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Understanding MOOC completion in Dutch civil workers.

Using the theory of planned behavior and self-determination theory to identify predictors of TalentSpiegel completion.

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Master thesis Psychology, specialization Social & Organizational Psychology, 20 ects.
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Preface

"One dies of thirst just when the palm trees have appeared on the horizon" (Coelho, 2006). Conducting this research and writing my master thesis was as instructive as it was challenging. It was a great experience to conduct this study on civil workers for the A+O fonds Gemeenten. I am proud to present the final result and conclude my master in social and organizational psychology.

I would like to thank a few people who have supported me along the way. Dr. Herman Steensma has always critically evaluated my work and provided me with the needed feedback. Thank you for always believing in me.

Thank you, Marieke de Feyter, for your guidance throughout my internship, for your words of support, and especially for your help in finding the right subject for my thesis. It was challenging to come up with a subject that was useful for the A+O fonds Gemeenten and interesting for the both of us. I feel like we have succeeded in finding that topic.

Thank you, LTP business psychologists, for assisting in collecting the data that was needed for this thesis. I hope the results of this study are interesting to you as well.

A huge thank you to all the civil workers who participated in this research.

And, last but not least, I would like to thank my parents for supporting me all along the way from preschool to Master of Science.

Abstract

The A+O fonds Gemeenten has been using the TalentSpiegel to support Dutch civil-workers with their career development. Low completion rates have caused the TalentSpiegel to be less effective than intended. Over the last few years, 30.1% of the people that signed up for the tool have not completed it. The TalentSpiegel, a free to use online self-scan, is similar to a Massive Open Online Course (MOOC), in which low completion rates are a common phenomenon. The goal of this study was to identify predictors of MOOC completion by implementing the self-determination theory (SDT) and theory of planned behavior (TPB). A digital questionnaire was used to collect data from civil workers in the Netherlands (N = 252, 70.2% women). Results showed that behavioral beliefs, outcome evaluation, perceived behavioral control, intrinsic motivation, and amotivation are significant predictors for MOOC completion. Recommendation to engage in the TalentSpiegel by a career advisor and plans for evaluation were identified as specific positive predictors for the TalentSpiegel. The findings of this study are relevant to the A+O fonds Gemeenten as well as MOOC creators in general, implications will be discussed.

Keywords: MOOC, completion, civil workers, theory of planned behavior, self-determination theory

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Introduction

Dutch municipalities have been facing challenges in organizational structure and human resource management. Due to changes in jobs and finance, municipalities and their employees are forced to be flexible and adapt to changing working environment (Stichting A+O fonds Gemeenten, 2014). Recently, more tasks have shifted from the national government to the local government. In 2015, healthcare for youth, elderly, and handicapped have become the responsibility of municipalities. As of 2021 the 'omgevingswet' will become effective, creating new tasks and obligations for local governments. These changes affect the work of many Dutch civil workers and require them to improve their employability, which necessitates self-development and orientation on career changes.

A+O fonds Gemeenten

The A+O fonds Gemeenten, 'Stichting Arbeidsmarkt en Opleidingsfonds', is a fund that supports Dutch municipalities on several topics, for instance, labor market and HRM policy. Its goal is to support municipalities in becoming dynamic and creative organizations that provide an educative work environment for their employees and stimulate personal growth and development. In the end, this should result in better services for civilians. The A+O fonds Gemeenten works on this goal by organizing events, offering specialized workshops, and providing an online learning platform for civil workers throughout the country.

A diverse range of themes is addressed by the different activities organized by the A+O fonds Gemeenten, of which education and career-development are the most relevant with regards to this thesis. The A+O fonds Gemeenten encourages civil workers to improve

their employability by developing their skills and knowledge on topics that are interesting for their current or future job. In recent years, a lot has changed in the way civil workers are employed by municipalities. There has been a shift to a more flexible working style, which is characterized by more short-term contracts, more flexible jobs, an expectation to continue learning, and job-related digital developments (Stichting A+O fonds Gemeenten, 2012). At present, it is up to employees themselves to manage their own career, which is due to a change in expectations between employers and employees (van Veghel, 2017). In conclusion, this increased demand for mobility requires modern day civil workers to develop a mindset that focusses on self-learning.

The A+O fonds Gemeenten supports civil workers in developing their skills and self-knowledge through the website: meesterinjewerk.nl (translated as "master at your job"). This website is free of charge and accessible for every civil worker in the Netherlands. Earlier research by van Veghel (2017) has thoroughly analyzed the antecedents and consequences of employability orientation in meesterinjewerk.nl users. This study indicates that the website contributes to career competencies and employability orientation.

