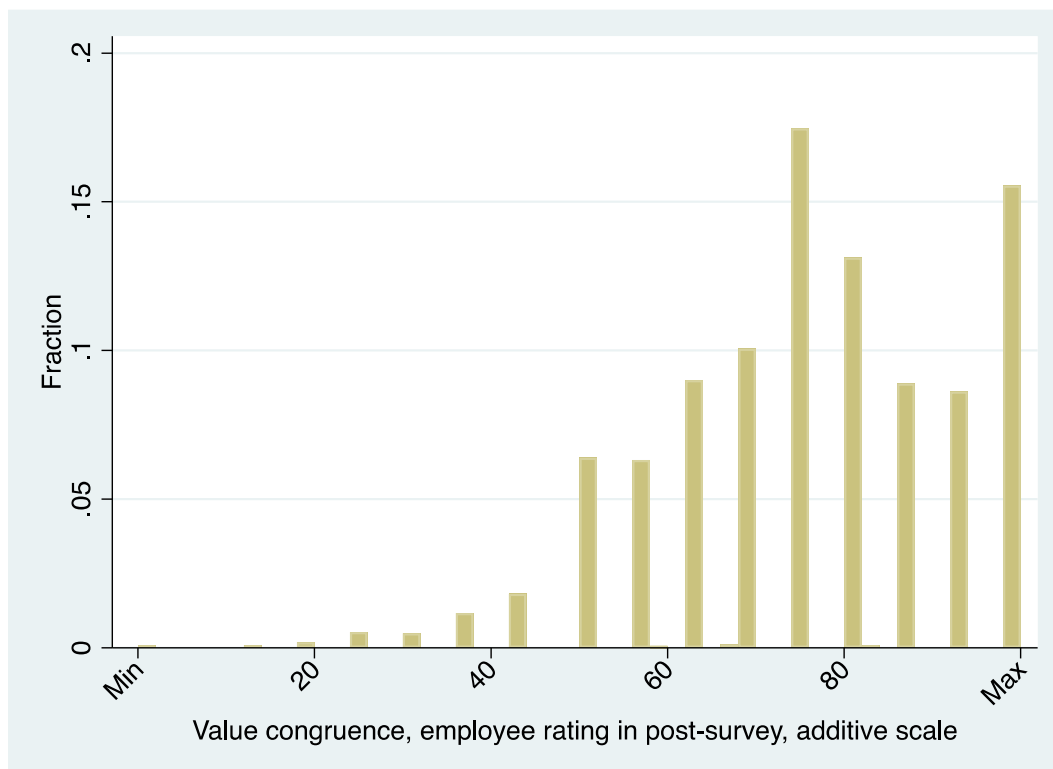
Note: N = 2644. Mean = 76.19, std. dev. = 17.19, min. = 0, max. = 100, skewness = -.50, kurtosis = 3.03. If the respondents had a missing value on only one of the items, the missing value was replaced with the mean value of the two items they answered. Respondents with more than one missing value (i.e., less than three answers) were excluded.

Means in the upper half of the scale indicate that employees generally think that the values of their organization match their own values. Both distributions are slightly left-skewed with a peak near the mean.

4.12 Work Engagement – Overall

Work engagement is defined as "a positive, fulfilling, work-related state of mind that ... refers to a persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior" (Schaufeli & Bakker, 2004: 295). We measure work engagement by the nine-item measure developed by Schaufeli et al. (2006). Theoretically, the measure consists of three dimensions: vigor, dedication, and absorption. Schaufeli et al. (2006) find mixed results for these three dimensions and suggest using a one-dimensional measure of work engagement. We thus calculate both a one-dimensional and a three-dimensional measure. Response categories range from 1 (strongly disagree) to 5 (strongly agree).

Table 4.104: Items measuring work engagement

	Employees	Source
Work_engagement1_1	I feel full of energy when at work. *Jeg føler, at jeg sprudler af energi på mit arbejde.*	Schaufeli et al., 2006
Work_engagement1_2	I feel strong and vigorous when at work. *Jeg føler mig stærk og veloplagt på mit arbejde.*	Schaufeli et al., 2006
Work_engagement1_3	I want to go to work when I get up in the morning. *Jeg har lyst til at gå på arbejde, når jeg står op om morgenen.*	Schaufeli et al., 2006
Work_engagement1_4	I am excited about my job. *Jeg er begejstret for mit arbejde.*	Schaufeli et al., 2006
Work_engagement1_5	My job inspires me. *Mit arbejde inspirerer mig.*	Schaufeli et al., 2006
Work_engagement2_1	I am proud of the work I do. *Jeg er stolt af det arbejde, jeg udfører.*	Schaufeli et al., 2006
Work_engagement2_2	I feel happy when I work hard. *Jeg føler mig glad, når jeg arbejder hårdt.*	Schaufeli et al., 2006
Work_engagement2_3	I get absorbed in the work I do. *Jeg er fordybet i mit arbejde.*	Schaufeli et al., 2006
Work_engagement2_4	I let myself get carried away when I work. *Jeg lader mig rive med, når jeg arbejder.*	Schaufeli et al., 2006

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.105: Correlation matrix. Work engagement items as reported by employees in the pre-survey

	Work_ engagement 1_1	Work_ engagement 1_2	Work_ engagement 1_3	Work_ engagement 1_4	Work_ engagement 1_5
Work_ engagement1_1	1				
Work_ engagement1_2	0.81	1			
Work_ engagement1_3	0.69	0.73	1		
Work_ engagement1_4	0.68	0.68	0.76	1	
Work_ engagement1_5	0.63	0.64	0.68	0.80	1
Work_ engagement2_1	0.51	0.54	0.54	0.60	0.58
Work_ engagement2_2	0.46	0.45	0.44	0.49	0.46
Work_ engagement2_3	0.51	0.52	0.53	0.56	0.57
Work_ engagement2_4	0.43	0.44	0.43	0.47	0.48

Table 4.105 (continued)

	Work_ engagement 2_1	Work_ engagement 2_2	Work_ engagement 2_3	Work_ engagement 2_4
Work_ engagement2_1	1			
Work_ engagement2_2	0.53	1		
Work_ engagement2_3	0.61	0.57	1	
Work_ engagement2_4	0.50	0.52	0.64	1

Note: Table entries are Pearson's correlation coefficients. N = 3118.

Table 4.106: Correlation matrix. Work engagement items as reported by employees in the post-survey

	Work_ engagement 1_1	Work_ engagement 1_2	Work_ engagement 1_3	Work_ engagement 1_4	Work_ engagement 1_5
Work_ engagement1_1	1				
Work_ engagement1_2	0.81	1			
Work_ engagement1_3	0.68	0.73	1		
Work_ engagement1_4	0.68	0.68	0.76	1	
Work_ engagement1_5	0.63	0.62	0.69	0.79	1
Work_ engagement2_1	0.49	0.51	0.52	0.59	0.57
Work_ engagement2_2	0.47	0.47	0.48	0.50	0.46
Work_ engagement2_3	0.50	0.53	0.55	0.58	0.58
Work_ engagement2_4	0.43	0.42	0.45	0.49	0.51

Table 4.106 (continued)

	Work_ engagement 2_1	Work_ engagement 2_2	Work_ engagement 2_3	Work_ engagement 2_4
Work_ engagement2_1	1			
Work_ engagement2_2	0.53	1		
Work_ engagement2_3	0.61	0.57	1	
Work_ engagement2_4	0.50	0.50	0.67	1

Note: Table entries are Pearson's correlation coefficients. N = 2612.

Table 4.107: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.913	19951.157	36	0.000
	Post-survey	0.913	16277.995	36	0.000

Note: H0: variables are not intercorrelated.

Overall, there is considerable variability in the strength of the inter-item correlations for the employees' responses. Item 2.4 exhibits the lowest correlations, most of them falling below $r = 0.5$. However, all correlations reach a satisfactory level of at least $r = 0.4$, and the Bartlett's tests indicate that the correlation matrix is significantly different from an uncorrelated matrix.

The KMO values indicate that a large proportion of variation in the data may be caused by underlying variables, suggesting that the data are suitable for factor analysis.

Table 4.108: Exploratory factor analysis: work engagement as reported by employees in the pre-survey

	Loadings
I feel full of energy when at work.	.815
I feel strong and vigorous when at work.	.831
I want to go to work when I get up in the morning.	.829
I am excited about my job.	.862
My job inspires me.	.834
I am proud of the work I do.	.759
I feel happy when I work hard.	.680
I get absorbed in the work I do.	.770
I let myself get carried away when I work.	.679

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3218. Cronbach's alpha = .922.

Table 4.109: Exploratory factor analysis: work engagement as reported by employees in the post-survey

	Loadings
I feel full of energy when at work.	.809
I feel strong and vigorous when at work.	.824
I want to go to work when I get up in the morning.	.835
I am excited about my job.	.868
My job inspires me.	.834
I am proud of the work I do.	.745
I feel happy when I work hard.	.687
I get absorbed in the work I do.	.783
I let myself get carried away when I work.	.688

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2612. Cronbach's alpha = .923.

Across both survey waves, all loadings reach a satisfactory level, meaning they can be appropriately used to construct a reflective index. There is some variability in the magnitude of the loadings, with the four last items having slightly lower loadings than the first five. The fact that only one factor reaches an eigenvalue above 1 suggests that the items capture the same concept, following Kaiser's criterion.

Figure 4.63: Distribution of work engagement as reported by employees in the pre-survey
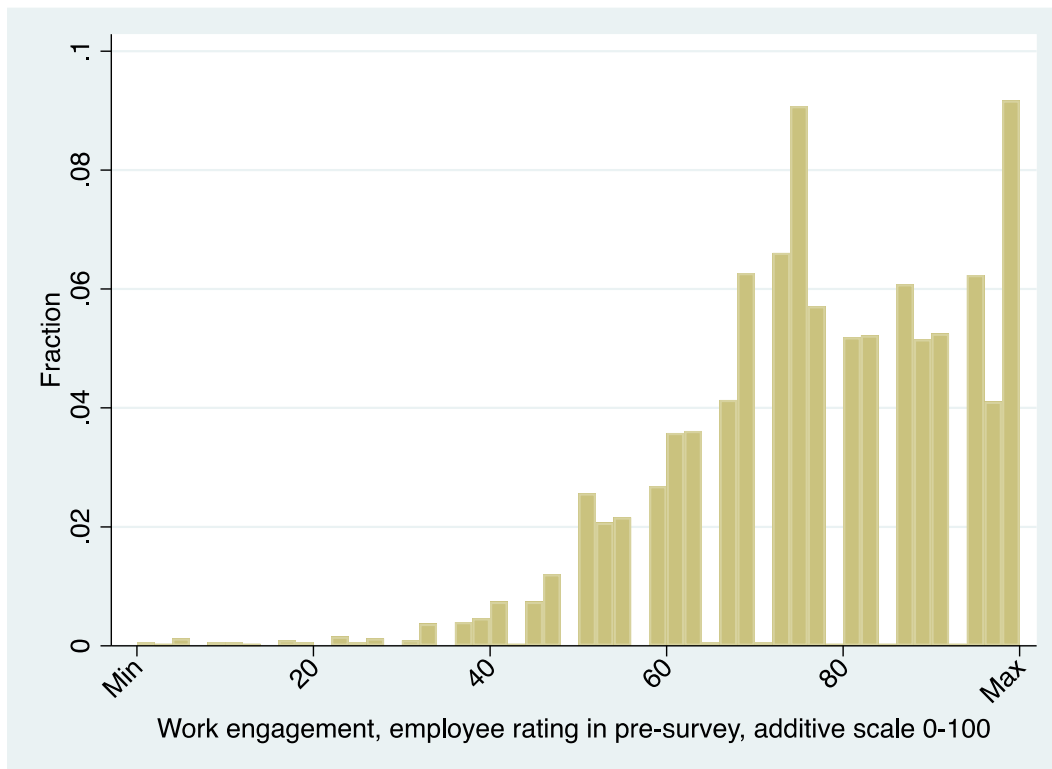
Note: N = 3239. Mean = 76.97, std. dev. = 16.44, min. = 0, max. = 100, skewness = -.75, kurtosis = 3.86. If the respondents had missing values on one to three items, the missing values were replaced with the mean value of the items they answered. Respondents with less than six items answered were excluded from the analysis.

Figure 4.64: Distribution of work engagement as reported by employees in the post-survey
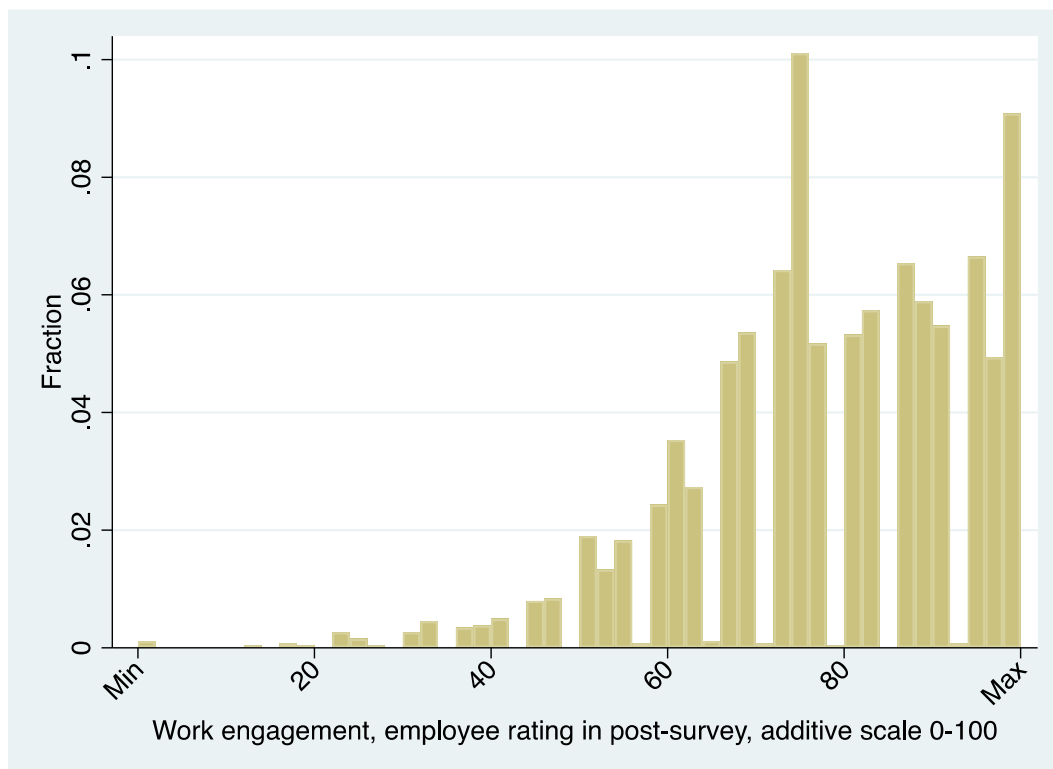
Note: N = 2631. Mean = 78.19, std. dev. = 15.86, min. = 0, max. = 100, skewness = -.81, kurtosis = 3.95. If the respondents had missing values on one to three items, the missing values were replaced with the mean value of the items they answered. Respondents with less than six items answered were excluded from the analysis.

Both distributions are left-skewed with two peaks, one near the mean and one at the upper limit of the scale. Relatively high means of .76 and .78 imply that the employees generally feel highly engaged in their work.

4.12.1 Vigor

Table 4.110: Items measuring work engagement (vigor)

	Employees	Source
Work_engagement1_1	I feel full of energy when at work. *Jeg føler, at jeg sprudler af energi på mit arbejde.*	Schaufeli et al., 2006
Work_engagement1_2	I feel strong and vigorous when at work. *Jeg føler mig stærk og veloplagt på mit arbejde.*	Schaufeli et al., 2006
Work_engagement1_3	I want to go to work when I get up in the morning. *Jeg har lyst til at gå på arbejde, når jeg står op om morgenen.*	Schaufeli et al., 2006

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (helt uenig) = 0, mostly disagree (overvejende uenig) = 25, neither agree nor disagree (hverken enig eller uenig) = 50, mostly agree (overvejende enig) = 75, and strongly agree = 100 (helt enig).

Table 4.111: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.732	6115.18	3	0.000
	Post-survey	0.729	4901.08	3	0.000

Note: H0: variables are not intercorrelated.

The KMO values above .7 indicate that underlying factors may explain a relatively large proportion of the variation in the data. Furthermore, the Bartlett's tests are both significant. Thus, factor analyses can be conducted. Inter-item correlations can be viewed in tables 4.102 and 4.103.

Table 4.112: Exploratory factor analysis: work engagement (vigor) as reported by employees in the pre-survey

	Loadings
I feel full of energy when at work	.915
I feel strong and vigorous when at work	.933
I want to go to work when I get up in the morning	.882

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3368. Cronbach's alpha = .896.

Table 4.113: Exploratory factor analysis: work engagement (vigor) as reported by employees in the post-survey

	Loadings
I feel full of energy when at work.	.914
I feel strong and vigorous when at work.	.933
I want to go to work when I get up in the morning.	.880

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2926. Cronbach's alpha = .894.

Across both survey waves, all items exhibit high loadings, suggesting they measure the same underlying concept. Furthermore, the loadings are even higher than in the collective analysis for all work engagement items in the prior section. The alpha values show good internal reliability.

Figure 4.65: Distribution of work engagement (vigor) as reported by employees in the pre-survey
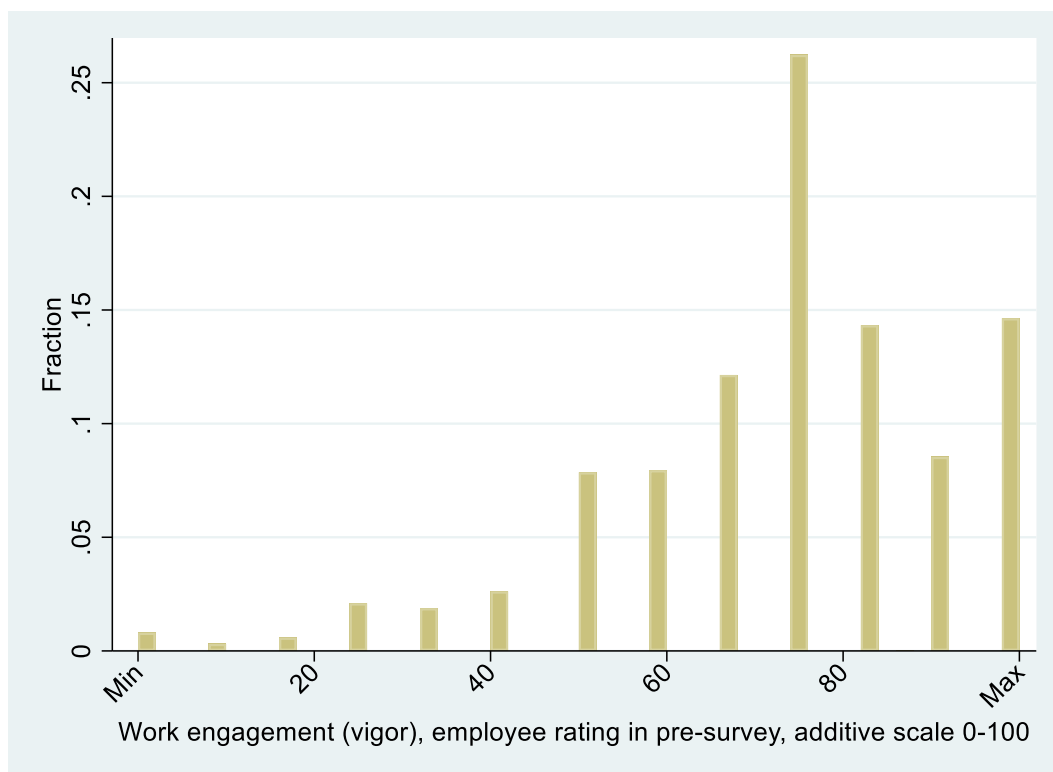
Note: N = 3245. Mean = 73.13, std. dev. = 19.85, min. = 0, max. = 100, skewness = -.91, kurtosis = 4.14. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.
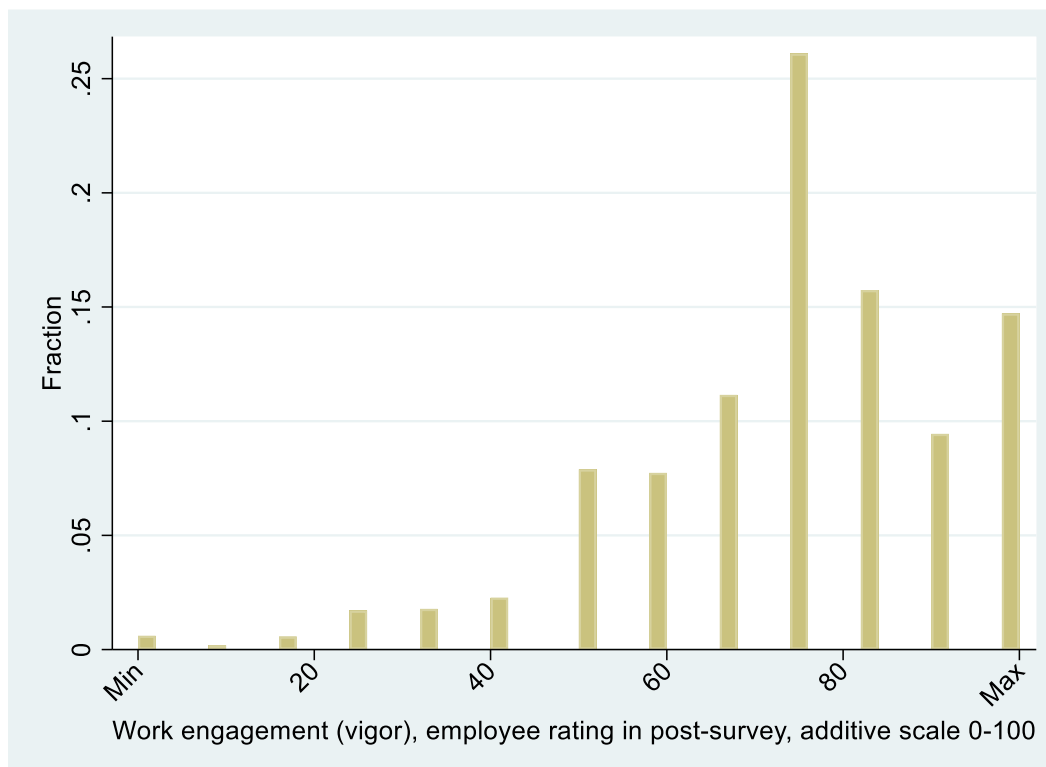
Note: N = 2626. Mean = 74.11, std. dev. = 19.18, min. = 0, max. = 100, skewness = -.90, kurtosis = 4.15. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Both distributions for the employee replies are left-skewed with peaks near the mean. Means above 0.7 indicate that respondents feel vigorous in their work to a relatively large degree. However, the means are slightly lower than for the collective work engagement index.