TalentSpiegel

One of the tools that is offered on the meesterinjewerk.nl website is the TalentSpiegel (translated as 'Talent Mirror'), a self-scan that enables self-reflection on work skills and personal development. The TalentSpiegel enables participants to review their own skills and capabilities in order to improve their self-knowledge. By using the TalentSpiegel, employees should learn more about themselves and think about their career development possibilities. The TalentSpiegel has been made by LTP ("Laboratorium voor

toegepaste psychologie") business psychologist, as commissioned by the A+O fonds Gemeenten. One of the main practical uses of this online questionnaire is to support human resource managers in their work with employees who are looking for a new job within or outside of the organization. The TalentSpiegel should be considered a tool to start the conversation on career development and to stimulate employees that voluntarily or forcibly have to find a new function or job.

Every Dutch civil worker can sign up for free on www.meesterinjewerk.nl and will instantly receive login details for the TalentSpiegel. The questionnaire consists of five different sections and takes about one and a half hours to complete. Directly after completing the TalentSpiegel, participants will receive an e-mail with an automatically generated report based on their answers. This report states qualities of the employee, suggestions for further development and career advice. The TalentSpiegel is based on a model that consists of three different dimensions: motives, competences, and personality. The first dimension, *motives*, is focused on what motivates people to engage in certain behavior. This dimension evaluates motivators, personal values, and career wishes. The second dimension, *competences*, addresses knowledge, qualities, and work skills. This dimension is a ranking tool and therefore fully self-reflecting. The third and final dimension, *personality*, charts the participant's personal traits. This dimension focusses on the classical big five (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience), flexibility, workstyle and learning style. In the final report, the participant is given the result of all these dimensions in a comprehendible overview.

The TalentSpiegel is fully anonymous, which means that the results are only sent to the employee and not to an employer. However, it is recommended for the employee to

share and discuss the results of the test with, for example, their HR representative or coach. The final report is lengthy and not easy to interpret for everyone. A trained HR employee can assist in selecting the most essential information, and in taking steps towards a follow-up on the TalentSpiegel. For example, a participant who scores very low on 'extraversion' might interpret this negatively because they feel that is it necessary to be outgoing and to stand out. An experienced career advisor could explain what the advantages are of not being extravert, for example, to be able to independently work on tasks. By talking about the results the employee will get a better understanding of himself, and the HR employee can suggest certain options for career development.

The fact that the TalentSpiegel is free of charge for civil workers in the Netherlands and that it is accessible at any place and time would suggest that it is a very popular tool. However, statistics indicate that a large proportion of the people who sign up for the TalentSpiegel do not complete it either do not engage with it at all (Table 1.). Since the release of the TalentSpiegel in March 2015, there has been a steady completion rate of about 70.0%. While this is not an extremely low number, it does mean that out of the 7503 civil workers that have signed up, 2260 people have not completed the questionnaire. Considering that the A+O fonds Gemeenten wants to support as many civil workers in the Netherlands as possible, this is a large amount of people who have been missed. Even more interesting is that 48.4% of these non-completers have not even logged in after signing up for the TalentSpiegel. Remarkably, 20.5% does login but only looks around and doesn't start the actual questionnaire. The rest of the non-completers do start the test, but 14.7% stops after the first of five sections, 7.9% after two sections, 3.9% after three sections, 2.5% after four sections and 2.1% stops during the fifth and final section of the questionnaire.

Table 1. TalentSpiegel completion up until 31-04-2018

Year	Number of sign-ups	Completion rate	Drop-outs
2015	2075	68.1%	662
2016	1984	70.5%	586
2017	2668	70.5%	786
2018 (January - April)	776	70.9%	226
Total	7503	69.9%	2260

These statistics indicate that there is room for improvement. Therefore, the A+O fonds Gemeenten wants to know how to improve the completion rate of the TalentSpiegel. This is the main question that will be addressed in this thesis.

Massive Open Online Courses

In research regarding Massive Open Online Courses (MOOCs), low completion rates are a commonly addressed phenomenon (Schultze, 2014; Banerjee & Duflo, 2014; Pursel, Zhang, Jablokow, Choi, & Velego, 2016; Wu & Chen, 2017). The TalentSpiegel has very similar properties compared to MOOCs. MOOCs are online courses, focused on education and self-development. They are widely accessible, often free of charge and participants can engage wherever and whenever they want. These characteristics are also applicable to the TalentSpiegel. The most significant difference would be that most MOOCs consist of a series of assignments or classes whereas the TalentSpiegel requires its users to invest one and a half hours only once.

MOOCs have risen in popularity over the last few years. Although MOOCs offer great advantages and opportunities, they have not been consistently successful. Research on MOOCs has grown simultaneously with the popularity of the learning platforms. A

variety of many different research fields, such as psychology, pedagogy, computerized education, and even economy, seem to be drawn to this topic. The following section will highlight the characteristics of MOOCs, discuss their advantages and barriers, and will conceptualize the main problem that almost every MOOC experiences.

With the introduction of MOOCs, a whole new world opened up for individuals looking for education. MOOCs were originally popular amongst universities that wanted to offer online courses to as many people as possible. MOOCs have a number of characteristics that make them appealing for organizations who want to promote their knowledge and for individuals looking to improve their professional skills. MOOCs are generally accessible anywhere in the world at any time, unlike classical courses, which are bound to space and time. This implies that participants can engage in the MOOC when it suits them and they can spend as much time on it as they like. A great number of MOOCs is free of charge, or if they do require an entrance fee, it is relatively low compared to the education that universities usually offer. In addition, since MOOCs often offer interactive platforms, it is a great way to meet others who are interested in the same field of study (Barak, Watted, & Haick, 2016). It seems that the concept of having high level education available at low cost and at any time and place almost seems too good to be true. Interestingly though, many MOOCs have a common problem: completion rates are very low, often between 5.0% and 20.0% depending on the MOOC (Schultze, 2014; Banerjee & Duflo, 2014; Pursel, Zhang, Jablokow, Choi, & Velego, 2016; Wu & Chen, 2017; El Said, 2017). Many people sign up for a course but either do not complete it or do not engage in the MOOC at all. At this point it must be noted that compared to other MOOCs, the TalentSpiegel's 70% completion rate may seem rather good. However, 30% dropout rate

is still quite a lot when realizing that over 2000 civil workers missed the chance to work on their career. Any improvement in completion rate is therefore desirable for the A+O fonds Gemeenten.

Several studies have attempted to explain this low completion rate. Rovai (2002) describes three barriers that hinder individuals in independently completing a MOOC: Feelings of isolation, lack of support from the learning community and instructor, and challenge with persistence. Firstly, feelings of isolation are a downside from the fact that MOOCs can be engaged in at any place and time. Participants are not in a classroom and may experience a lack of stimulation from likeminded others. For an individual to be successful in completing a MOOC it is important to feel social recognition (Khan et al., 2017) and to have active peer interaction (El Said, 2017). Secondly, many MOOC users that drop out lack support from the learning community or an instructor. This means that MOOC students must be self-directed learners in order to be successful (Schulze, 2014). On the other hand, studies claim that it is the task of the MOOC to offer more support and feedback possibilities in order to help those who lack self-directed learning qualities (Pursel et al., 2016; Petronzi, & Hadi, 2016). Thirdly, challenge with persistence, one of the most common reasons to drop out is that the course or separate webinars were too lengthy or contained too much information (El Said, 2017). This makes it hard for users to stay focused and can eventually result in them quitting the course. Another reason for the low completion rates of MOOCs, is that people simply want to check out the platform and may not be interested in completing it in the first place. This phenomenon is called 'shopping around for classes', people want to log in, have a look and then decide whether they are interested in the course (Banerjee & Duflo, 2014). This also seems to be the case

for the TalentSpiegel, 20.5% of the total users has logged in but has not started the actual questionnaire. This is alarming because it would be expected that participants know what they are signing up for but apparently they choose not to engage after shortly scanning the content. In conclusion, it cannot be denied that MOOCs have certain disadvantages that make them less effective than old-fashioned classroom courses.

Other studies have taken a more positive approach by looking at individual factors that improve MOOC completion. Barak, Watted, and Haick (2016) state that intrinsic motivation is an important predictor for MOOC completion. The stronger a participant's intrinsic motivation, the more likely they are to finish the course. Perception of usefulness is another often proclaimed predictor for MOOC completion as well (Liu, Kang, & McKelroy, 2015). Students that perceive a MOOC to be useful are more likely to engage and complete it. This seems to be even more relevant for workplace related learning. Employees that use MOOCs stress the importance of on-the-job learning and the necessity of the MOOC to be closely related to their actual work (Egloffstein, & Ifenthaler, 2017). Motivations to engage in a MOOC do seem to be quite similar for students and professionals. Importance of their current role, future career, casual interest and desire to learn are all reasons for both groups to engage in MOOCs (Milligan & Littlejohn, 2017).

It seems clear that the low completion rates in MOOCs are a manifold issue. The previously discussed explanations are focused on individual traits of MOOC users, but also address essential requirements for MOOCs to be attractive. The diverse range of factors involved with MOOC engagement and completion make it an interesting and complex subject. In order to be able to improve completion rates for the TalentSpiegel, this study

will link motivational behavioral theories to MOOC completion. Understanding of these theories will further help us in understanding the underlying psychology of MOOC usage.