4.12.2 Dedication

Table 4.114: Items measuring work engagement (dedication)

	Employees	Source
Work_engagement1_4	I am excited about my job. *Jeg er begejstret for mit arbejde.*	Schaufeli et al., 2006
Work_engagement1_5	My job inspires me. *Mit arbejde inspirerer mig*	Schaufeli et al., 2006
Work_engagement2_1	I am proud of the work I do. *Jeg er stolt af det arbejde, jeg udfører.*	Schaufeli et al., 2006

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.115: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.692	4872.32	3	0.000
	Post-survey	0.687	3851.14	3	0.000

Note: H0: variables are not intercorrelated.

The KMO values are above the satisfactory limit of .6. The Bartlett's tests are both significant, implying that the inter-item correlations are significantly different from an uncorrelated matrix. Thus, the data are suitable for factor analysis. Inter-item correlations can be viewed in tables 4.102 and 4.103.

Table 4.116: Exploratory factor analysis: work engagement (dedication) as reported by employees in the pre-survey

	Loadings
I am excited about my job.	.916
My job inspires me.	.908
I am proud of the work I do.	.816

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3232. Cronbach's alpha = .855.

Table 4.117: Exploratory factor analysis: work engagement (dedication) as reported by employees in the post-survey

	Loadings
I am excited about my job.	.915
My job inspires me.	.904
I am proud of the work I do.	.809

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2627. Cronbach's alpha = .850.

Across both survey waves, all three items exhibit high loadings, suggesting that they measure the same latent dimension. The loading for the third item is slightly lower than for the two others. The alpha values show good internal reliability.

Figure 4.67: Distribution of work engagement (dedication) as reported by employees in the pre-survey
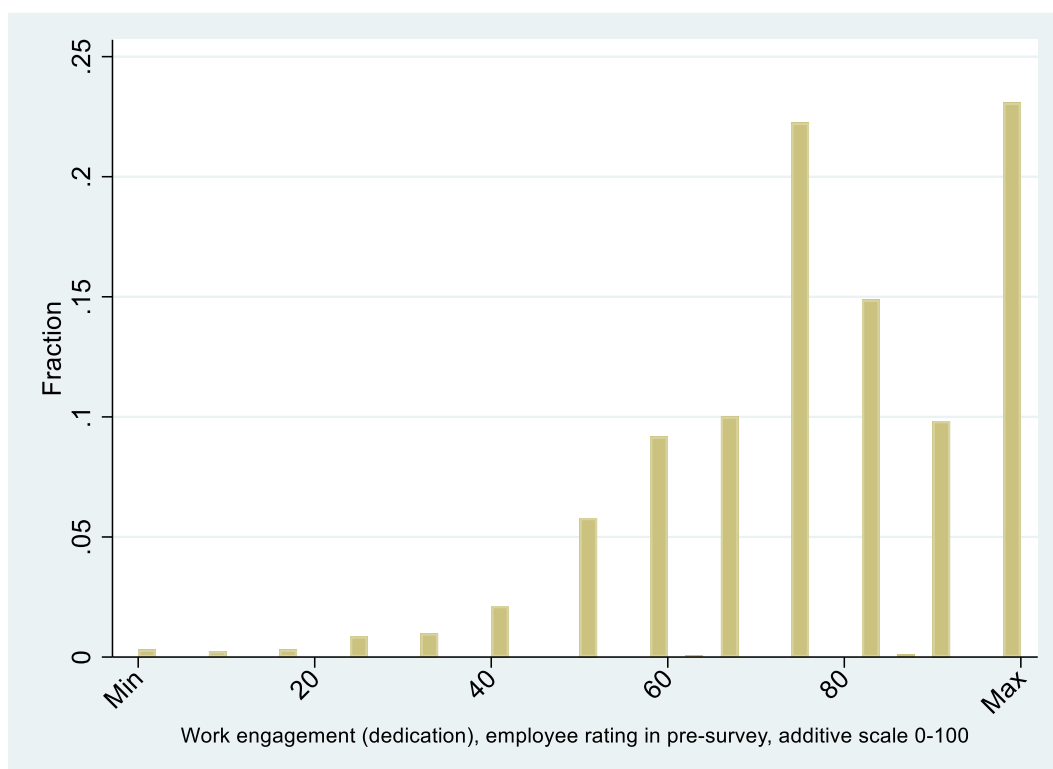
Note: N = 3256. Mean = 77.71, std. dev. = 18.56, min. = 0, max. = 100, skewness = -.83, kurtosis = 3.9. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.68: Distribution of work engagement (dedication) as reported by employees in the post-survey
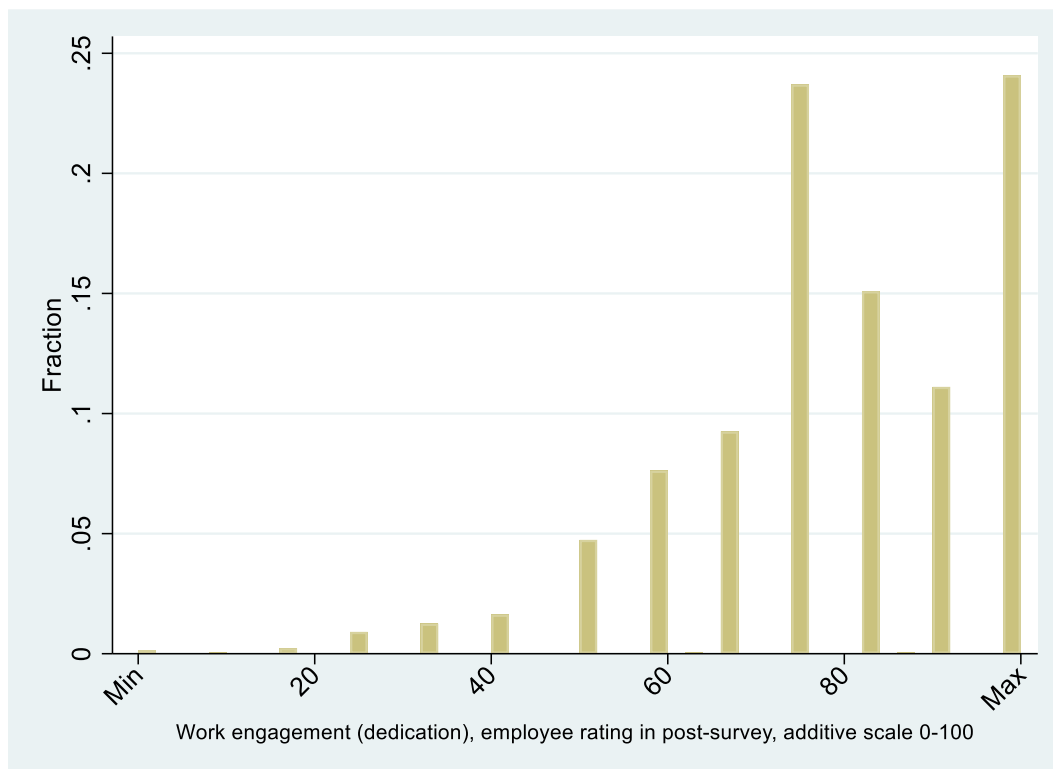
Note: N = 2637. Mean = 79.1, std. dev. = 17.75, min. = 0, max. = 100, skewness = -.84, kurtosis = 3.80. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Both distributions are left-skewed with two peaks, one near the mean and one at the upper limit of the scale. The high means suggest that the employees generally feel dedicated to their work.

4.12.3 Absorption

Table 4.118: Items measuring work engagement (absorption)

	Employees	Source
Work_engagement2_2	I feel happy when I work hard. *Jeg føler mig glad, når jeg arbejder hårdt.*	Schaufeli et al., 2006
Work_engagement2_3	I get absorbed in the work I do. *Jeg er fordybet i mit arbejde.*	Schaufeli et al., 2006
Work_engagement2_4	I let myself get carried away when I work. *Jeg lader mig rive med, når jeg arbejder.*	Schaufeli et al., 2006

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (*helt uenig*) = 0, mostly disagree (*overvejende uenig*) = 25, neither agree nor disagree (*hverken enig eller uenig*) = 50, mostly agree (*overvejende enig*) = 75, and strongly agree = 100 (*helt enig*).

Table 4.119: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.699	3187.58	3	0.000
	Post-survey	0.690	2669.45	3	0.000

Note: H0: variables are not intercorrelated.

The KMO values are both satisfactory, and the Bartlett's tests are significant, which means that the data are fit for factor analysis. Inter-item correlations can be viewed in tables 4.102 and 4.103.

Table 4.120: Exploratory factor analysis: work engagement (absorption) as reported by employees in the pre-survey

	Loadings
I feel happy when I work hard.	.813
I get absorbed in the work I do.	.875
I let myself get carried away when I work.	.853

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3244. Cronbach's alpha = .801.

Table 4.121: Exploratory factor analysis: work engagement (absorption) as reported by employees in the post-survey

	Loadings
I feel happy when I work hard.	.803
I get absorbed in the work I do.	.885
I let myself get carried away when I work.	.86

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2628. Cronbach's alpha = .802.

Across both survey waves, all items exhibit loadings around .8 or slightly higher, suggesting that the items are highly correlated with the same latent dimension. The alpha values show good internal reliability.

Figure 4.69: Distribution of work engagement (absorption) as reported by employees in the pre-survey
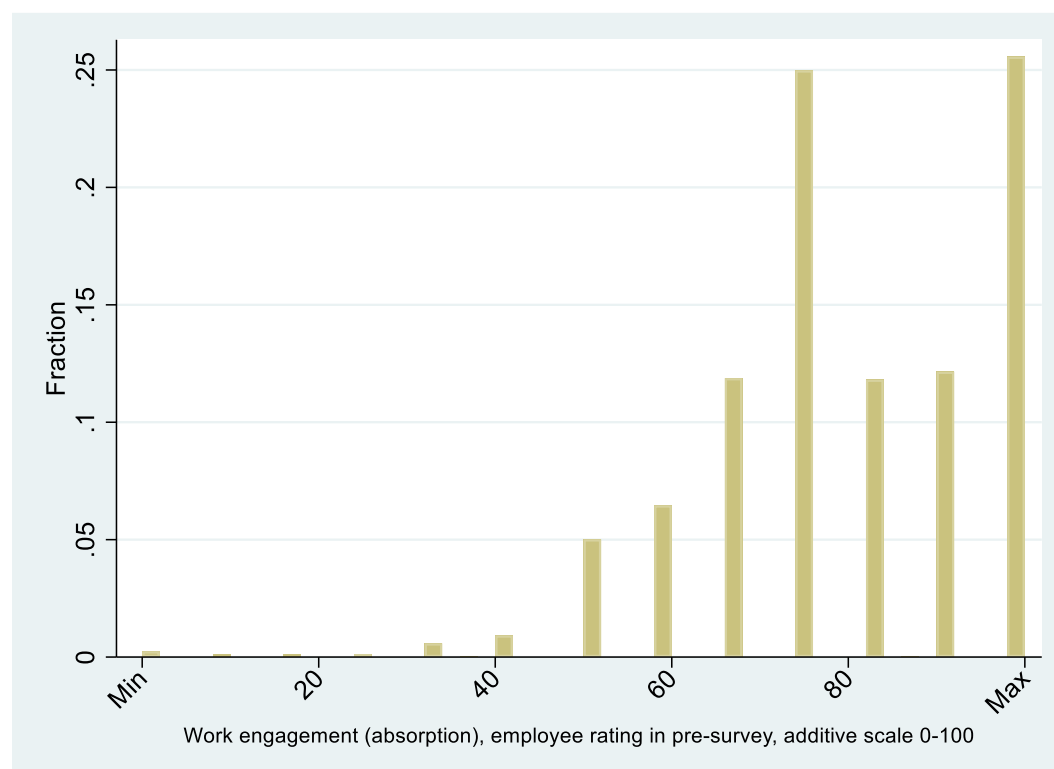
Note: N = 3250. Mean = 80.16, std. dev. = 16.67, min. = 0, max. = 100, skewness = -.73, kurtosis = 3.94. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Figure 4.70: Distribution of work engagement (absorption) as reported by employees in the post-survey
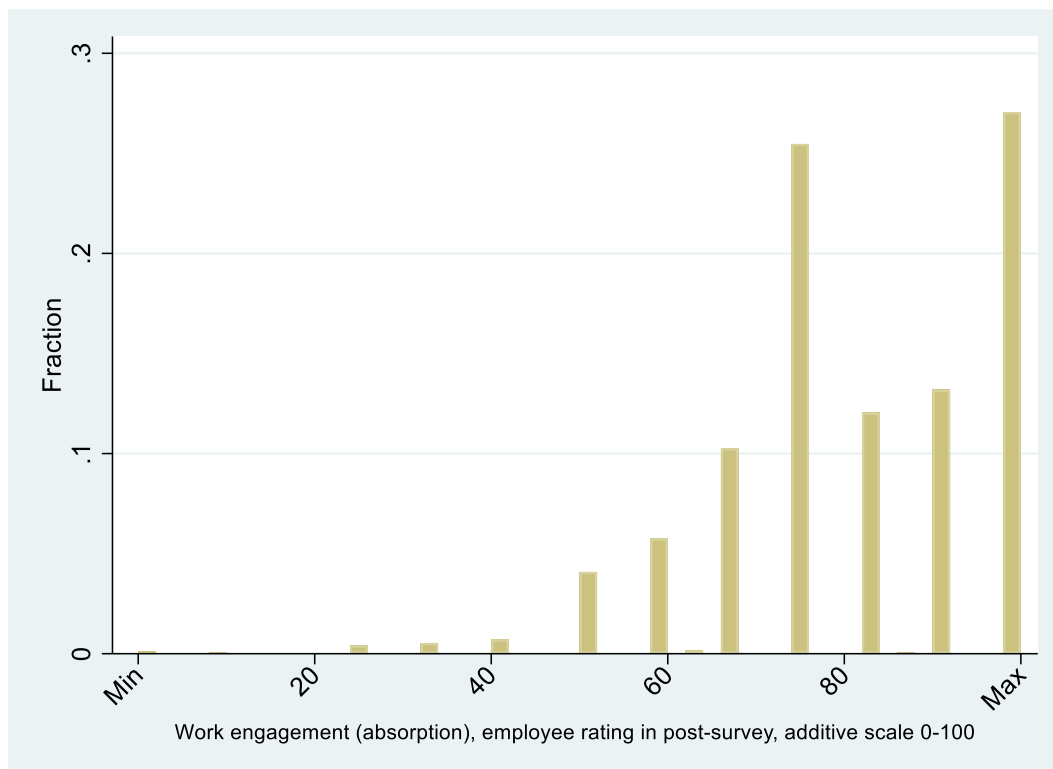
Note: N = 2638. Mean = 81.31, std. dev. = 16.15, min. = 0, max. = 100, skewness = -.74, kurtosis = 3.74. If the respondents had a missing value on one item, the missing value was replaced with the mean value of the items they answered. Respondents with more than one missing value (i.e., less than two answers) were excluded.

Both distributions are left-skewed with peaks near the mean and at the upper limit of the scale. Means above than .8 suggest that the employees generally feel absorbed in their work. Furthermore, the means are even higher than for the other two subdimensions of work engagement.

4.13 Psychological Needs – Self-Determination Theory and the Need for Meaning

The satisfaction of basic psychological needs has been compellingly linked to employees' persistence, productivity, and mental well-being (Ryan & Deci, 2017). Psychological needs satisfaction is a central concept in public leadership research (Vandenabeele, 2014; Battaglio et al, 2021) and has been suggested as a mediator of the positive effects of transformational leadership on intrinsic motivation and public service motivation (Jensen & Bro, 2018).

In their influential work on self-determination theory, Ryan and Deci (2017: 564) identify three psychological needs that are inherent in human nature across political, cultural, or economic context. First, the need for autonomy "describes the need of individuals to experience self-endorsement and ownership of their actions." Second, the need for competence "refers to feeling effective in one's interactions with the social environment—that is, experiencing opportunities and supports for the exercise, expansion, and expression of one's capacities and talents" (ibid.: 86). Lastly, the need for relatedness "refers to both experiencing others as responsive and sensitive and

being able to be responsive and sensitive to them—that is, feeling connected and involved with others and having a sense of belonging" (ibid.: 86).

4.13.1 The Need for Meaning as a Fourth Basic Need

With a reference to Victor Frankl (1959), the literature on psychological needs suggests meaning as a fourth basic need along with the need for autonomy, competence, and relatedness (Tønnesvang & Schou, 2022; Park & George, 2020). The need for meaning is related to the self-transcendent nature of human existence, and being human means to reach out for meaning and purpose in life and to be directed towards something other than oneself (ibid.; Frankl, 1966: 21). The need for meaning also plays a central role in how the literature on existentialism (Søren Kierkegaard, Martin Heidegger, and Jean Paul Sartre) conceives humans as sense-making beings, and how existential psychology has identified basic life conditions (Tønnesvang & Schou, 2022; Yalom, 1980). Tønnesvang and colleagues (2023: chapter 3) argue that the need for meaning is inherent in human nature and manifests as a structural necessity of (1) having ideals and values that guide your life (Riker, 1996), (2) having horizons of meaning beyond yourself in reference to which you can understand yourself as a human being (Taylor, 1991), and (3) organizing society and organizations together with other human beings (Redfield, 1960). This need for meaning implies that humans actively direct themselves towards and let themselves be directed by the possible meaning structures that exist in their surroundings (ibid.).

We study the significance of all four needs based on selected items from existing empirical tools for measuring autonomy, competence, relatedness, and meaning.