Theoretical background

In the field of psychological research, many theories have been created on predicting and stimulating behavior, motivation, or engagement. For this thesis, two theories have been selected that have a strongly supported background in research on human behavior. These theories will be used to analyze the antecedents that influence engagement and completion of the TalentSpiegel. Firstly, the theory of planned behavior will be discussed and linked to the topic of MOOC completion. Secondly, a deeper insight will be given on the self-determination theory and its link to this topic.

The Theory of Planned Behavior (TPB) (Ajzen, 1991) has been used successfully for research in many different fields of psychological research, such as health, behavioral, and social psychology (Dawson, Mullan, & Sainsburry, 2015; Hobbs, Nixon, Johnston, & Howie, 2013; Rosland & White, 2010). Throughout the years, the TPB has remained popular amongst scientist for explaining and predicting human behavior.

According to the TPB, behavior is predicted by an individual's intention and their perceived behavioral control (Figure 1.). In turn, the intention to engage in certain behavior is predicted by an attitude toward the behavior, a subjective norm, and perceived behavioral control. According to Ajzen (1991), the intention is a positive predictor for the corresponding behavior. The result of the intention is also influenced by the actual control over the behavior. More interesting from a psychological perpective is the perceived behavioral control, which also influences the behavior that is shown. If an individual is certain they can achieve a goal, not taking into account what their actual control is, they

are more likely to achieve it (Azjen, 1991; Dawson et al, 2015). Thus, the combination of intention and perceived behavioral control is essential in predicting behavior. Translating this to the concept of the current study, it is expected that the intention to complete the TalentSpiegel and the perceived ability to complete it will be strong predictors for the actual completion rate of the TalentSpiegel.

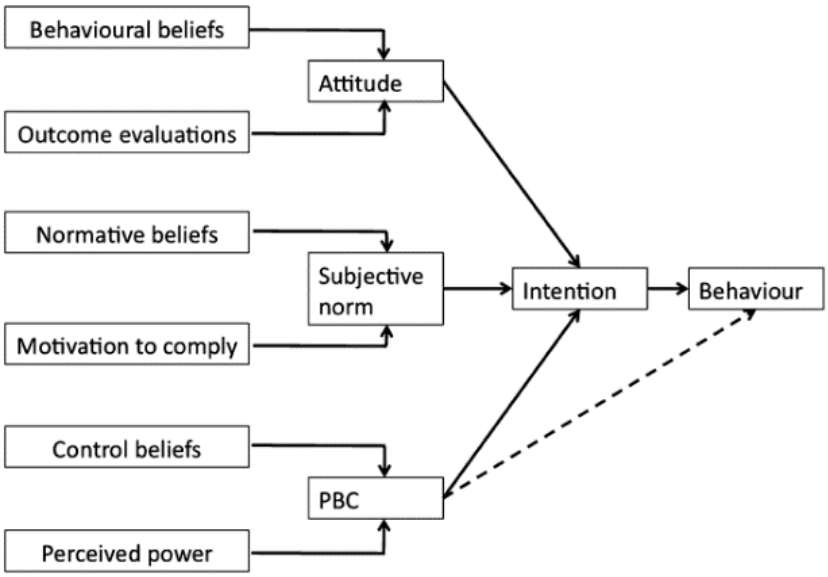

Figure 1. Theory of Planned Behavior, Dawson et al. (2015)

In order to understand the intention, we must look at the proximal predictors. The TPB states that intention is preceded by three predictors, attitude toward the behavior, subjective norm, and perceived behavioral control. An individual's attitude is formed by behavioral beliefs and outcome evaluations. If an individual believes that engaging in a certain behavior will result in a desirable outcome, he will form a positive attitude toward the behavior and thus be more likely to have the intention to do it (Hobbs et al., 2013). Depending on the beliefs in an (dis)advantageous outcome the intention can be strong or weak. For example, if someone believes that engaging in the TalentSpiegel will help with career development, this person will be more likely to complete it.

A subjective norm is formed by a person's normative beliefs and motivation to comply. The normative belief is about what others think of the behavior and its outcome. If an individual believes that peers have a positive attitude towards a certain behavior, it will increase their own intention towards the behavior. Motivation to comply is also important for this predictor, because people who are motivated to comply to a norm will be strongly influenced by it. When linking this predictor to this research, it is expected that individuals who believe that their significant others think engaging in the TalentSpiegel is important will be more likely to complete it.

Thirdly, the perceived behavioral control is formed by control beliefs and perceived power. A person who is convinced about having control over a certain behavior and having the power to do it, will have a stronger intention and, as stated before, will also directly increase the chance of showing the behavior. For this specific research it is expected that people who think they are able to complete the TalentSpiegel will be more likely to do so.

Concluding on the TPB, this theory can be linked to the expectation that peers play a role in MOOC completion (subjective norm), that belief of usefulness has an important part in MOOC completion (attitude toward behavior), and that perceived behavioral control is essential for MOOC completion. These claims will be elaborated in the 'hypotheses' section. The following paragraph will introduce the second psychological theory, the self-determination theory.

The self-determination theory (SDT) is a continuum showing different types of motivation (Gagné & Deci, 2005). For many years, when discussing motivation, there was only the distinction between extrinsic motivation and intrinsic motivation. Gagné and Deci (2005) changed this with the introduction of the SDT. In the first place, the SDT

distinguishes between amotivation, which is the absence of motivation, and motivation, the intention to engage in certain behavior. In turn, motivation can be divided into controlled motivation and autonomous motivation (Figure 2.). Extrinsic motivation is motivation controlled by others, for example through a reward or punishment system. Intrinsic motivation originates from the individual, in which case the behavior is driven by personal beliefs or interests. Extrinsic motivation is divided into four sub-groups: external, introjected, identified, and integrated regulation (Gagné & Deci, 2005). The first of these groups is strongly controlled. However, moving up, the extrinsic motivation becomes more autonomous. External regulation is the very classical form of extrinsic motivation. It can be described as motivation that is dependent on a reward or punishment system. Introjected regulation is moderately controlled. The ego of an individual is slightly involved and self-worth plays a role. People who are motivated this way might feel proud when they do well, and feel ashamed when they are unable to perform. Identified regulation is moderately autonomous motivation, when the behavior is important to the goals and the values of an individual. A person understands the importance of the behavior and is therefore more autonomously controlled. Finally, integrated regulation is autonomous motivation that is coherent to an individual's personal goals and values. Although this is not yet fully intrinsic motivation, it is said to have an internal locus of control. Full intrinsic motivation for a task requires interest and enjoyment in the task as it is.

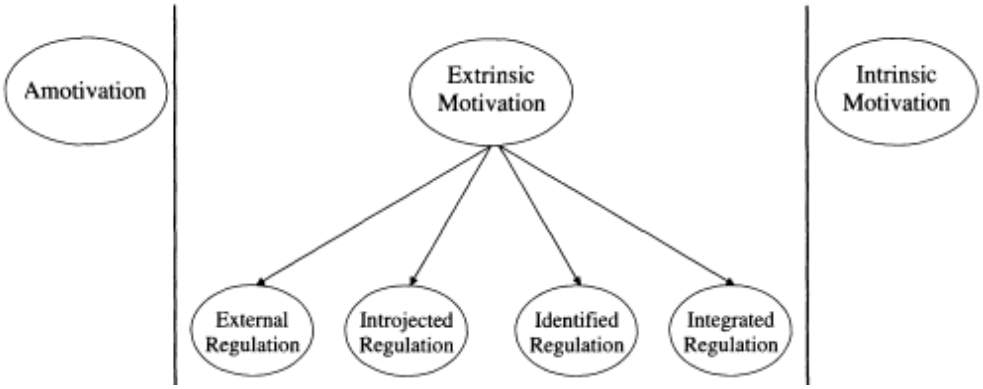

Figure 2. The self-determination continuum, Gagné and Deci (2005)

Research on motivation and the SDT in the past few years indicates that, in most cases, a more autonomous motivation can be linked to better performance at a task. Not only self-reported competence and performance increase with more autonomy, but performance reports by others as well (Gagné et al., 2015; Katz, Madjar, & Harari, 2015; Olafson, Deci, & Halvari, 2018; Zhou, 2016). Intrinsic motivation is the most beneficial form of motivation and extrinsic motivation will result in better performance as the autonomy increases.

Regarding MOOC completion, a similar outcome is expected. Individuals that score high on identified or integrated regulation or intrinsic motivation will be more likely to complete the TalentSpiegel than individuals who score high on external or introjected regulation. A civil worker that sees and accepts the value of a career development tool such as the TalentSpiegel has an increased chance of completing it. On the other hand, when a person has been forced to participate by, for example, a supervisor, that person might sign up for the scan but is unlikely to complete it. This claim will be elaborated upon in the hypotheses section. Earlier studies applying the SDT to MOOC research have generated interesting but mixed results. Durksen et al. (2016) used the SDT to predict engagement in MOOCs integrating all three basic psychological needs; autonomy, competence and

relatedness. Their study indicated a strong positive relation between autonomy and MOOC performance. Participants with high autonomy had 80.0% chance of being scored at a moderate level of competence. They also state that autonomy and competence are closely related and that relatedness is more challenging to achieve in a MOOC setting but does play an important separated role. These conclusions conflict with the results on a MOOC study using the SDT to provide a framework for MOOC acceptance in developing countries (Khan et al., 2017). Their result indicates that within the SDT framework, perceived relatedness and perceived competence are significant predictors for behavioral intention to engage in a MOOC. No significant relation between perceived autonomy and behavioral intention was found. It is important to notice that this study was conducted in a very different cultural setting, which may explain the difference. However, this does indicate that the connection between the SDT and MOOC engagement is not fully determined yet, which adds to the importance of further research.