4.13.2 Satisfaction of the Need for Autonomy

Table 4.122: Psychological needs – items measuring satisfaction of need for autonomy

	Employees	Source
jobforhold1_1	I feel like I have a lot of influence in deciding how my job gets done. *Jeg føler, at jeg har stor indflydelse på, hvordan mit arbejde udføres.*	Boye et al., 2015
jobforhold1_2	I am free to express my ideas and opinions in my job. *Jeg har frihed til at udtrykke mine ideer og holdninger på arbejdet.*	Boye et al., 2015
jobforhold1_3	There are good opportunities for me to decide for myself how to go about my work. *Jeg har gode muligheder for selv at bestemme, hvordan jeg udfører mit arbejde.*	Boye et al., 2015

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (helt uenig) = 0, mostly disagree (overvejende uenig) = 25, neither agree nor disagree (hverken enig eller uenig) = 50, mostly agree (overvejende enig) = 75, and strongly agree = 100 (helt enig).

Table 4.123: Correlation matrix, satisfaction of need for autonomy as reported by employees in the pre-survey

	jobforhold1_1	jobforhold1_2	jobforhold1_3
jobforhold1_1	1		
jobforhold1_2	0.65	1	
jobforhold1_3	0.76	0.62	1

Note: Table entries are Pearson's correlation coefficients. N = 3251.

Table 4.124: Correlation matrix, satisfaction of need for autonomy as reported by employees in the post-survey

	jobforhold1_1	jobforhold1_2	jobforhold1_3
jobforhold1_1	1		
jobforhold1_2	0.62	1	
jobforhold1_3	0.77	0.58	1

Note: Table entries are Pearson's correlation coefficients. N = 2942.

Table 4.121: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.716	4796.34	3	0.000
	Post-survey	0.701	3733.97	3	0.000

Note: H0: variables are not intercorrelated.

Across the two survey waves, the inter-item correlations are relatively strong (.60 or higher). KMO values above .7 indicate that a lot of variation in the data may be caused by underlying variables. Furthermore, the Bartlett's tests are significant, so the data should be suitable for factor analysis.

Table 4.125: Exploratory factor analysis: satisfaction of need for autonomy as reported by employees in the pre-survey

	Loadings
I feel like I have a lot of influence in deciding how my job gets done.	.910
I am free to express my ideas and opinions in my job.	.846
There are good opportunities for me to decide for myself how to go about my work.	.9

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3251. Cronbach's alpha = .861.

Table 4.126: Exploratory factor analysis: satisfaction of need for autonomy as reported by employees in the post-survey

	Loadings
I feel like I have a lot of influence in deciding how my job gets done.	.911
I am free to express my ideas and opinions in my job.	.826
There are good opportunities for me to decide for myself how to go about my work.	.896

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2646. Cronbach's alpha = .852.

Across survey waves, all loadings are above .8, suggesting that the latent variable is strongly correlated with the items used to measure it. The alpha values show good internal reliability.

Figure 4.71: Satisfaction of need for autonomy as reported by employees in the pre-survey, distribution
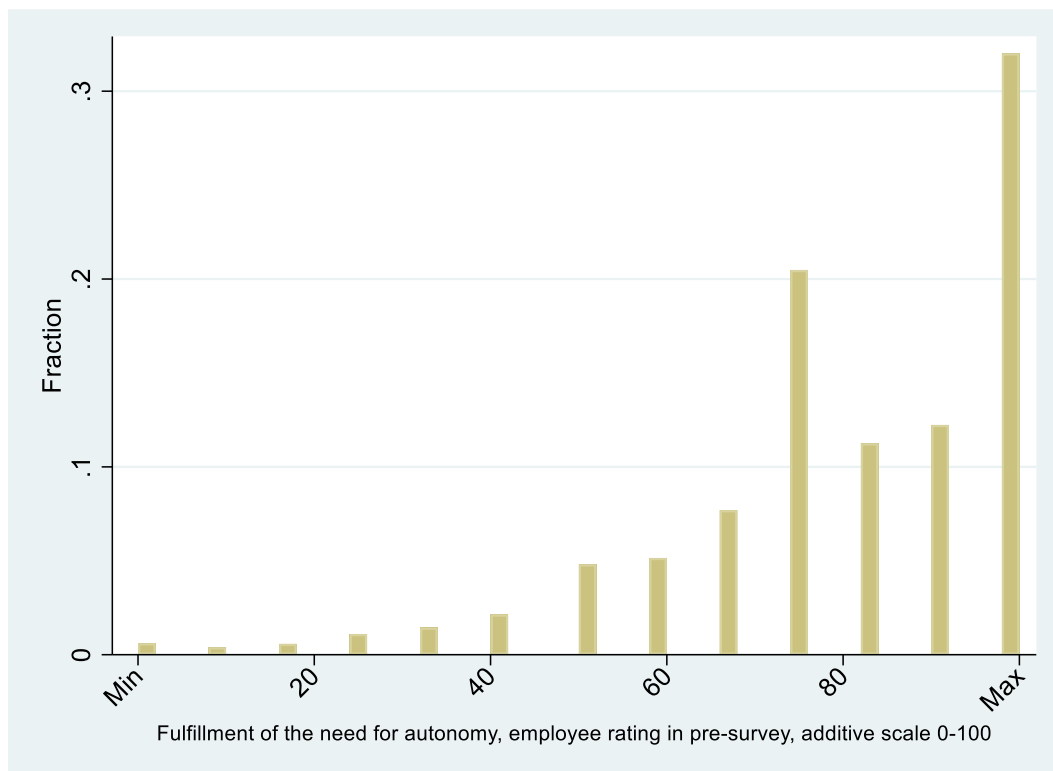
Note: N = 3261. Mean = 80.34, std. dev. = 20.30, min. = 0, max. = 100, skewness = -1.23, kurtosis = 4.63.

Figure 4.72: Satisfaction of need for autonomy as reported by employees in the post-survey, distribution
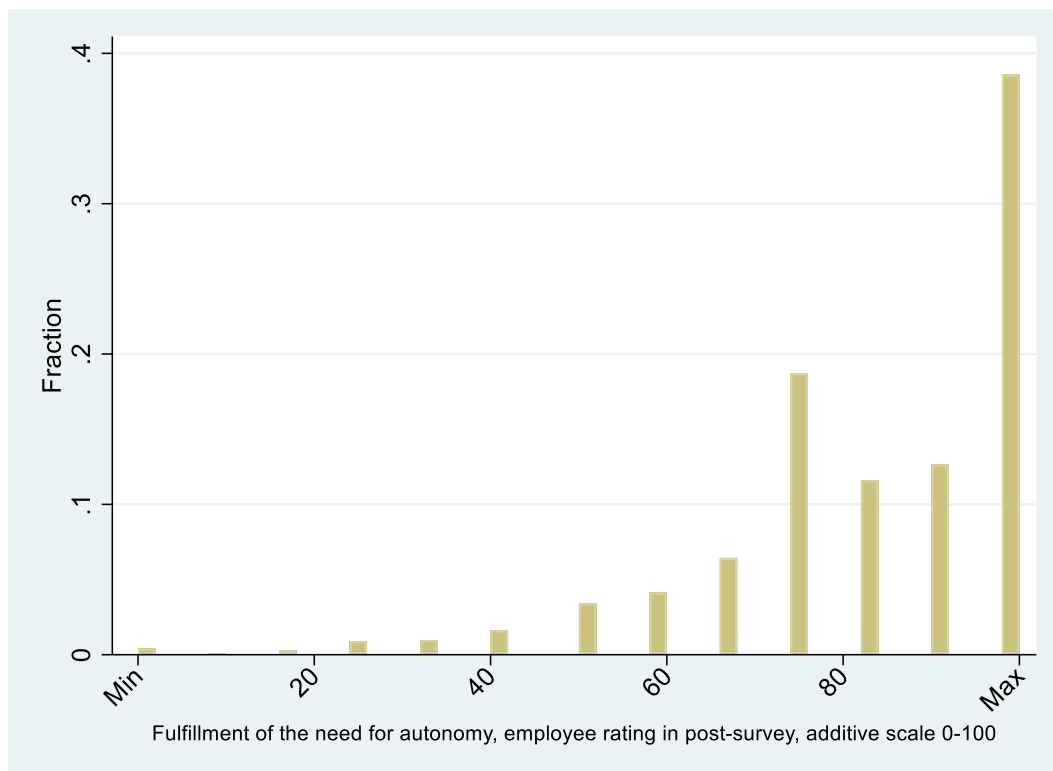
Note: N = 2653. Mean = 83.70, std. dev. = 18.47, min. = 0, max. = 100, skewness = -1.37, kurtosis = 5.21.

Both distributions are strongly left-skewed with peaks at the upper limit of the scale. Means above 80 indicate that respondents generally perceive their need for autonomy as highly fulfilled.

4.13.3 Satisfaction of the Need for Competence

Table 4.127: Psychological needs – items measuring satisfaction of need for competence

	Employees	Source
jobforhold1_4	I feel very competent when I am at work. *Jeg føler mig meget kompetent, når jeg er på arbejde.*	Boye et al., 2015
jobforhold1_5	People at work tell me I am good at what I do. *Folk på mit arbejde fortæller mig, at jeg er god til det, jeg laver.*	Boye et al., 2015
jobforhold1_6	Most days, I feel a sense of accomplishment from working. *De fleste dage har jeg en følelse af at have præsteret noget på mit arbejde.*	Boye et al., 2015

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (helt uenig) = 0, mostly disagree (overvejende uenig) = 25, neither agree nor disagree (hverken enig eller uenig) = 50, mostly agree (overvejende enig) = 75, and strongly agree = 100 (helt enig).

Table 4.128: Correlation matrix, satisfaction of need for competence as reported by employees in the pre-survey

	jobforhold1_4	jobforhold1_5	jobforhold1_6
jobforhold1_4	1		
jobforhold1_5	0.80	1	
jobforhold1_6	0.67	0.68	1

Note: Table entries are Pearson's correlation coefficients. N = 3262.

Table 4.129: Correlation matrix, satisfaction of need for competence as reported by employees in the post-survey

	jobforhold1_4	jobforhold1_5	jobforhold1_6
jobforhold1_4	1		
jobforhold1_5	0.78	1	
jobforhold1_6	0.66	0.63	1

Note: Table entries are Pearson's correlation coefficients. N = 2650.

Table 4.130: Test of assumptions for factor analysis

| | | Kaiser-Meyer-Olkin Measure of Sampling Adequacy | Bartlett's Test of Sphericity | | |
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.725	5558.57	3	0.000
	Post-survey	0.720	4065.94	3	0.000

Note: H0: variables are not intercorrelated.

Relatively high inter-item correlations imply strong covariance in the employee replies across the different items. Both of the KMO values are satisfactory to proceed to factor analysis, as is the p-value in the Bartlett's tests.

Table 4.131: Exploratory factor analysis: satisfaction of need for competence as reported by employees in the pre-survey

	Loadings
I feel very competent when I am at work.	.915
People at work tell me I am good at what I do.	.920
Most days, I feel a sense of accomplishment from working.	.864

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3391. Cronbach's alpha = .868.

Table 4.132: Exploratory factor analysis: satisfaction of need for competence as reported by employees in the post-survey

	Loadings
I feel very competent when I am at work.	.915
People at work tell me I am good at what I do.	.907
Most days, I feel a sense of accomplishment from working.	.853

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3262. Cronbach's alpha = .869.

Across the two surveys waves, all factor loadings are high, reaching a minimum of .85. This suggests that all three items can be used to construct a reflective index. The alpha values show good internal reliability.

Figure 4.73: Satisfaction of need for competence as reported by employees in the pre-survey, distribution

Fulfillment of the need for competence, employee rating in pre-survey, additive scale 0-100
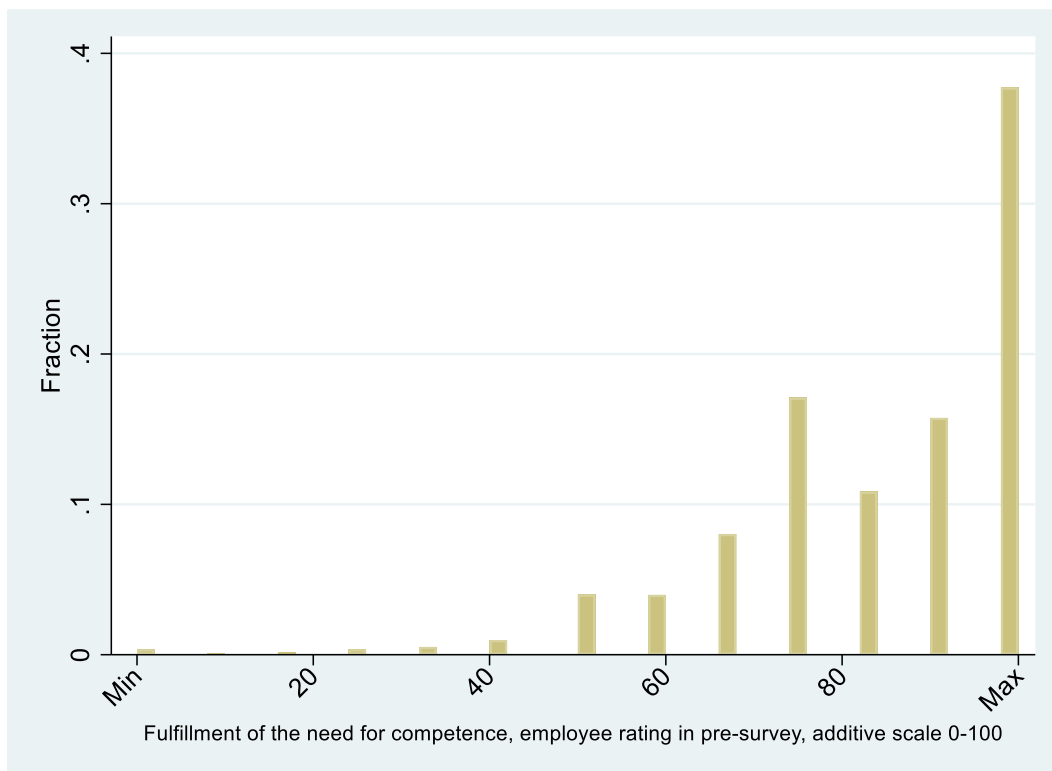
Note: N = 3262. Mean = 84.45 std. dev. = 17.33, min. = 0, max. = 100, skewness = -1.34, kurtosis = 5.35.

Figure 4.74: Satisfaction of need for competence as reported by employees in the post-survey, distribution
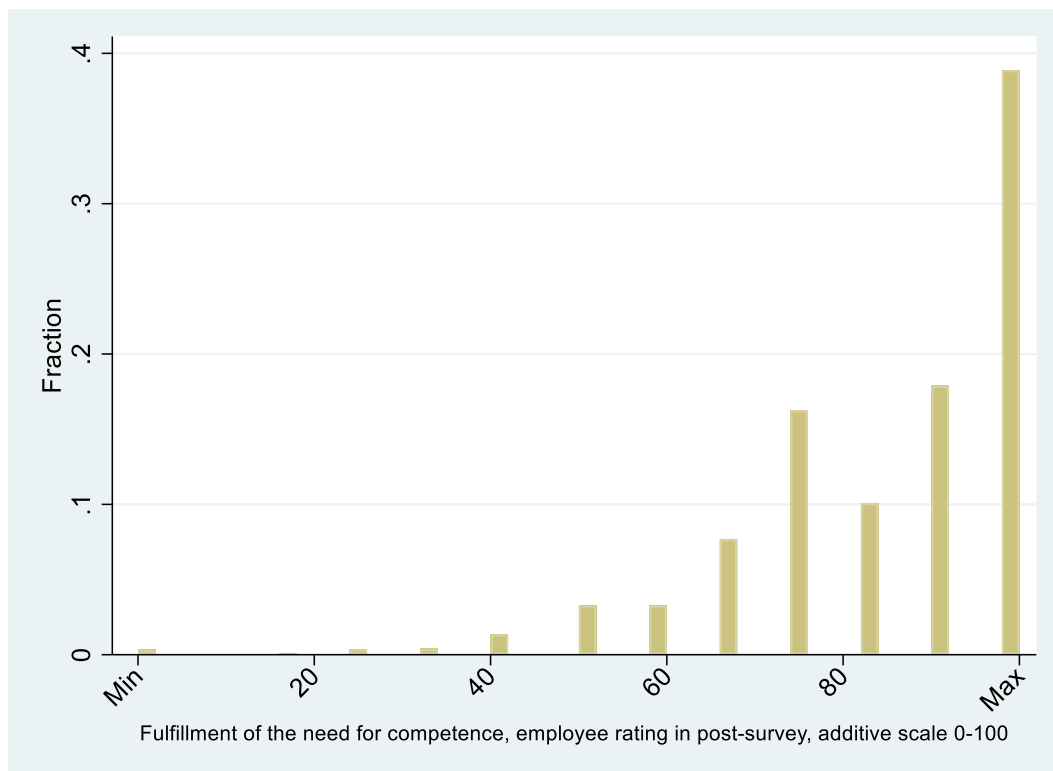
Note: N = 2654. Mean = 85.41 std. dev. = 16.77, min. = 0, max. = 100, skewness = -1.40, kurtosis = 5.50.

For both survey waves, the distributions are strongly left-skewed with large peaks at the upper limit of the scale. This suggests that employees generally perceive their need for competence as being fulfilled.

4.13.4 Satisfaction of the Need for Relatedness

Table 4.133: Psychological needs – items measuring fulfilment of the need for relatedness

	Employees	Source
Jobforhold2_1	I really like the people I work with. *Jeg kan rigtig godt lide de mennesker, som jeg arbejder sammen med.*	Boye et al., 2015
Jobforhold2_2	The people I work with seem to like me. *De mennesker, jeg arbejder sammen med, virker til at kunne lide mig.*	Boye et al., 2015
Jobforhold2_3	I feel connected to the people I work with. *Jeg føler mig knyttet til de mennesker, jeg arbejder sammen med.*	Boye et al., 2015

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (helt uenig) = 0, mostly disagree (overvejende uenig) = 25, neither agree nor disagree (hverken enig eller uenig) = 50, mostly agree (overvejende enig) = 75, and strongly agree = 100 (helt enig).

Table 4.134: Correlation matrix, relatedness to users as reported by employees in the pre-survey

	Jobforhold2_1	Jobforhold2_2	Jobforhold2_3
Jobforhold2_1	1		
Jobforhold2_2	0.48	1	
Jobforhold2_3	0.54	0.41	1

Note: Table entries are Pearson's correlation coefficients. N = 3252.

Table 4.135: Correlation matrix, relatedness to users as reported by employees in the post-survey

	Jobforhold2_1	Jobforhold2_2	Jobforhold2_3
Jobforhold2_1	1		
Jobforhold2_2	0.49	1	
Jobforhold2_3	0.56	0.49	1

Note: Table entries are Pearson's correlation coefficients. N = 2639.

Table 4.136: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.669	2217.21	3	0.000
	Post-survey	0.691	1959.82	3	0.000

Note: H0: variables are not intercorrelated.

Across the two survey waves, the inter-item correlations are all satisfactory, though not particularly high. The KMO values also reach the satisfactory level of 0.6. A p-value below 0.001 in the Bartlett's tests indicates a low probability that these parameters are, in fact, uncorrelated in the population.

Table 4.137: Exploratory factor analysis: satisfaction of need for relatedness as reported by employees in the pre-survey

	Loadings
I really like the people I work with.	.846
The people I work with seem to like me.	.769
I feel connected to the people I work with.	.806

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3252. Cronbach's alpha = .725.

Table 4.138: Exploratory factor analysis: satisfaction of need for relatedness as reported by employees in the post-survey

	Loadings
I really like the people I work with.	.836
The people I work with seem to like me.	.796
I feel connected to the people I work with.	.834

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2639. Cronbach's alpha = .752.

All loadings are fairly high, suggesting that the questions measure the same concept to a satisfactory degree. The alpha values show satisfactory internal reliability.

Figure 4.75: Satisfaction of need for relatedness as reported by employees in the pre-survey, distribution
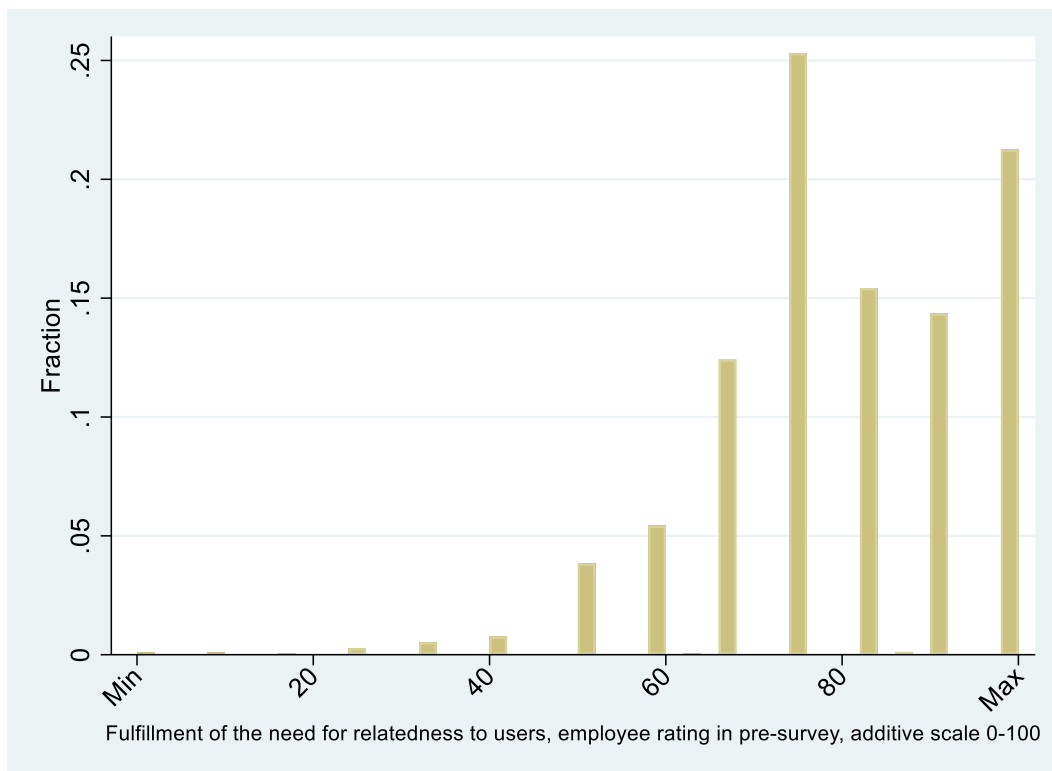
Note: N = 3261. Mean = 80.33 std. dev. = 15.46, min. = 0, max. = 100, skewness = -.70, kurtosis = 3.95.

Figure 4.76: Satisfaction of need for relatedness as reported by employees in the post-survey, distribution
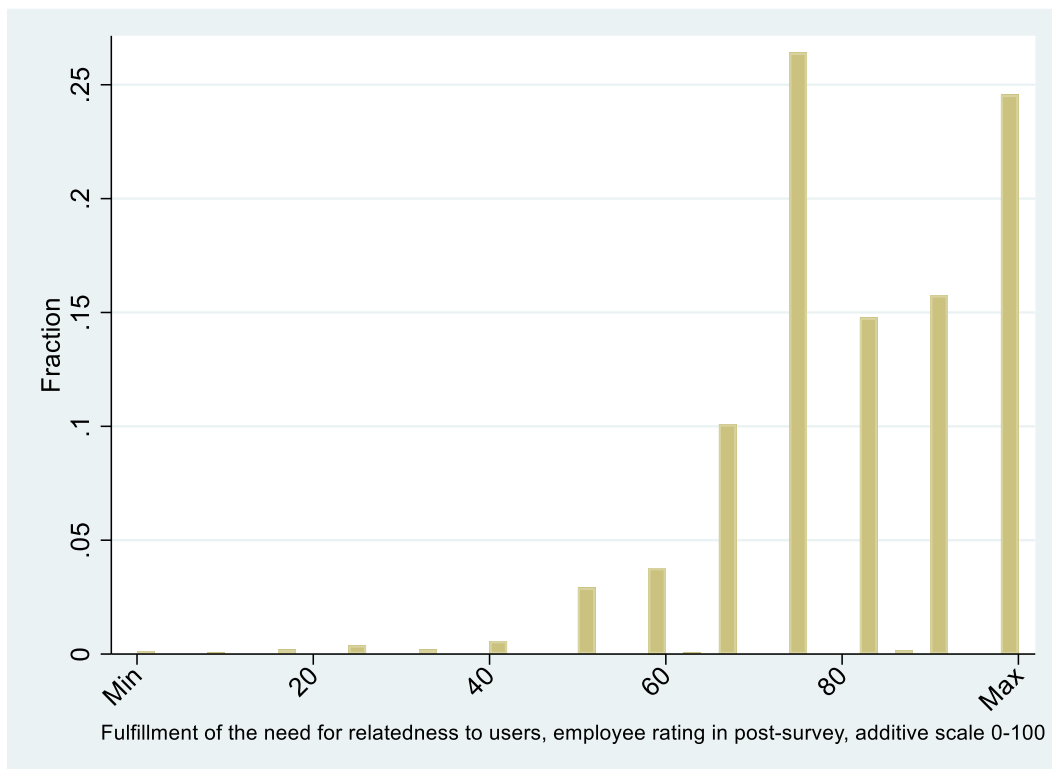
Note: N = 2647. Mean = 82.11, std. dev. = 15.11, min. = 0, max. = 100, skewness = -.92, kurtosis = 4.81.

Both distributions are left-skewed with means above 80. This indicates that the employees generally feel their need for relatedness to users is highly fulfilled.

4.13.5 Satisfaction of the Need for Meaning

Table 4.139: Psychological needs – items measuring satisfaction of need for meaning

	Employees	Source
Jobforhold2_4	My job is connected to what I believe is important in life. *Mit arbejde er forbundet med det, jeg synes er vigtigt i livet.*	Gregersen et al., 2021
Jobforhold2_5	I see a connection between my job and the best interests of society. *Jeg ser en forbindelse mellem mit arbejde og samfundets bedste.*	Gregersen et al., 2021
Jobforhold2_6	My job makes personal sense. *Mit arbejde giver personlig mening.*	Gregersen et al., 2021

Note: These questions only appeared for the employees. Answers were assigned the following values for the index construction: strongly disagree (helt uenig) = 0, mostly disagree (overvejende uenig) = 25, neither agree nor disagree (hverken enig eller uenig) = 50, mostly agree (overvejende enig) = 75, and strongly agree = 100 (helt enig).

Table 4.140: Correlation matrix, satisfaction of the need for meaning as reported by employees in the pre-survey

	Jobforhold2_4	Jobforhold2_5	Jobforhold2_6
Jobforhold2_4	1		
Jobforhold2_5	0.67	1	
Jobforhold2_6	0.73	0.67	1

Note: Table entries are Pearson's correlation coefficients. N = 3248.

Table 4.141: Correlation matrix, satisfaction of the need for meaning as reported by employees in the post-survey

	Jobforhold2_4	Jobforhold2_5	Jobforhold2_6
Jobforhold2_4	1		
Jobforhold2_5	0.69	1	
Jobforhold2_6	0.73	0.70	1

Note: Table entries are Pearson's correlation coefficients. N = 2640.

Table 4.142: Test of assumptions for factor analysis

		Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
			Chi-square	*Degrees of freedom*	*p-value*
Employees	Pre-survey	0.735	4828.41	3	0.000
	Post-survey	0.741	4162.95	3	0.000

Note: H0: variables are not intercorrelated.

The inter-item correlations are strong, all being above 0.65. Both the KMO values and the results of the Bartlett's test are satisfactory.

Table 4.143: Exploratory factor analysis: satisfaction of need for meaning as reported by employees in the pre-survey

	Loadings
My job is connected to what I believe is important in life.	.897
I see a connection between my job and the best interests of society.	.873
My job makes personal sense.	.901

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 3248. Cronbach's alpha = .869.

Table 4.144: Exploratory factor analysis: satisfaction of need for meaning as reported by employees in the post-survey

	Loadings
My job is connected to what I believe is important in life.	.90
I see a connection between my job and the best interests of society.	.885
My job makes personal sense.	.906

Note: Extraction method: principal component analysis. One factor with an eigenvalue higher than 1 was extracted. N = 2640. Cronbach's alpha = .877.

All items exhibit very high loadings in both survey waves, and the alpha values show good internal reliability. Thus, the items can be used to construct a reflective index.

Figure 4.77: Satisfaction of need for meaning as reported by employees in the pre-survey, distribution
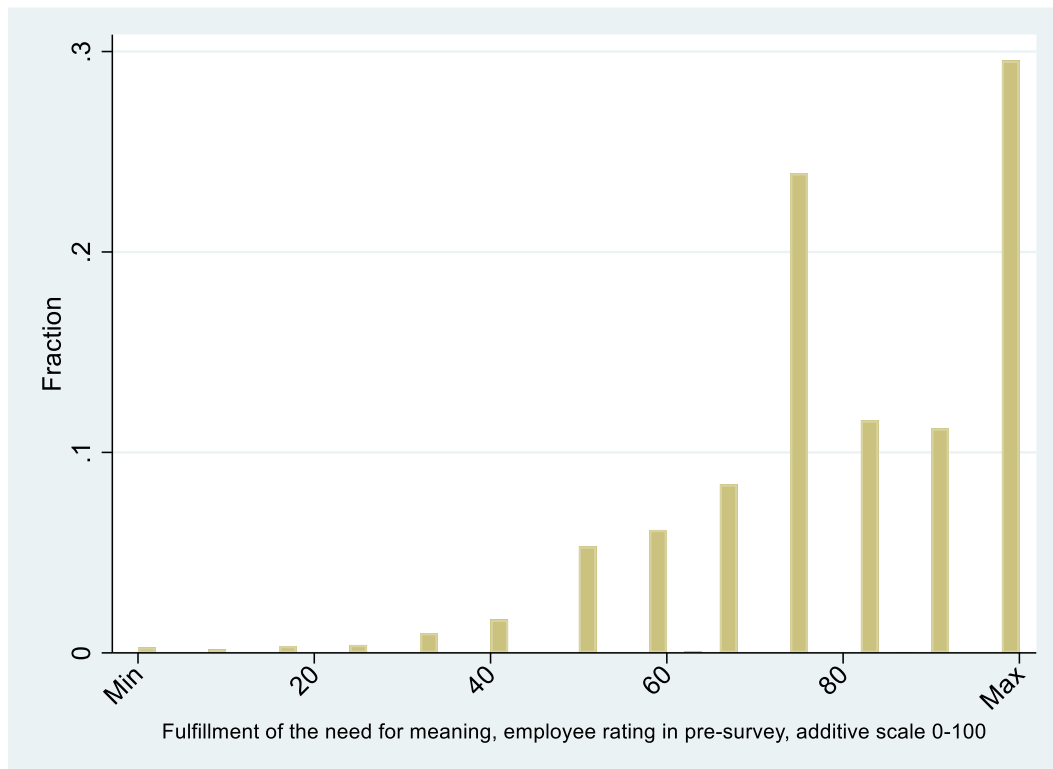
Note: N = 3260. Mean = 80.50, std. dev. = 18.14, min. = 1, max. = 5, skewness = -.95, kurtosis = 4.12.

Figure 4.78: Satisfaction of need for meaning as reported by employees in the post-survey, distribution
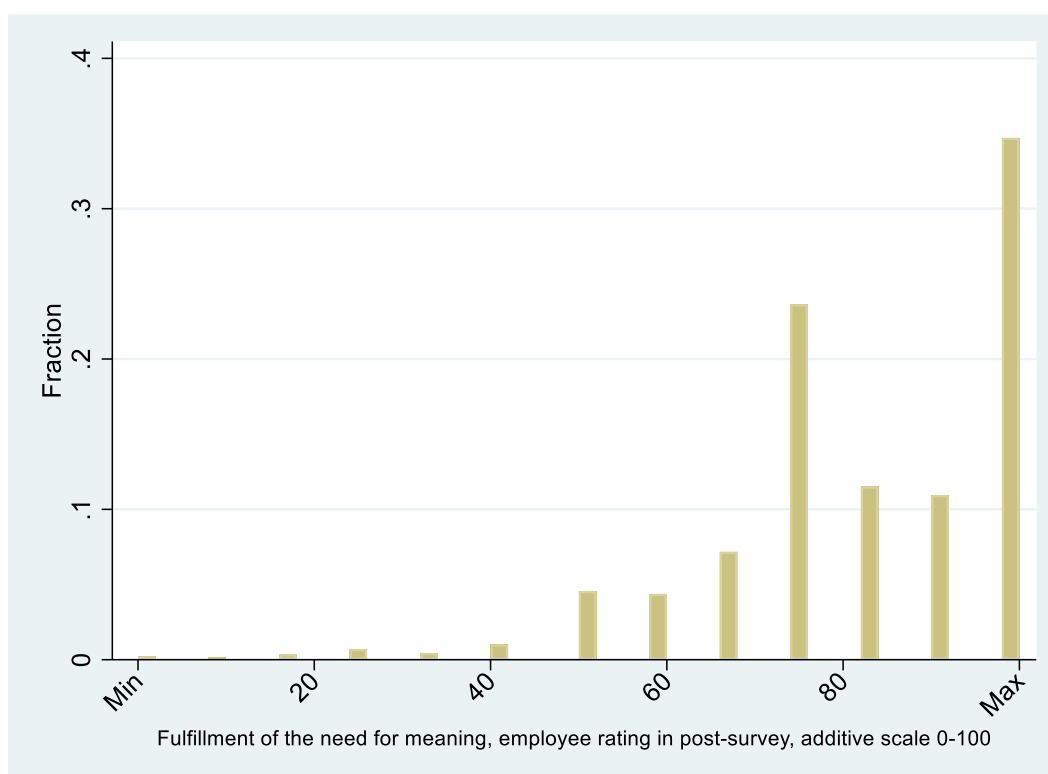
Note: N = 2647. Mean = 82.62, std. dev. = 17.69, min. = 0, max. = 100, skewness = -1.14, kurtosis = 4.73.

Both distributions are extremely left-skewed with two notable peaks, one around 75 and another at the upper limit of the scale. This suggests that the employees generally find their job meaningful.

4.13.6 Evaluation of the Development Intervention

We constructed several items to measure the participating public managers' assessment of the leadership development intervention. The items measure participating managers' evaluation of the leadership training as well as the dialogue tool they were provided with.

Table 4.145: Evaluation of the development intervention

	Leaders	Source
levo_vurdering_1	I think the LEVO course has contributed positively to my development as a leader. *Jeg oplever, at LEVO-kursusforløbet har bidraget positivt til min udvikling som leder.*	Own
levo_vurdering_2	I think the dialogue tool has contributed to increased focus on the organization's goals in the development dialogues with my employees.	Own

	Jeg oplever, at dialogredskabet har bidraget til større fokus på organisationens mål i udviklingssamtalerne med mine medarbejdere.		
levo_vurdering_3	I think the dialogue tool has contributed positively to the employees' feeling of ownership over their own work-related development goals. *Jeg oplever, at dialogredskabet har bidraget til at medarbejderne har fået større ejerskab til deres egne arbejdsmæssige udviklingsmål.*	Own	
levo_vurdering_4	All in all, I think the dialogue tool has contributed to making development dialogues with my employees better. *Jeg oplever samlet set, at dialogredskabet har bidraget til bedre udviklingsdialoger med mine medarbejdere.*	Own	

Note: These questions only appeared for the leaders and only in the post-survey.

Table 4.146: Response distribution for items evaluating the development intervention (leader replies)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	**Mean**	**Std. dev.**	**Total N**
I think the LEVO course has contributed positively to my development as a leader.	1.96% (2)	7.84% (8)	33.33% (34)	40.20% (41)	16.67% (17)	3.62	.92	102
I think the dialogue tool has contributed to a larger focus on the organization's goals in the development conversations with my employees.	4.90% (5)	11.76% (12)	32.35% (33)	35.29% (36)	15.69% (16)	3.45	1.05	102
I think the dialogue tool has contributed positively to the employees' feeling of ownership over their own work-related goals.	8.82% (9)	16.67% (17)	38,24% (39)	24,51% (25)	11.76% (12)	3.14	1.11	102
All in all, I think the dialogue tool has contributed to making development conversations with my employees better.	5.88% (6)	13.73% (14)	40.20% (41)	22.55% (23)	17.65% (18)	3.32	1.00	102

Note: Percentages of observations in each category. Number of observations in parentheses.

Means above the middle of the scale suggest that the leaders generally have positive perceptions of the impact of the development intervention.

4.14 Degree of Voluntary Participation

Table 4.147: Question measuring degree of voluntary participation

	Leaders	Source
deltagelse	Hvordan oplever du baggrunden for din deltagelse i ledelsesudviklingsforløbet om visionsledelse? *How do you perceive the reason for your participation in the development course about transformational leadership?*	Own

Note: This question only appeared for the leaders.

Table 4.148: Degree of voluntary participation, distribution

How do you perceive reason for your participation in the development course about transformational leadership? (**leader replies**)	My participation is strongly voluntary	My participation is mostly voluntary	My participation was mostly determined by others (e.g., my own leader)	My participation was strongly determined by others (e.g., my own leader)
Pre-survey (n = 202)	36.14% (73)	22.28% (45)	21.29% (43)	20.30% (41)
Post-survey (n = 149)	26.17% (39)	20.13% (30)	22.82% (34)	30.87% (46)

Note: Percentages of observations in each category. Number of observations in parentheses.

4.15 Background Information

Participating public managers and their employees were asked about the type of tasks in their unit, seniority at their current workplace, and standard background characteristics such as age, gender, and education. Public managers were also asked about their span of control, seniority in their current leader position, seniority as a leader, their units' target group, and whether they had completed leadership training. Additional background questions for the employees concerned their primary work function within the unit, years with their current leader, and whether they were employed full time or part time.

4.15.1 Types of Tasks (Unit Level)

Table 4.149: Question measuring types of tasks, unit

	Leaders	Source
opgavetype	The following questions are about the unit that you lead. Which types of tasks are handled in your unit? You can choose several options. *De følgende spørgsmål handler om den enhed, som du er leder for. Hvilke typer af opgaver varetages i din enhed? Sæt gerne flere krydser.*	Own

Note: This question only appeared for the leaders.

Table 4.150: Types of tasks in the unit, distribution

The following questions are about the unit that you lead. Which types of tasks are handled in your unit? (**Leader replies**)	Pre-survey (n = 206)	Post-survey (n = 153)
Service regulation tasks within employment services *Myndighedsopgaver på beskæftigelsesområdet*	77.18% (159)	74.50% (114)
Service regulation tasks within social services *Myndighedsopgaver på socialområdet*	6.31% (13)	6.54% (10)
Service regulation tasks within social cash benefits *Myndighedsopgaver på ydelsesområdet*	11.17% (23)	12.42% (19)
Service production tasks within employment services *Udføreropgaver på beskæftigelsesområdet*	56.31% (116)	51.63% (79)
Service production within social services *Udføreropgaver på socialområdet*	7.77% (16)	7.84% (12)
General staff functions *Stabsopgaver*	14.56% (30)	11.11% (17)
Other tasks *Andre opgaver*	27.18% (56)	23.53% (36)

Note: Percentages of observations in each category. Number of observations in parentheses. Since the leaders were able to select several options each, the percentages do not add up to 100. The last four options were not available for the respondents in the post-survey, which explains the blank fields.

4.15.2 Type of Task (Individual Level)

Table 4.151: Question measuring type of task, individual level

	Employees	Source
jobfunktion	In which area is your primary work function? *Inden for hvilket område ligger din primære jobfunktion?*	Own

Note: This question only appeared for the employees.

Table 4.152: Types of tasks on the individual level, distribution

In which area is your primary work function? (**Employee replies**)	Pre-survey (n = 3242)	Post-survey (n = 2616)
Job interviews and case handling *Jobsamtaler og sagsbehandling*	46.51% (1508)	42.85% (1121)
Contact with companies, recruitment, and initiation of in-service training *Virksomhedskontakt, rekruttering og etablering af virksomhedsforløb*	16.78% (544)	17.32% (453)
General administration *Generel administration*	7.09% (230)	6.92% (181)
Case handling regarding cash benefits *Sagsbehandling i ydelsesager*	5.24% (170)	3.40% (89)
Service and support of other units/the organization (organizational development, analyses, economy, IT, etc.) *Stabsopgaver (organisationsudvikling, analyse, økonomi, IT mv.)*	2.16% (70)	2.10% (55)
Education and guidance for citizens *Undervisning og vejledning af borgere*	10.61% (344)	7.22% (189)
Mentor tasks *Mentoropgaver*	3.73% (121)	3.29% (86)
Case handling within social services *Sagsbehandling i socialsager*	1.20% (39)	1.07% (28)
Other tasks *Andet*	6.66% (216)	15.83% (414)

Note: Percentages of observations in each category. Number of observations in parentheses. Blank fields mean that the option was not available for respondents in this survey wave.