Relevancy

Research on the factors that predict MOOC completion is relevant, in general and especially for the A+O fonds Gemeenten, because it provides knowledge that is needed for improving online learning platforms in the future, and will also help in understanding how to stimulate users who lack the ability to fully independently complete a course. At the moment, the TalentSpiegel is not reaching its full potential. The tool is out there and ready to be used, but many participants are lost right after they sign up for the online platform. This research provides insights that help with the development of the platform, making it more appealing to the people that are now dropping out in an early stage. By identifying certain factors that boost participation or prevent it, new ways to motivate users are found.

This research should also be insightful for other organizations looking to improve their MOOC. The sharing of information on MOOC improvement will stimulate the international development of free learning platforms and therefore stimulate individuals all over the globe to increase their own knowledge and skills.

This specific research stands out from most articles on MOOC research because it targets a population that is different from those used for most MOOC studies. The population that is targeted in this study is Dutch, has a relatively high mean age, and is employed as civil worker. When comparing this population with the more common groups that are used for research on this topic, we can see that the population is quite unique. First of all, most research on MOOCs is conducted in the USA, even though the MOOCs in these studies are available worldwide, the majority of most MOOC users is from the same country as the organization that offers the MOOC. Veletsianos and Shepherdson (2016) indicate that 50.2% of the MOOC research conducted in 2013 to 2015 was done by an institute in the USA. Only 1.1 percent of the research in their analysis was conducted in the Netherlands. Secondly, a lot of research on MOOCs is done with students who are relatively young compared to the population in this research. This age difference could cause different learning preferences and motivations. Watted & Barak (2018) indicate that students developed a strong intrinsic motivation for MOOC participation as the course continued. The civil workers that start the TalentSpiegel may not always be intrinsically motivated and may also lack time to engage in the tool due to their jobs. Thirdly, most of the MOOCs provided by universities attract participants with a high level education, this could be a university degree or advance college degree. Not all civil workers have a

university or college level background. Therefore, it is interesting to see how this group experiences the TalentSpiegel.

These three differences do not necessarily imply a unique outcome. However, it does add to the diversity of the research field. Since the research on MOOCs is still in an early stage, any diversity in populations is stimulating for the general knowledge on this topic.

Hypotheses

The objective of this study is to find out how completion rates of MOOCs in general, and specifically the TalentSpiegel, can be imroved. This study will result in an advice for the A+O fonds on how to increase the engagement in their platform by identifying factors that predict completion of the TalentSpiegel in individuals. Factors that predict completion rates and that can be influenced by the A+O fonds Gemeenten or the municipalities themselves are the key in motivating civil workers to complete the TalentSpiegel. In general, this research will shed light on the improvement of user motivation and participation in any MOOC. The hypotheses model is shown in Figure 3.

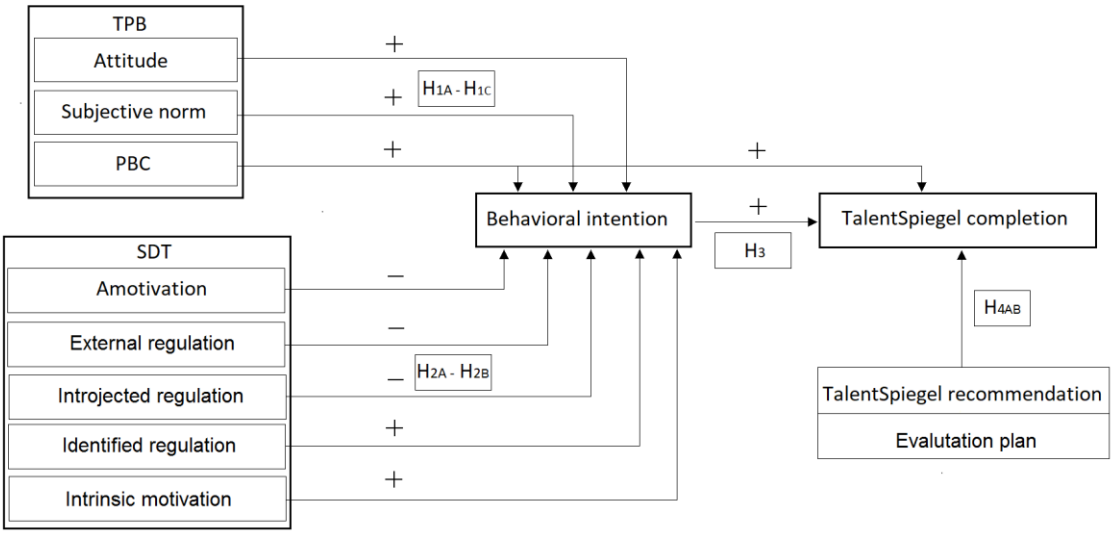

Figure 3. Hypotheses model of possible predictors of behavioral intention and TalentSpiegel completion

Based on the current knowledge on MOOC completion predictors and psychological theories that predict behavior and motivation, the following hypotheses have been formulated.