4.15.3 Target Groups

Table 4.153: Question measuring target groups

	Leaders	Source
målgrupper	Which of the following groups is your work targeted towards? Choose the target groups that you work with. *Hvilke af de nedenstående målgrupper yder I indsatser for i din enhed? Markér de målgrupper, som I arbejder med.*	Own / Danish law (Lov om en aktiv beskæftigelsesindsats)

Note: This question only appeared for the leaders.

Table 4.154: Target groups, distribution

Which of the following groups is your work targeted towards? Choose the target groups that you work with. (**Leader replies**)	Pre-survey (n = 206)	Post-survey (n = 153)
Receivers of daily allowances *A-dagpengemodtagere*	23.30% (48)	18.95% (29)
Receivers of cash benefits, who are ready to work *Jobparate kontanthjælpsmodtagere*	29.13% (60)	25.49% (39)
Receivers of cash benefits, who are ready to take part in job activation *Aktivitetsparate kontanthjælpsmodtagere*	38.35% (79)	34.64% (53)
Receivers of education benefits, who are ready to in enroll in education *Uddannelsesparate uddannelseshjælpsmodtagere*	27.18% (56)	22.22% (34)
Receivers of education benefits, who are ready to take part in job activation *Aktivitetsparate uddannelseshjælpsmodtagere*	28.16% (58)	25.49% (39)
Receivers of sickness benefits *Sygedagpengemodtagere*	24.27% (50)	25.49% (39)
Persons in job clarification processes *Personer i jobafklaringsforløb*	23.30% (48)	21.57% (33)
Persons in resource clarification processes *Personer i ressourceforløb*	32.52% (67)	30.07% (46)

People approved for flex jobs receiving unemployment benefits *Ledighedsydelsesmodtagere*	23.79% (49)	22.22% (34)
Persons in rehabilitation *Personer i revalideringsforløb*	25.73% (53)	25.49% (39)
Persons in flex jobs *Personer i fleksjob*	24.27% (50)	21.57% (33)
Receivers of self-support/return benefits *Modtagere af selvforsørgelses- og hjemrejseydelse*	29.61% (61)	25.49% (39)
Others *Andet*	23.30% (48)	21.57% (33)

Note: Percentages of observations in each category. Number of observations in parentheses. Since the leaders were able to select several options each, the percentages do not add up to 100.

4.15.4 Span of control

Table 4.155: Question measuring span of control

	Leaders	Source
Ledelsesspænd	How many people are you the direct leader of? *Hvor mange personer er du direkte personaleleder for?*	Own

Note: This question only appeared for the leaders.

Figure 4.79: Span of control, public managers
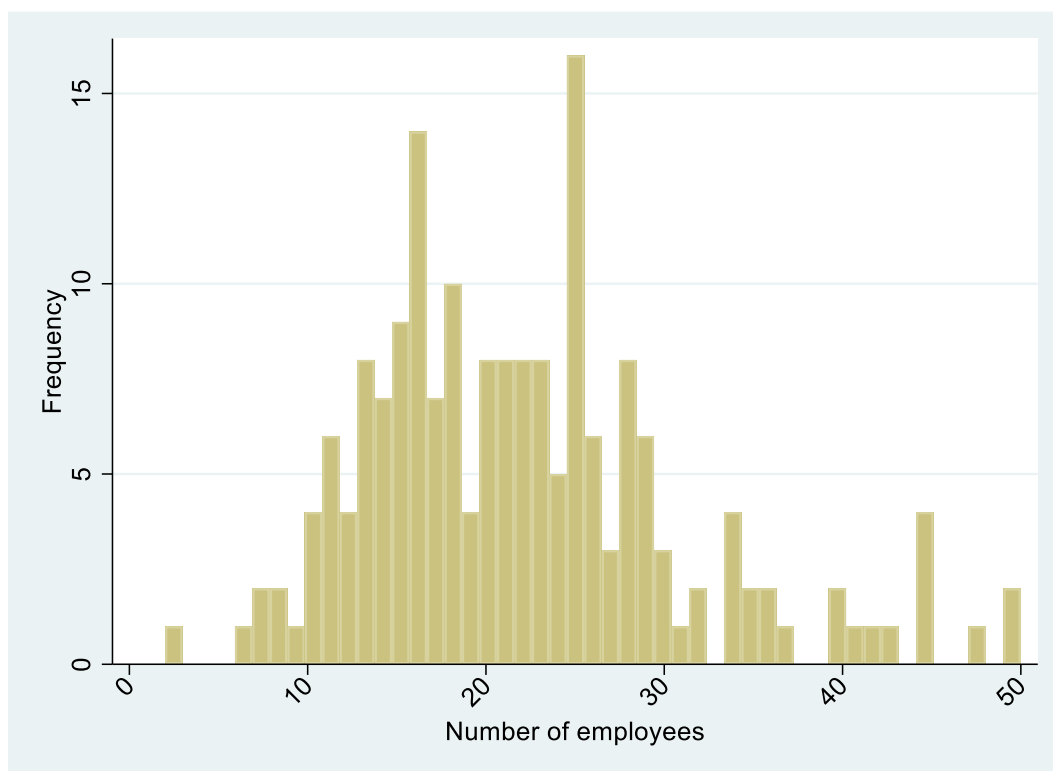
Note: N = 183. Mean = 21.93, std. dev. = 9.07, min. = 2, max. = 50.

4.15.5 Seniority in Current Workplace

Table 4.156: Question measuring seniority in current workplace

	Leaders/employees	Source
år_arb	How many years have you worked in your current workplace? Indicate the number of years and, if relevant, the number of months. *Hvor mange år har du arbejdet på din nuværende arbejdsplads? Angiv antal år. Angiv eventuelt antal måneder.*	Own

Figure 4.80: Seniority at current workplace as reported by leaders in the pre-survey
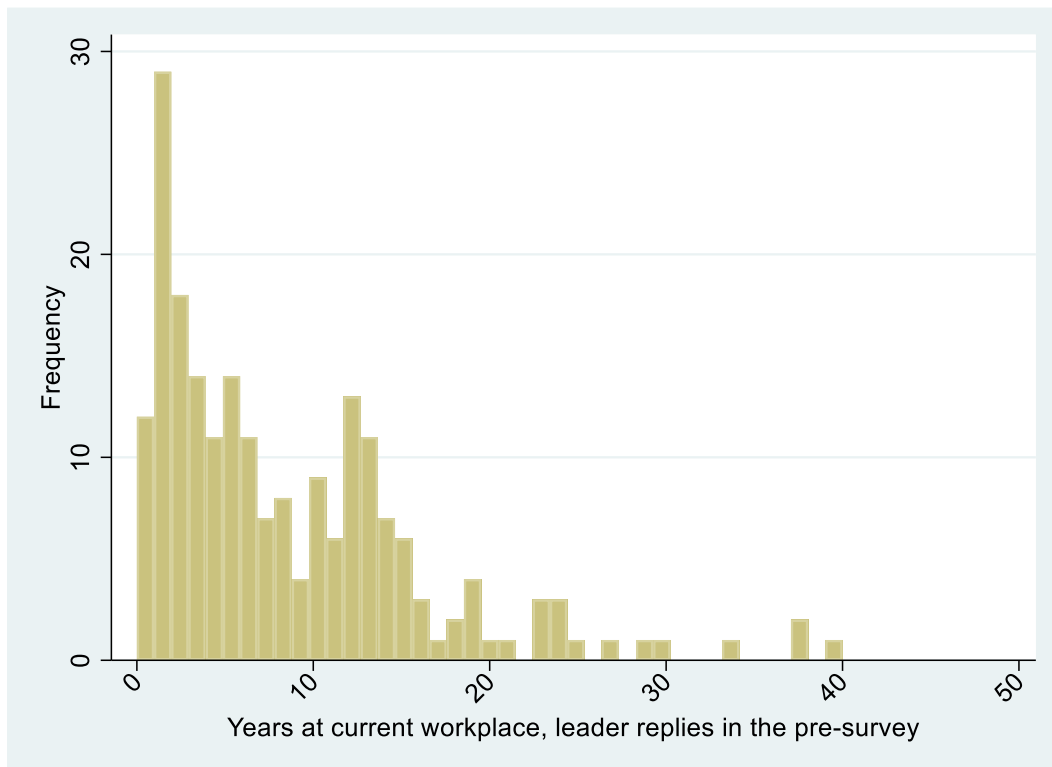
Note: N = 206. Mean = 8.30, std. dev. = 7.74, min. = 0, max. = 40.

Figure 4.81: Seniority at current workplace as reported by public managers in the post-survey
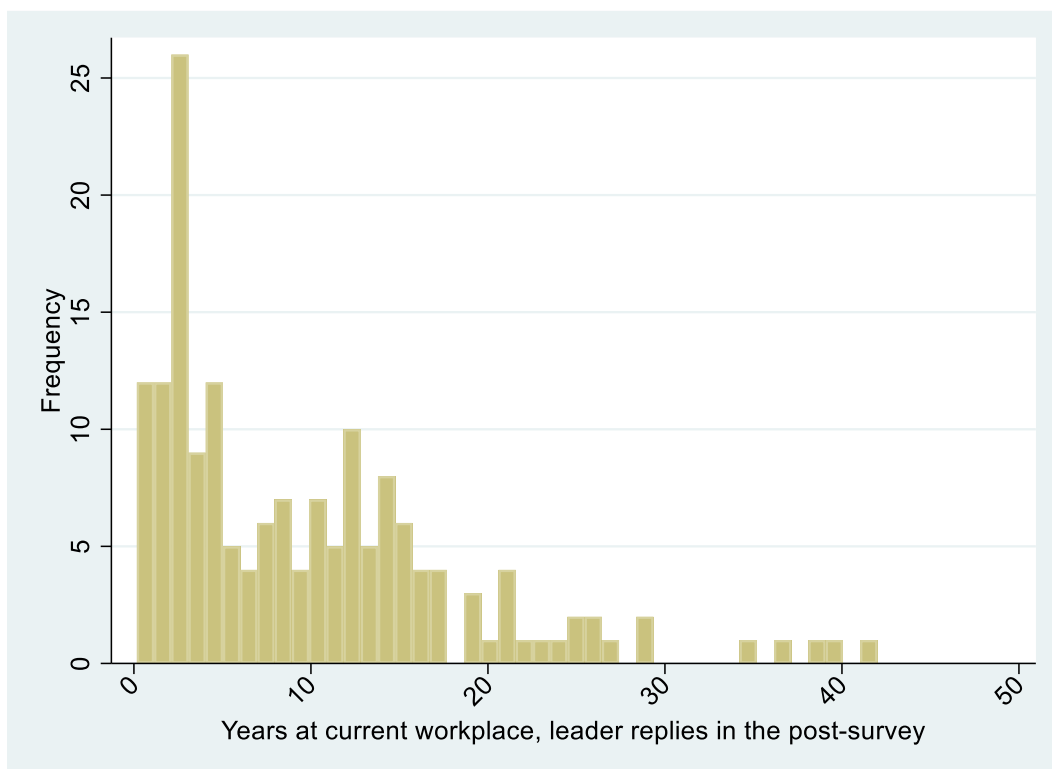
Note: N = 169. Mean = 9.68, std. dev. = 8.52, min. = .17, max. = 42.

Figure 4.82: Seniority at current workplace as reported by employees in the pre-survey
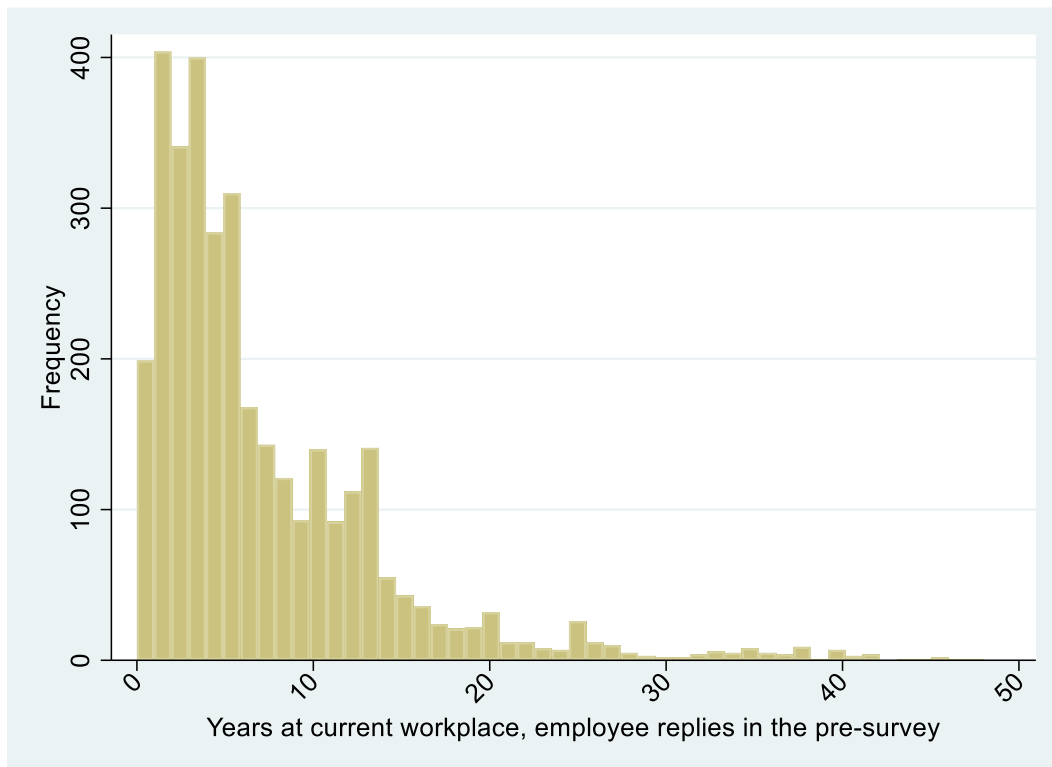
Note: N = 3342. Mean = 6.94, std. dev. = 7.03, min. = 0, max. = 48.

Figure 4.83: Seniority at current workplace as reported by employees in the post-survey
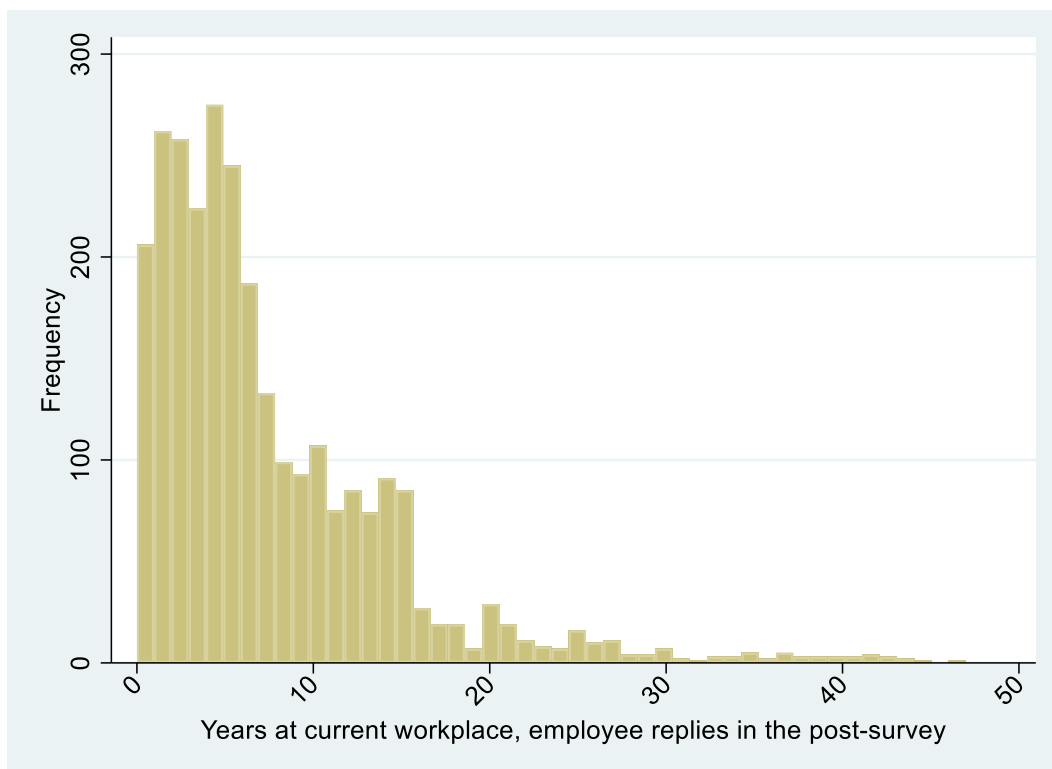
Note: N = 2741. Mean = 7.46, std. dev. = 6.95, min. = 0, max. = 47.

4.15.6 Years with Current Leader

Table 4.157: Question measuring time with current leader

	Employees	Source
år_m_leder	For how long has your current leader been your leader? Indicate the number of years and, if relevant, the number of months.	Own
	Hvor længe har din nuværende leder været din leder? Angiv antal år. Angiv eventuelt antal måneder.	

Note: This question only appeared for the employees.

Figure 4.84: Years with current leader as reported by employees in the pre-survey
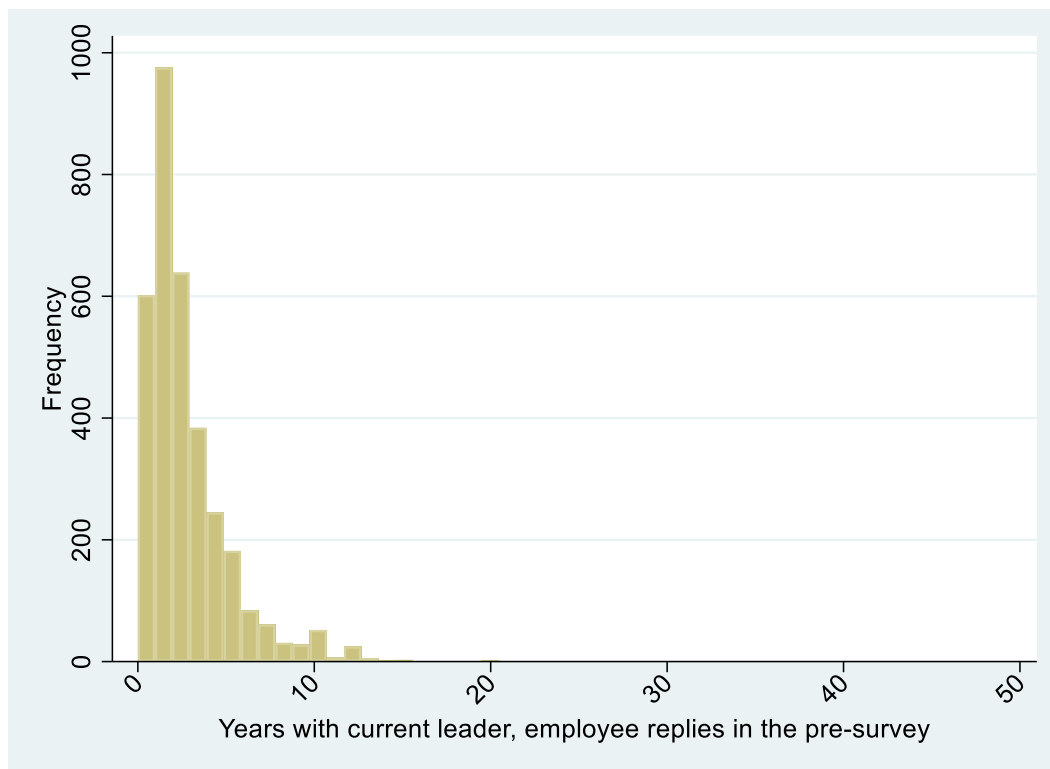
Note: N = 3337. Mean = 2.49, std. dev. = 2.62, min. = 0, max. = 37.

Figure 4.85: Years with current leader as reported by employees in the post-survey
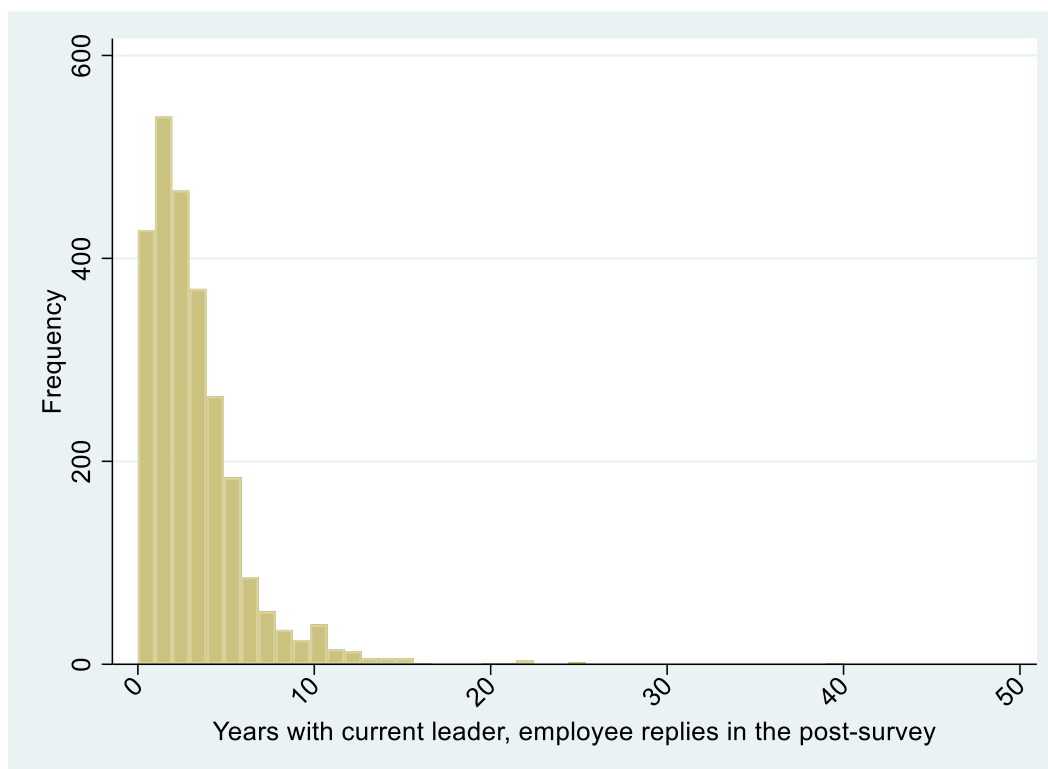
Note: N = 2544. Mean = 2.81, std. dev. = 2.90, min. = 0, max. = 40.

4.15.7 Years in Current Leader Position

Table 4.158: Question measuring time in current leader position

	Leaders	Source
år_stilling	For how many years have you been employed in your current position? *Hvor mange år har du været ansat i din nuværende stilling? Angiv antal år*	Own

Note: This question only appeared for the leaders.

Figure 4.86: Seniority in current position as reported by public managers in the pre-survey
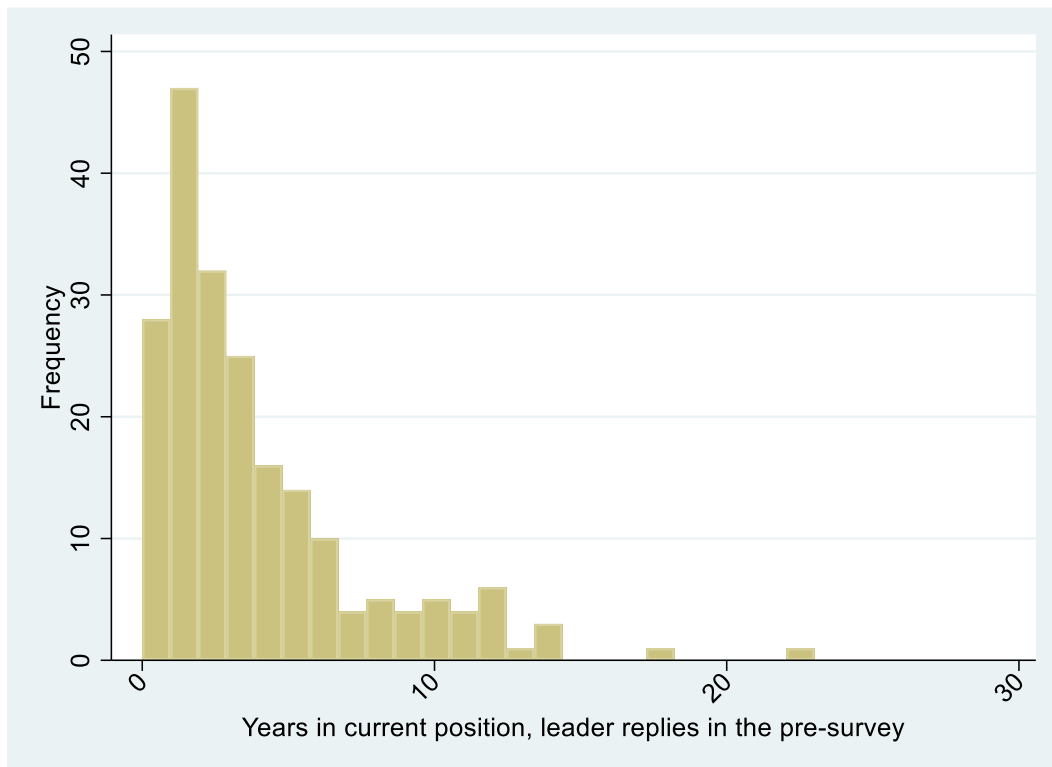
Note: N = 206. Mean = 3.73, std. dev. = 3.74, min. = 0, max. = 23.

Figure 4.87: Seniority in current position as reported by public managers in the post-survey
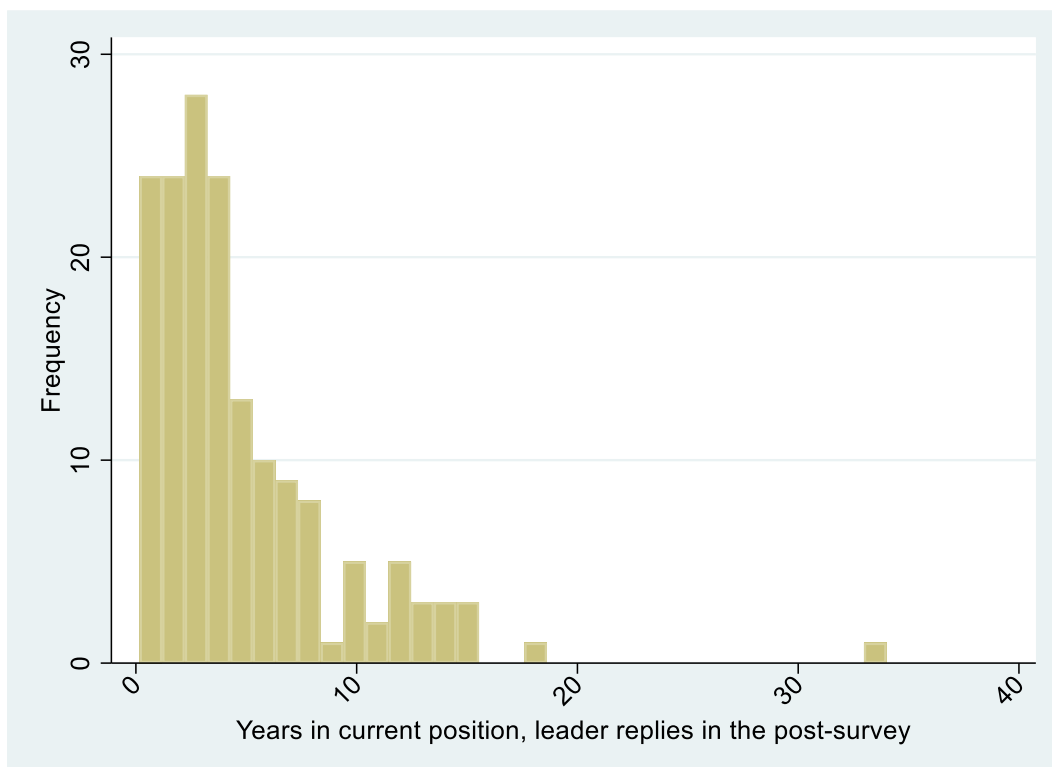
Note: N = 164. Mean = 4.86, std. dev. = 4.41, min. = .17, max. = 34.

4.15.8 Part-Time Employment

Table 4.159: Items measuring whether the employee works full time (37 hours) or part time

	Employees	Source
deltid_fuldtid	How many hours a week are you obliged to work according to your contract? *Hvor mange timer er du ansat til at arbejde om ugen?*	Own

Note: This question only appeared for the employees. In the survey, employees were given two response options: 1) "Full time (37 hours)" and 2) "Part time (less than 37 hours)." Employees who picked the latter option were then asked to fill in the number of hours they worked a week in a second survey item. The resulting two response variables were then merged for the analyses below.

Figure 4.88: Weekly hours of employment as reported by employees in the pre-survey
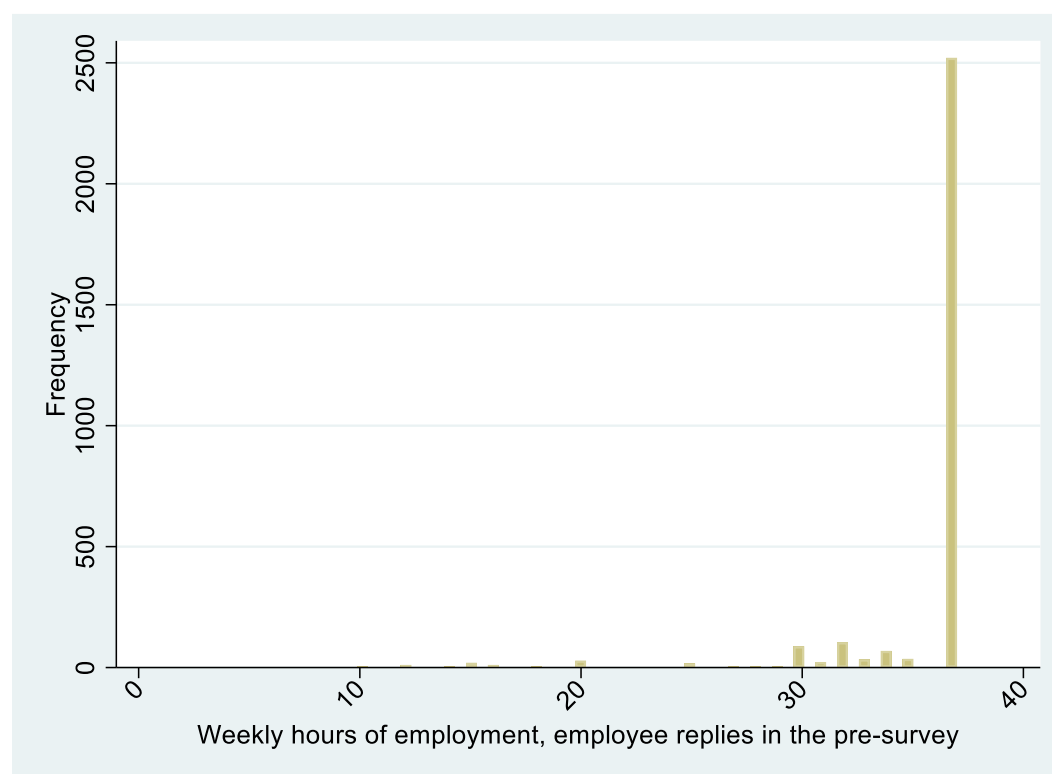
Note: N = 3058. Mean = 35.41, std. dev. = 4.69, min. = 0, max. = 37.

Figure 4.89: Weekly hours of employment as reported by employees in the post-survey
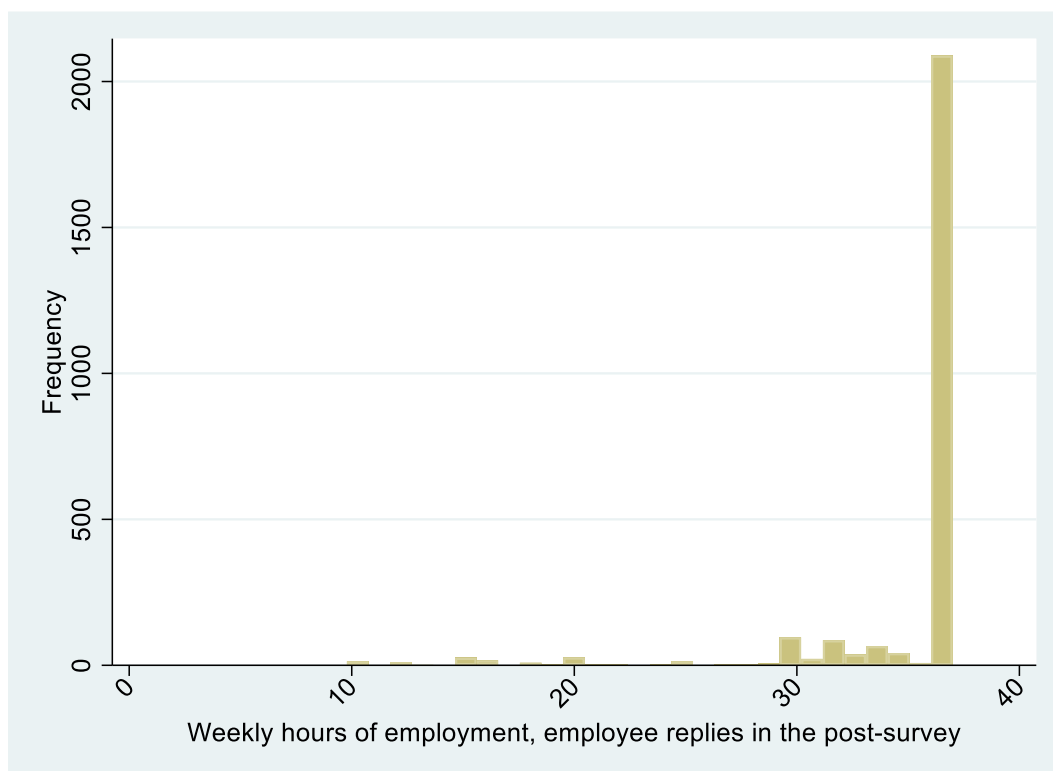
Note: N = 2607. Mean = 35.16, std. dev. = 5.03, min. = 2, max. = 37.

4.15.9 Seniority as a Leader

Table 4.160: Question measuring seniority as a leader

	Leaders	Source
År_leder	For how many years have you worked as a leader in total? *Hvor mange år har du arbejdet som leder i alt?*	Own

Note: This question only appeared for the leaders.

Figure 4.90: Seniority as leader, pre-survey, public managers
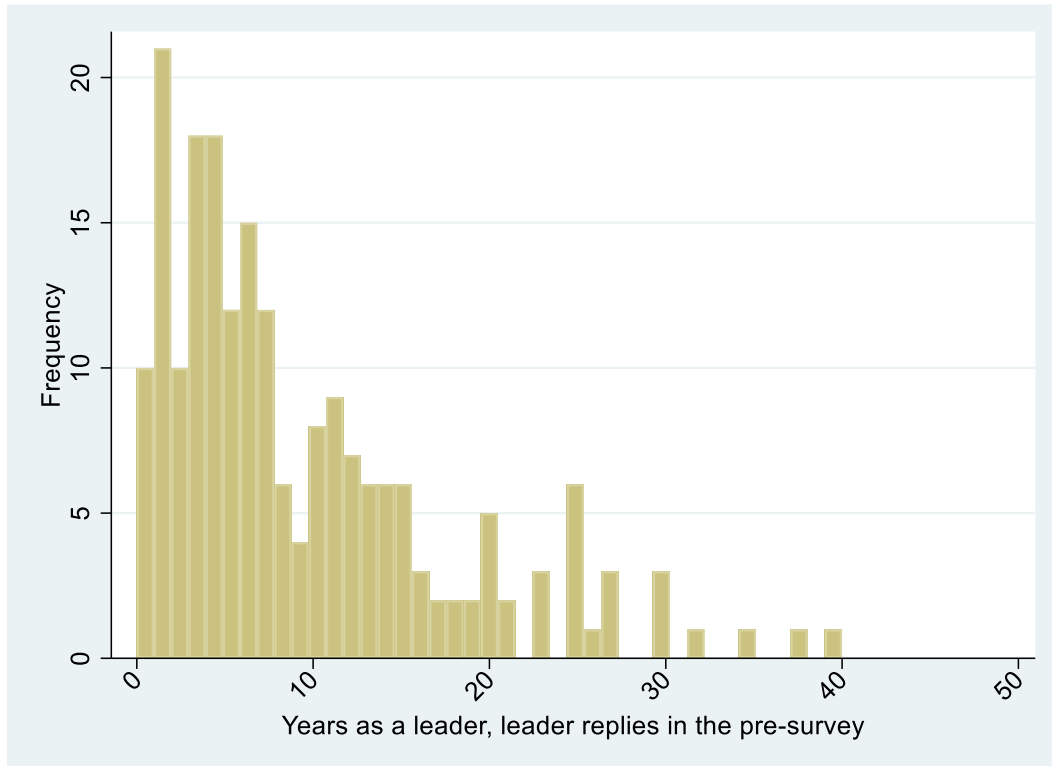
Note: N = 204. Mean = 9.17, std. dev. = 8.23, min. = 0, max. = 40.

Figure 4.91: Seniority as leader, post-survey, public managers
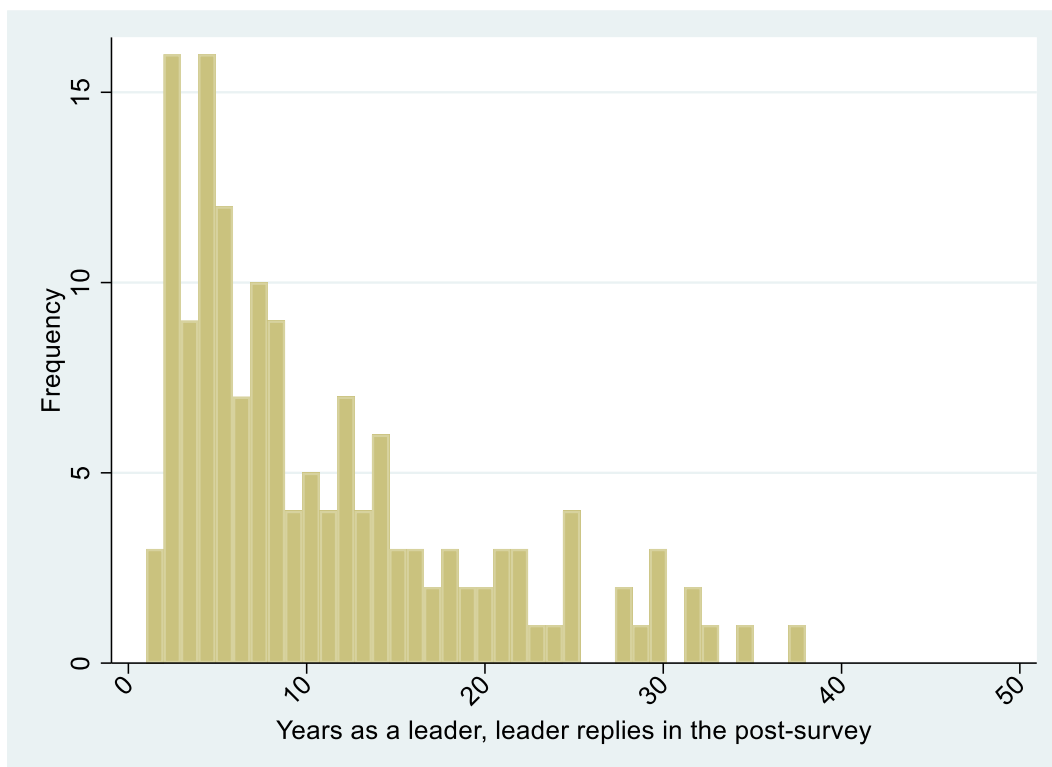
Note: N = 150. Mean = 10.68, std. dev. = 8.56, min. = 1, max. = 38.

4.15.10   Age

Table 4.161: Question measuring age

	Leaders/employees	Source
alder	In which year were you born? *Hvilket årstal er du født?*	Own

Note: The variable has been recoded so that the histograms below show the age in years, not the year of birth.