H_{1A}: Attitude toward TalentSpiegel completion is a positive predictor for intention to complete the TalentSpiegel. Participants that score high on attitude toward the behavior will score higher on intention to complete the TalentSpiegel compared to participants that score low on attitude toward behavior.

This hypothesis is based on the TPB, which claims that attitude toward the behavior influences the intention to show certain behavior. Research on MOOC completion suggests that belief of usefulness plays an important role in MOOC completion. An individual who believes that the outcome of the behavior is advantageous will me more likely to engage in the behavior.

H_{1B}: Subjective norm is a positive predictor for intention to complete the TalentSpiegel. Participants that score high on subjective norm will score higher on intention to complete the TalentSpiegel compared to participants that score low on subjective norm.

This hypothesis is based on the TPB, which claims that subjective norms influence the intention to show certain behavior. In addition, previous literature on MOOCs suggest that significant others play an important role in MOOC engagement and participation. Promoting involvement of significant others (i.e. friends, family, or colleagues) will increase the intention and actual MOOC completion.

H_{1C}: Perceived behavioral control (PBC) is a positive predictor for intention to complete the TalentSpiegel and for actual completion of the TalentSpiegel. Participants that score high on PBC will score higher on intention to complete the TalentSpiegel compared to participants that score low on PBC and are more likely to actually complete it.

This hypothesis is based on the TPB, which claims that PBC influences the intention to show certain behavior and also directly influences the behavior. Previous research has indicated that individuals who believe they are in control of certain behavior are more prone to actually do it.

H_{2A}: Amotivation, external regulation, and introjected regulation are negative predictors for intention to complete the TalentSpiegel.

This hypothesis is based on the SDT, which states that amotivation, and highly controlled forms of motivation do not or negatively affect the prevalence of certain behavior.

H_{2B}: Identified regulation and intrinsic motivation are positive predictors for intention to complete the TalentSpiegel.

This hypothesis is based on the SDT, which states that more autonomous forms of motivation stimulate behavior.

H_3: Intention to complete the TalentSpiegel is a positive predictor for actual completion of the TalentSpiegel. According to the TPB, a high intention to show

certain behavior will more likely result in the actual behavior compared to a low intention.

H_{4A}: Completion of the TalentSpiegel is influenced by whether the TalentSpiegel was recommended by a significant other. This is a non-directional hypothesis because both the TPB and the SDT predict different outcomes. According to the TPB the recommendation by another will positively influence TalentSpiegel completion as it can be linked to subjective norm. However, the SDT states that autonomy positively influences behavior, therefore participants that engaged in the TalentSpiegel autonomously, without recommendation, should be more likely to complete it.

H_{4B}: Whether the participant had planned to discuss the TalentSpiegel report before engaging with it influences completion of the TalentSpiegel. Again, this hypothesis is non-directional. The concept of subjective norm would suggest a positive relation, however, the SDT would expect 'planning to discuss the report' to be a negative predictor because of decreased autonomy.

Method

Design and participants

The design of this study is cross sectional with no manipulations. The research population consists of civil workers who have signed up for the TalentSpiegel between September 1st 2017 and April 30th 2018, a period of eight months. An e-mail (see appendix I) was sent out to a total of 1857 civil workers of which 1355 (73%) have completed the

TalentSpiegel. Over a period of 19 days a total of 261 civil workers have started the questionnaire, 194 of them have finished it (74.3%). Of those who have completed the TalentSpiegel, 215 started the questionnaire and 166 finished it (77.3%). Of those who did not complete the TalentSpiegel 46 started the questionnaire and 28 finished it (60.9%). Of the total 261 participants, 9 were left out of the analyses because they had only answered a few questions. All participants who completed the survey completely were used in all the analyses. A group of 58 participants did not fully complete the survey but did at least answer all questions about the TalentSpiegel (Ts.6) (cut off point at 19% completion). Since their information is valuable, and would seem wasted when not included because they did not finalize the survey, their answers were used for the hypotheses 4_{AB}. For example, if a participant did not finish the survey but did complete 50%, their answers on demographics and about the TalentSpiegel (Ts.1 – Ts.6) would still be used but only for hypotheses 4_{AB}.