Figure 4.92: Age as reported by public managers in pre-survey
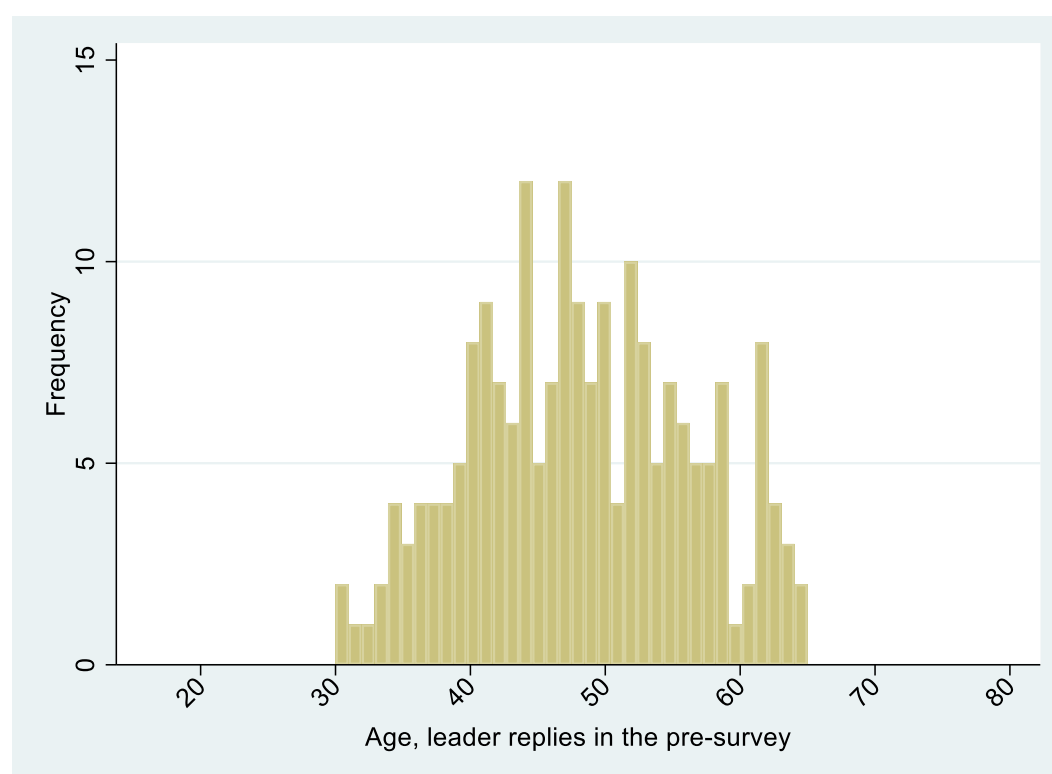
Note: N = 198. Mean = 48.25, std. dev. = 8.37, min. = 30, max. = 65.

Figure 4.93: Age as reported by public managers in post-survey
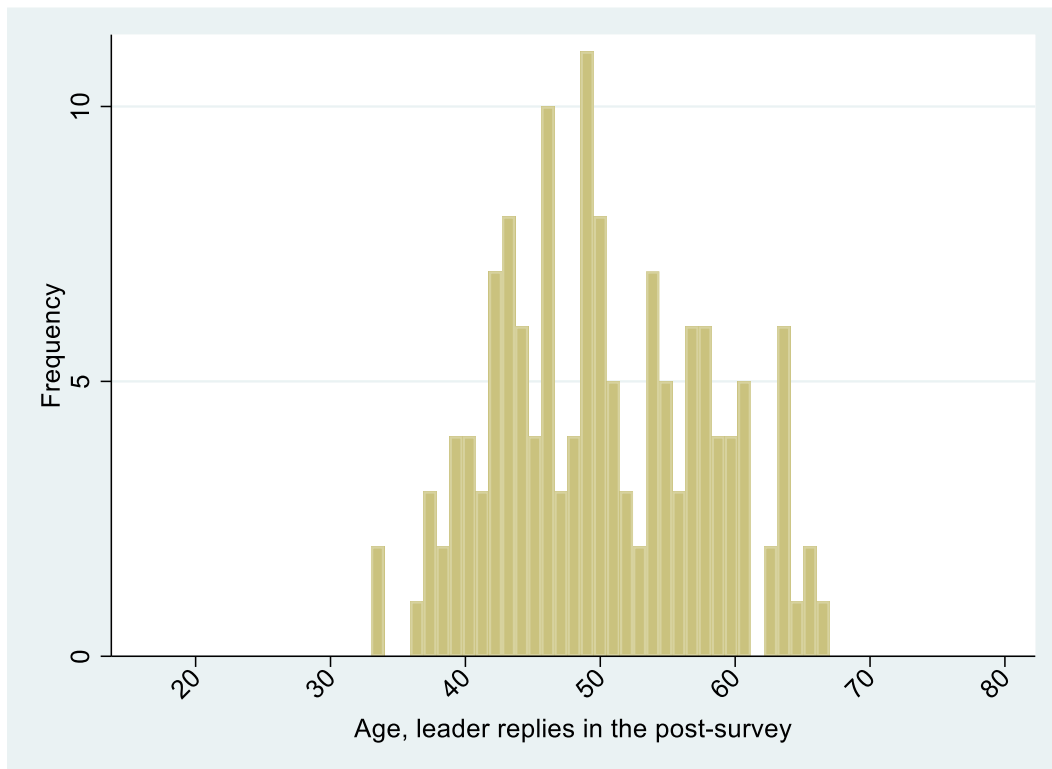
Note: N = 142. Mean = 50.18, std. dev. = 7.98, min. = 33, max. = 67.

Figure 4.94: Age as reported by employees in pre-survey
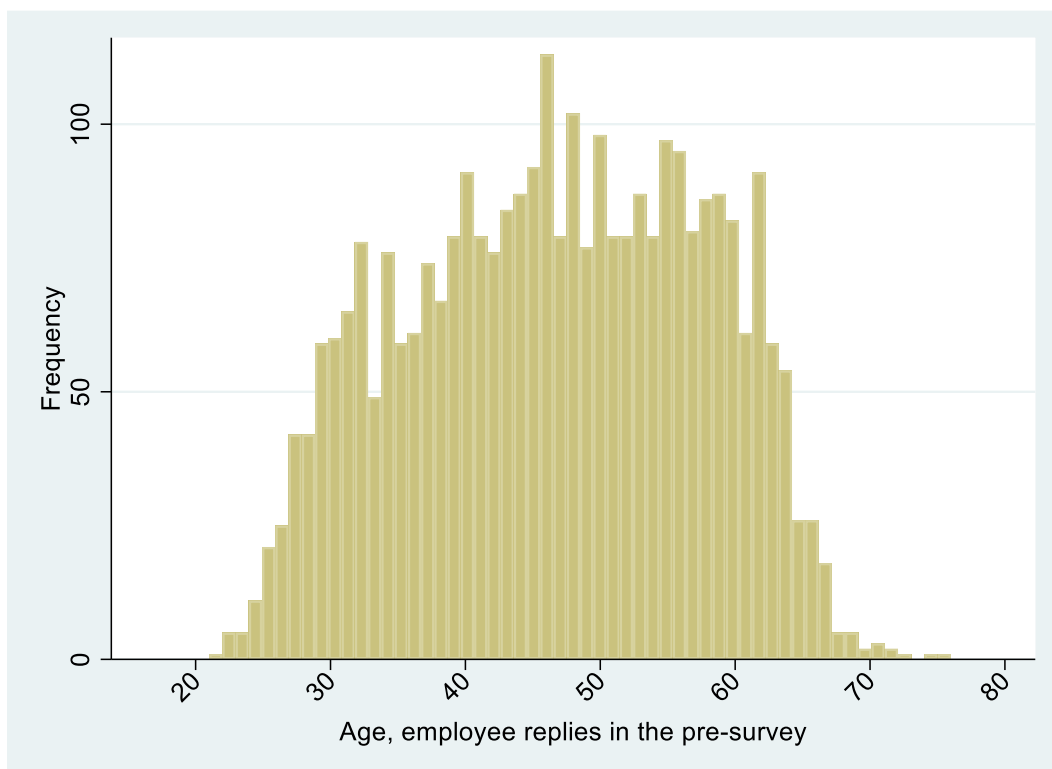
Note: N = 3063. Mean = 46.62, std. dev. = 11.04, min. = 21, max. = 76.

Figure 4.95: Age as reported by employees in post-survey
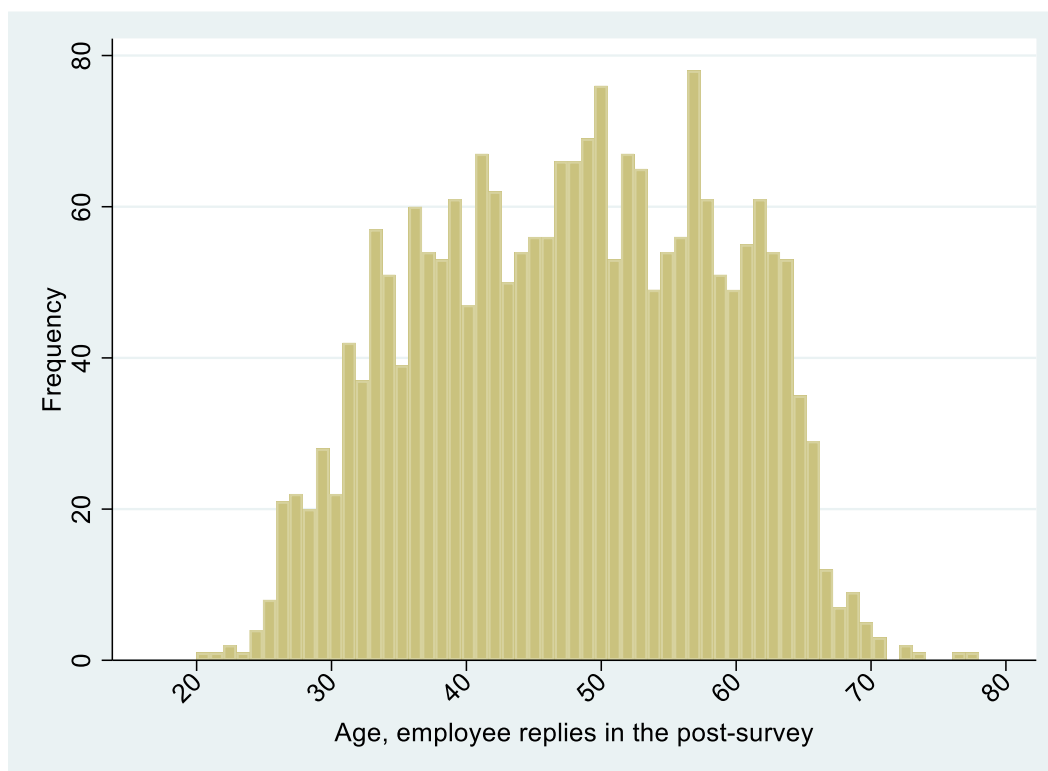
Note: N = 2164. Mean = 47.68, std. dev. = 11.07, min. = 20, max. = 78.

4.15.11   Gender

Table 4.162: Question measuring gender

	Leaders/employees	Source
Køn	Gender *Køn*	

Table 4.163: Gender

	Female	Male	N
Leaders, pre-survey	69.90% (144)	30.10% (62)	206
Leaders, post-survey	71.90% (110)	28.10% (47)	153
Employees, pre-survey	78.38% (2697)	21.62% (744)	3441
Employees, post-survey	77.47% (2146)	22.53% (624)	2770

Note: Percentages of observations in each category. Number of observations in parentheses.

4.15.12 Education

Table 4.164: Question measuring level of education

	Leaders/employees	Source
uddannelse	What is your highest completed level of education? *Hvad er dit højest gennemførte uddannelsesniveau?*	Own

Table 4.165: Highest completed education as reported by public managers in the pre-survey

	Percent	N
Kommunal eller privat elevuddannelse	3.45	7
Uddannelse inden for politiet eller forsvaret	0.49	1
Kort videregående uddannelse	6.40	13
Mellemlang videregående pædagogisk uddannelse	11.33	23
Mellemlang videregående sundhedsfaglig uddannelse	1.97	4
Mellemlang videregående teknisk/naturvidenskabelig uddannelse	1.48	3
Mellemlang videregående humanistisk uddannelse	0.49	1
Mellemlang videregående samfundsvidenskabelig uddannelse	33.50	68
Lang videregående pædagogisk uddannelse	1.97	4
Lang videregående teknisk/naturvidenskabelig uddannelse	0.49	1
Lang videregående humanistisk uddannelse	12.81	26
Lang videregående samfundsvidenskabelig uddannelse	12.81	26
Anden mellemlang uddannelse	0.49	1
Diplomuddannelse	7.39	15
HD eller master	4.93	10
Total	**100**	**203**

Table 4.166: Highest completed education as reported by public managers in the post-survey

	Percent	N
Kommunal eller privat elevuddannelse	3.38	5
Kort videregående uddannelse	7.43	11
Mellemlang videregående pædagogisk uddannelse	7.43	11
Mellemlang videregående sundhedsfaglig uddannelse	4.05	6
Mellemlang videregående teknisk/naturvidenskabelig uddannelse	2.03	3
Mellemlang videregående humanistisk uddannelse	2.03	3
Mellemlang videregående samfundsvidenskabelig uddannelse	33.78	50
Lang videregående pædagogisk uddannelse	1.35	2
Lang videregående teknisk/naturvidenskabelig uddannelse	1.35	2
Lang videregående humanistisk uddannelse	10.81	16
Lang videregående samfundsvidenskabelig uddannelse	10.81	16
Anden uddannelse	15.54	23
Total	**100**	**148**

Table 4.167: Highest completed education as reported by employees in the pre-survey

	Percent	N
Grundskole/ungdomsuddannelse	1.52	49
Kommunal eller privat elevuddannelse	9.54	307
Uddannelse inden for politiet eller forsvaret	0.96	31
Kort videregående uddannelse	14.17	456
Mellemlang videregående pædagogisk uddannelse	13.27	427
Mellemlang videregående sundhedsfaglig uddannelse	4.41	142
Mellemlang videregående teknisk/naturvidenskabelig uddannelse	0.75	24
Mellemlang videregående humanistisk uddannelse	1.06	34
Mellemlang videregående samfundsvidenskabelig uddannelse	34.69	1116
Lang videregående pædagogisk uddannelse	1.18	38
Lang videregående sundhedsfaglig uddannelse	0.37	12
Lang videregående teknisk/naturvidenskabelig uddannelse	0.71	23
Lang videregående humanistisk uddannelse	5.66	182
Lang videregående samfundsvidenskabelig uddannelse	4.85	156
Erhvervsuddannelse	2.08	67
Anden mellemlang uddannelse	0.28	9
Anden lang videregående uddannelse	0.03	1
Diplomuddannelse	1.90	61
HD eller master	0.65	21
Anden uddannelse	1.90	61
Total	**100**	**3217**

Table 4.168: Highest completed education as reported by employees in the post-survey

	Percent	N
Grundskole/ungdomsuddannelse	1.07	28
Kommunal eller privat elevuddannelse	8.68	226
Uddannelse inden for politiet eller forsvaret	0.38	10
Kort videregående uddannelse	13.55	353
Mellemlang videregående pædagogisk uddannelse	13.40	349
Mellemlang videregående sundhedsfaglig	3.92	102
Mellemlang videregående teknisk/naturvidenskabelig uddannelse	0.65	17
Mellemlang videregående humanistisk uddannelse	1.19	31
Mellemlang videregående samfundsvidenskabelig uddannelse	34.93	910
Lang videregående pædagogisk uddannelse	1.15	30
Lang videregående sundhedsfaglig uddannelse	0.35	9
Lang videregående teknisk/naturvidenskabelig uddannelse	0.84	22
Lang videregående humanistisk uddannelse	5.68	148
Lang videregående samfundsvidenskabelig uddannelse	4.34	113
Total	**100**	**2605**

4.15.13   Leadership training

Table 4.169: Question measuring leadership training, public managers

	Leaders	Source
lederudd	Did you complete a leadership training course? *Har du gennemført en lederuddannelse?*	Own

Note: This question only appeared for the leaders.

Table 4.170: Completion of leadership training, public managers

Did you complete a leadership training course? (**Leader responses**)	Yes	No	No, but I am currently attending a course	N
Pre-survey	48.78% (100)	29.27% (60)	21.95% (45)	205
Post-survey	59.33% (89)	18.67% (28)	22.00% (33)	150

Note: Percentages of observations in each category. Number of observations in parentheses.

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6 Appendix: Content of The Static and Dynamic Leadership Tool

6.1 Content of Template for Goal-Oriented Development Dialogues

The content of templates for goal-oriented development dialogues is identical for the static and the dynamic leadership tools. In the static tool, the content is presented in a writable PDF. In the dynamic tool, the content is presented on an online interactive leadership tool platform. The content is presented on the following pages, and a short video presentation of the dynamic tool can be found along with this technical report on the following webpage: https://ps.au.dk/cpl/baggrundsmateriale-fra-levo-projektet

Goal-oriented development dialogue between manager and employee

Introduction

In the following, please answer the questions regarding your work and our organizational vision. The vision is a description of the overall and long-term objectives for our unit.

When you have answered the questions, you must share your answers with your manager so that they know your perspectives and can prepare the dialogue with you. This will support your perspectives on your work being at the center of the conversation.

You will not be able to cover all the questions during the dialogue. Therefore, you and your manager should select the most important topics together. However, it is important that you agree upon specific development goal(s) and that you form an action plan.

During the dialogue, you should discuss and note down specific tasks when you talk about issues or potentials that require action.

Our organizational vision

In this part of the dialogue, please consider whether something needs to be done to make the organizational vision clearer or more present for you.

1. Is our organizational vision clear to you?
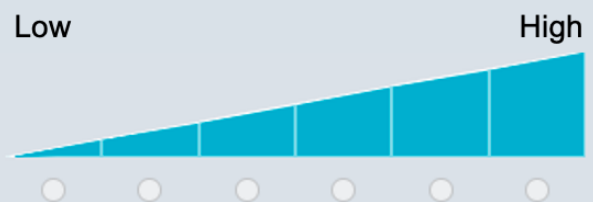
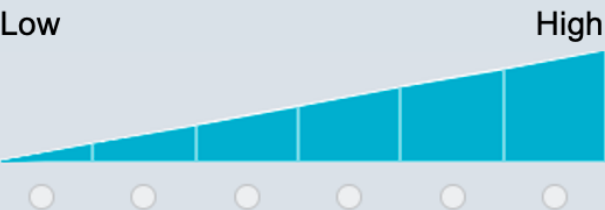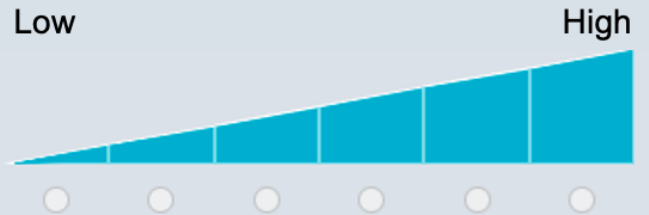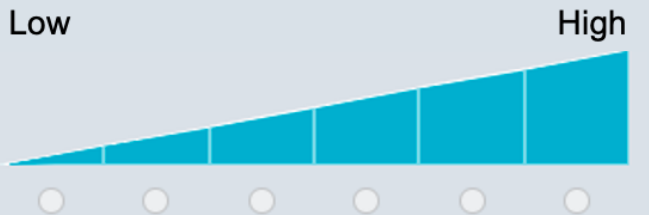Low   High

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 1

2. What the organizational vision stands for is important

Low   High
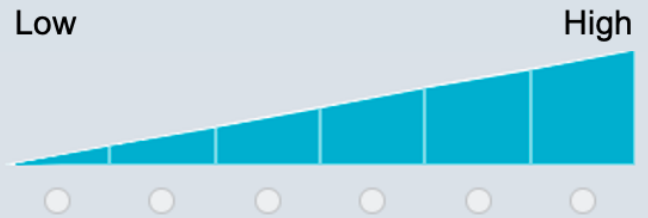
○   ○   ○   ○   ○   ○
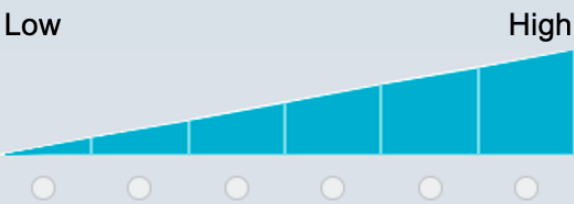
Reflect upon why (not)?

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

3. Do you see a connection between the organizational vision and any values that are important to you personally?

Low   High

○   ○   ○   ○   ○   ○
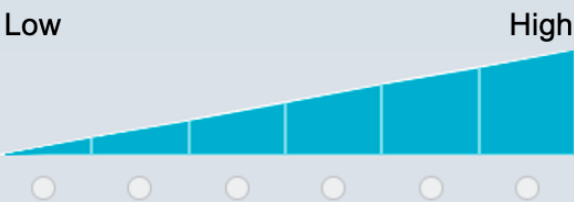
Reflect upon which of your personal values you recognize in the vision.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 2

4. Is it clear to you how you contribute to our organizational vision?

Low   High
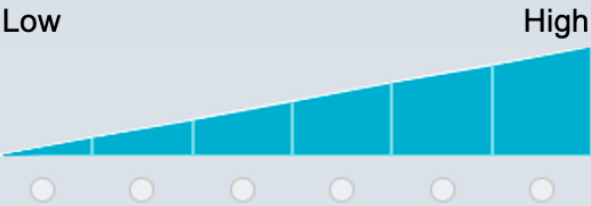
Reflect upon how your primary work tasks contribute to us making the vision a reality.

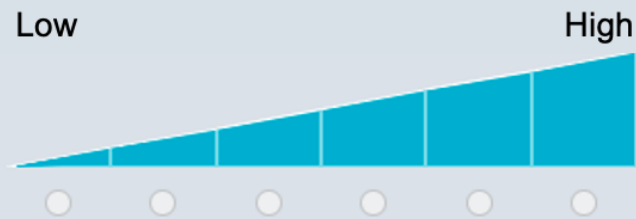Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Your work situation

5. Is the organizational vision clear to you in your daily work?

Low   High

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

6. Connsidering the organizational vision, how do you estimate the quality of your work?

Low   High

○   ○   ○   ○   ○   ○

Reflect upon how you can work on developing the quality of your work in a way that increases the contribution to achieving our vision.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

7. How do you assess the quality of your relation to our clients?

Low   High

○   ○   ○   ○   ○   ○
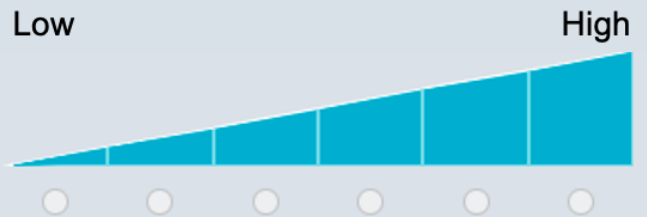
Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 4

8. Do you have the competencies and skills for your work tasks?

Low   High

○   ○   ○   ○   ○   ○

Reflect upon what competencies/skills you could strengthen to contribute even more to the organizational vision.
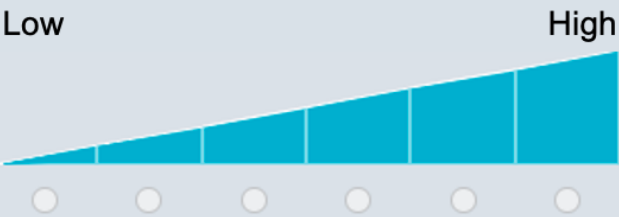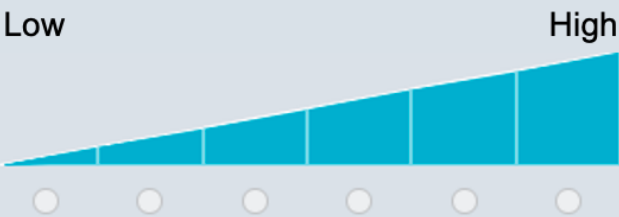
Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

9. Considering the organizational vision, is the prioritization between your work tasks appropriate?

Low   High

○   ○   ○   ○   ○   ○

Reflect upon which tasks you should spend more (or less) time on to better contribute to our vision.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

Page 5

10. How well functioning is your working relationship with your manager?

Low   High

○   ○   ○   ○   ○   ○

Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____Deadline_____

Task description _____Deadline_____

11. How well functioning is your working relationship with your colleagues?

Low   High

○   ○   ○   ○   ○   ○

Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____Deadline_____

Task description _____Deadline_____

12. How well functioning is your working relationship with other important collaboration partners?

Low   High

○ ○ ○ ○ ○ ○

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

13. Do you have good opportunities decide for yourself how to go about your work?

Low   High

○ ○ ○ ○ ○ ○

Here, you can elaborate:
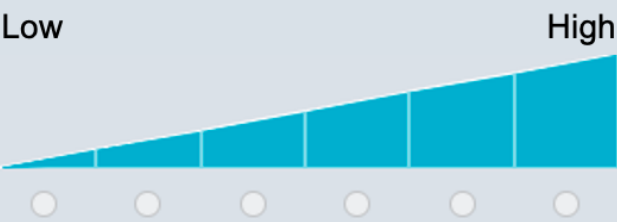
You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 7

14. Do you have appropriate responsibility in your job?

Low   High

○   ○   ○   ○   ○   ○

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

15. Are your work tasks sufficiently challenging?

Low   High

○   ○   ○   ○   ○   ○

If you would like new work areas or work tasks, you can write them here:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Set a Goal

Set the goal based on the potentials or challenges you see in your current work situation cf. the questions above.

16. What development in the way you conduct your tasks will have the greatest positive impact for us to achieve our organizational vision?

E.g., development in relation to (1) how you solve your tasks, (2) your skills and professional expertise, (3) how you collaborate with others, or (4) something else. Write at least two and at most five development goals in prioritized order:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

17. Imagine going to work one morning and all your most important development goals have been achieved. What changes do you notice?

E.g., in relation to how you succeed with your work, your relationship with colleagues, clients, etc., or in relation to how you enjoy your work.

Write key words:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

18. Is your top priority development goal linked to something that is important to you personally?

Low ○ ○ ○ ○ ○ ○ High

Here, you can elaborate:

Reflect upon which of your personal values are reflected in the development goal(s) you have made.

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____
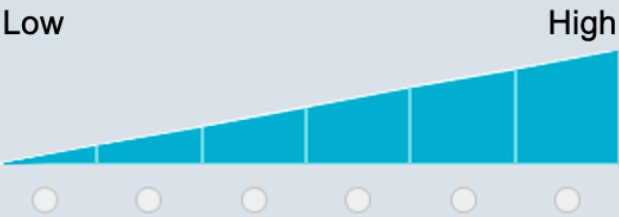
19. To what extent is your development goal ambitious?

Low ○ ○ ○ ○ ○ ○ High
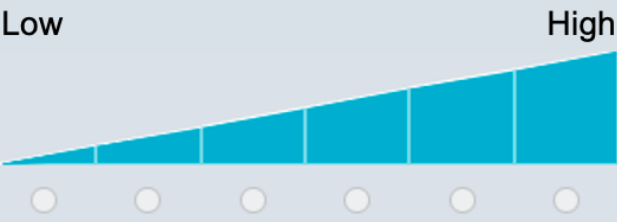
Here, you can eloborate:

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

Page 10

20. Is it realistic for you to achieve your development goal?

Low   High

○   ○   ○   ○   ○   ○

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

21. Are there conditions in your personal life that have an impact on your work?

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

22. Are there other topics you would like to discuss?

If yes, what?

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 12

Make an Action Plan

You are not supposed to answer the following questions about the action plan in your preparation. This will be done in the dialogue with your manager.

In the last part of the dialogue, you should make an action plan in relation to your development goal. Start by getting an overview of the tasks that you have already made during the dialogue.

23. Are there other actions that are necessary to ensure that you can reach your development goal and increase your contribution to the organizational vision?

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

24. Which of the actions are the most important ones?

Prioritize the actions:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 13

25. What positive experiences do you already have in relation to the development goal(s) that you have agreed on?

> Which of your strengths is particularly relevant in relation to your development goal?

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

26. What can I - as your manager - do to support you in achieving your development goal?

> Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 14

27. How can others contribute?

Who or what can help you to achieve your development goal(s)?

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

28. What could prevent you from achieving your development goal(s)?

And what strategies can you use to overcome these obstacles?

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

29. What will be the signs of you achieving your development goal(s)?

Agree on success criteria in relation to your development goal(s):

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

30. What is the very first step?

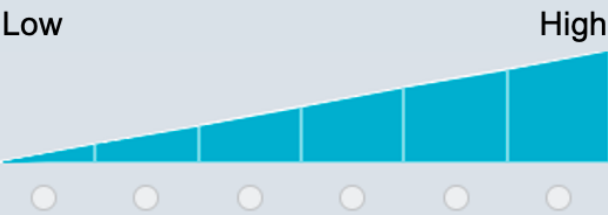What do you need to have done before our next dialogue? Note down the tasks and set a date for a follow-up.

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Follow-up dialogue

Individual version

Introduction

In the following, please answer the questions about the work regarding your development goal (related to our organizational vision/our long-term overall goals in our unit).

When you have answered the questions, you must share your answers with your manager so that they know your perspectives and can prepare the dialogue with you. This will support your perspectives on your work being at the center of the conversation.

You will not be able to cover all the questions at the dialogue. Therefore, you and your manager should select the most important topics together. However, it is important that you agree upon the next steps in your work with your development goals and your contribution to the organizational vision.

Our organizational vision

In this part of the dialogue, please consider whether something needs to be done to make the organizational vision more clear or present for you.

1. Is our organizational vision clear to you?

Low   High

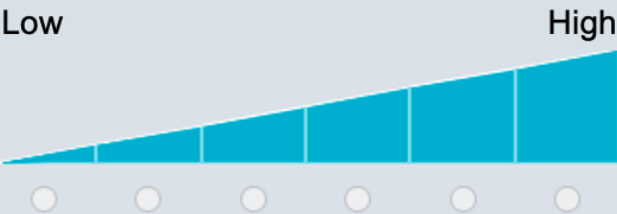Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

2. Is it clear to you how you contribute to our organizational vision?

Low .... High

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

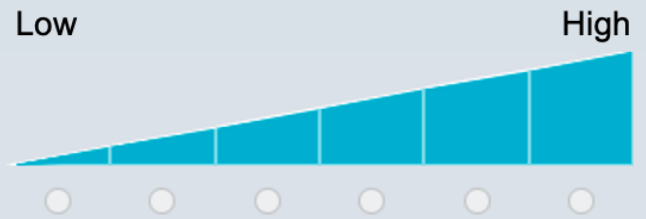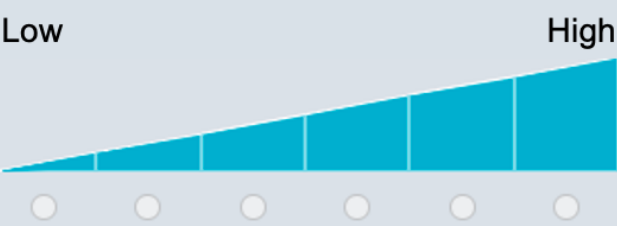**3. Is the organizational vision clear to you in your daily work?**

Low .... High

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 18

4. Do you feel committed to your development goal(s)?

Low   High

We agreed upon development goal(s) in our employee development dialogue. The development goal(s) is intended to support you in increasing your contribution to our organizational vision.
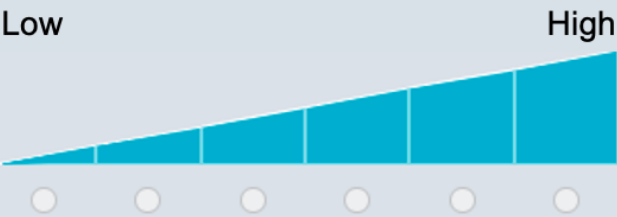
Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

5. To what extent have you succeeded with the tasks in your action plan?

Low   High

What went well? What were the ingredients of what went well? How can you repeat and expand on these successes in the future? What routines are useful for holding on to what went well?

Here, you can elaborate:
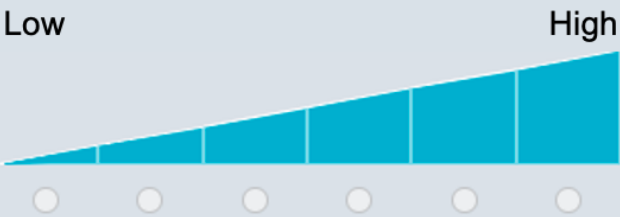
You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 19

6. Have you experienced obstacles in relation to succeeding with the actions we agreed upon last time?

Low   High

○ ○ ○ ○ ○ ○

What obstacles? Have there been examples of the obstacles not being present? What strategies can be used to overcome the obstacles?

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

7. What signs (if any) show that your actions contribute to your development goal(s) and our organizational vision?

Low   High

○ ○ ○ ○ ○ ○

What signs? Consider how the actions have contributed to your development goal(s) and our organizational vision – or why they have not.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

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Adjusting your action plan

8. Does your development goal(s) need to be adjusted?

Low   High

Reflect upon the following: When you look at your work today, what developments in the way you conduct your tasks will have the greatest positive impact for us to achieve our organizational vision?
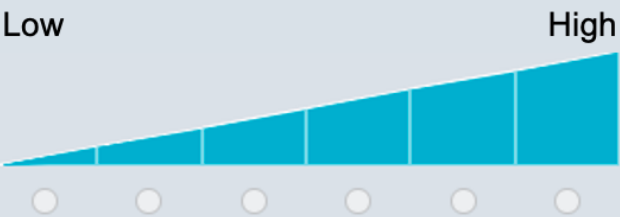
Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

9. Does your action plan need to be adjusted?

Low   High

Which actions need to be strengthened and maintained? Which actions need adjustment? Is there a need for new actions? Who or what can contribute to you achieving your development goal(s)?

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Page 21

9. What are the next specific steps to achieving your development goal(s)?

Agree upon specific actions and decide when and how you will follow up.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Follow-up on vision dialogue

Group-based version

Introduction

In the following, please answer the questions as preparation for the follow-up dialogue with your colleagues and your manager about your development objectives and your contribution to our organizational vision. The vision is a description of our overall long-term objectives.

When you have answered the questions, you must share your answers with your manager so that they know your perspectives and how you work with your development goal(s).

The group-based follow-up

Your manager will facilitate the following process:

In the follow-up dialogue, you are grouped together two and two. In pairs of two, you discuss the questions and answers that you have prepared individually. First, one of you poses the questions to the other. Afterwards, you change roles.

Let your colleague come up with their own answers and avoid judging or providing your own answers. The aim is to make your colleague reflect. You might not be able to cover all the questions; thus, you should start with the most important ones. Afterwards, you switch roles, and the other person asks the questions.

When you have both answered the most important questions, you will summarize in the entire group. Share with the entire group the learning points that are relevant for your colleagues.

At the end, reflect by yourself on what steps will be next in achieving your development objectives and your contribution to the organizational vision. Inform your manager about these steps and eventual changes in your development goal(s) and your action plan.

Our organizational vision

1. Is our organizational vision clear to you?
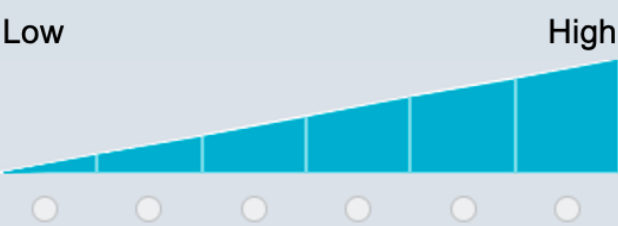
Low   High
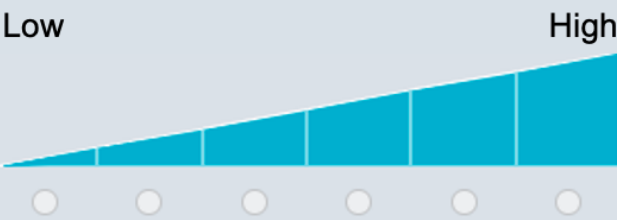
○   ○   ○   ○   ○   ○

> Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

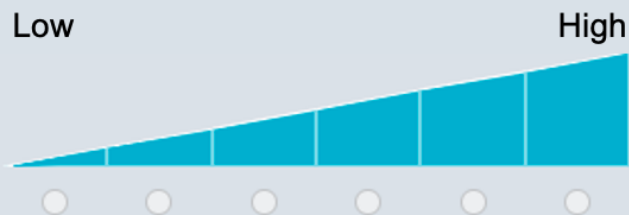## 2. Is it clear to you how you contribute to the organizational vision?

Low   High

○   ○   ○   ○   ○   ○

> Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

3. Is the organizational vision clear to you in your daily work?

Low   High
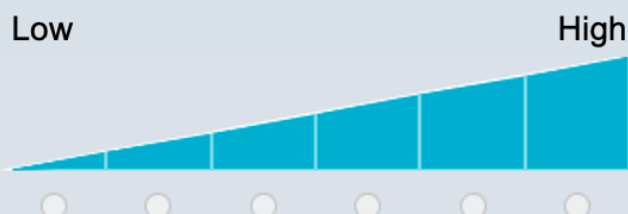
○   ○   ○   ○   ○   ○

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

Follow-up on development goal(s) and action plan

4. Do you feel committed to your development goal(s)?

Low   High

○   ○   ○   ○   ○   ○

In your employee development dialogue with your manager, you agreed upon one or more development goals. The development goal(s) is intended to support you in increasing your contribution to our organizational vision.
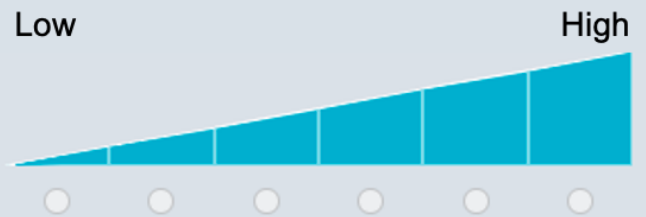
Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

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5. To what extent have you succeeded with the tasks in your action plan?

Low — High

○ ○ ○ ○ ○ ○

What went well? What were the ingredients of what went well? How can you repeat and expand on these successes in the future? What routines are useful for holding on to what went well?
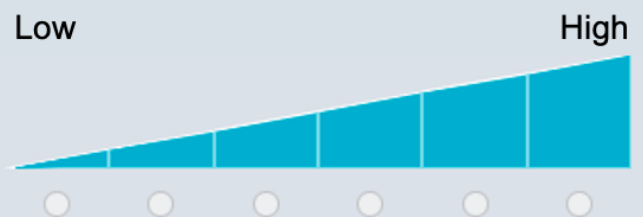
Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

6. Have you experienced obstacles in relation to succeeding with your action plan?

Low — High

○ ○ ○ ○ ○ ○

What obstacles? Have there been examples of the obstacles not being present? What strategies can be used to overcome the obstacles?
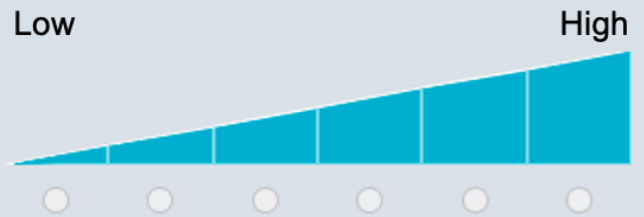
Here, you can elaborate.

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

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7. What signs (if any) show that your actions contribute to your development goal(s) and our organizational vision?

Low   High

What signs? Reflect upon how the actions have contributed to your development goal(s) and the organizational vision – or why they have not.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

Adjustment of action plan

8. Does your development goal(s) need to be adjusted?

Low   High

Reflect upon the following: When you look at your work today, what developments in the way you conduct your tasks will have the greatest positive impact for us to achieve our organizational vision?
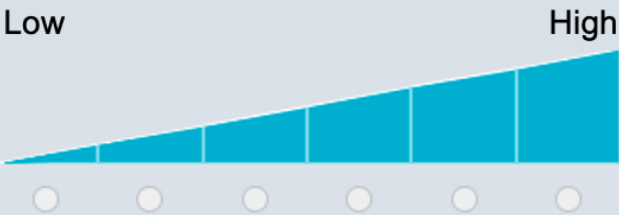
Here, you can elaborate:

You and your manager can note down tasks here:

Task description _____ Deadline _____

Task description _____ Deadline _____

Page 27

9. To what extent is there a need for changes in your action plan?

Low   High

Which actions must be strengthened and maintained? Which actions need to be adjusted? Is there a need for new actions? Who or what can contribute to you achieving your development goal(s)?

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

10. What are the next specific steps to achieving your development goal(s)?

Agree upon specific actions and decide when and how you will follow up.

Here, you can elaborate:

You and your manager can note down tasks here:

Task description_____Deadline_____

Task description_____Deadline_____

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