In total, N = 252 (70.2% female) civil workers participated. Most of the participants (32.9%) were between 46 and 55 years old, 27.4% was between 36 and 45 years old, 16.3% was between 26 and 35 years old, 16.3% between 56 and 65. The smallest group, of 7.1%, was under 26 years old. Highest level of completed education was for most participants 'HBO' (45.6%), followed by 'MBO' (24.2%) and 'WO' (23.4%). Most participants worked in either Zuid-Holland (28.6%), Noord-Holland (19.4%), or Noord-Brabant (17.1%).

Procedure

An online questionnaire (see appendix II) was sent out to the TalentSpiegel users by e-mail. This questionnaire consisted of 62 items and took approximately 15 minutes to

complete. Participants were instructed that participation was voluntary and that their response would be administered anonymously. To stimulate participation rates, a total of ten gift cards with a value of 25,00 Euro were raffled amongst participants.

Instrument

The survey collected demographic information through five items. Another six items assessed subjects regarding the TalentSpiegel (e.g, "Was the TalentSpiegel recommended to you by someone?"). These items were used to check for interesting differences between TalentSpiegel completers and non-completers. The first item regarding the TalentSpiegel was about completion. This item was purely here for control reasons since links to separate questionnaires were sent out to participants based on whether they had completed the TalentSpiegel according to the data. A total of 17 items regarded the theory of planned behavior and were constructed according to the guidelines of Ajzen (2006). These items measured attitude towards TalentSpiegel completion (e.g., "Completing the TalentSpiegel has a positive effect on my career."), subjective norm (e.g., "most people who are important to me approve of my completion of the TalentSpiegel."), perceived behavioral control (e.g., "I am confident that I can complete the TalentSpiegel.") and intention of TalentSpiegel completion (e.g., "When I sign up for the TalentSpiegel, I want to complete it."). All items were answered on a 7-points Likert Scale (1 = disagree strongly, 7 = agree strongly) resulting in a specific score on each construct. A total of 19 items regarding the self-determination theory were used. These items were based on the Multidimensional Work Motivation Scale (MWMS) (Gagné et al., 2015). The main question for all of the items was, "To what extent are the following propositions reasons for you to get involved in the TalentSpiegel". Items were, again, answered on a 7-points

Likert Scale (1 = not at all, 7 = entirely) resulting in a specific score on each construct. The items measured the different motivational types defined by the SDT: external regulation (e.g., "To get others' approval."), introjected regulation (e.g., "Because I have to prove to myself that I can do it."), identified regulation (e.g., "Because I personally consider it important to complete the TalentSpiegel."), intrinsic motivation (e.g., "Because I have fun completing the TalentSpiegel."), and amotivation (e.g., "I don't because I feel like I'm wasting my time on the TalentSpiegel."). In order to control for a social desirability bias, 15 items were added from a short version of the Balanced Inventory and Impression Management (BIDR). Hart, Ritchie, Hepper, and Gebauer (2015) constructed a short version of the BIDR and selected 16 items while retaining its two factor structure (self-deceptive enhancement and impression management), reliability, and validity. Self-deceptive enhancement occurs when participants are honest but overly positive (e.g., "I never regret my decisions."). Impression management is a bias that occurs when participants tend to respond more pleasing toward others (e.g., "I never cover up my mistakes."). One item was left out of the survey because it was considered inappropriate to ask in this setting (item 18: "I have sometimes doubted my ability as a lover.").

Analysis

The data was analyzed with the use of SPSS. Principal component and reliability analyses were used to check the constructs of the theories and the reliability of the questionnaire. Multiple regression analyses (MRA) and logistic regression analyses (LRA) were used to test the first three hypotheses. MRA can be used to identify predictors for an interval variable, such as intention in this study. LRA is used to predict a binary variable (completion of the TalentSpiegel) from one or multiple variables. Crosstabulation with chi-

square test were used to test H_{4A} and H_{4B}. The results of the statistical analyses are reported in the following section.

Results

Principal component analyses

A principal component analysis (PCA) was used to identify the different constructs within the TPB, SDT and BIDR. PCA was conducted on the 15 items from the TPB questions of the survey with a varimax rotation. The sample adequacy was confirmed by the Kaiser-Meyer-Olkin measure which preferably should be above .70 and at least above .50 (Field, 2013), KMO = .86. All KMO values of individual items were above .78, which is above the preferred limit of .70. Four factors had eigenvalues over 1, Kaiser's criterion, and in combination explained 68.2% of the variance. The scree plot showed possible inflection points at 2, 3, or 4 factors. The rotated factor matrix indicates 4 factors. The TPB section was intended to consist of 3 factors, however, the factor analysis seems to distinguish between outcome evaluation and behavioral beliefs within the attitude toward behavior construct. This suggest that factor 1 represents behavioral beliefs, factor 2 represents perceived behavioral control, factor 3 represents outcome evaluation, and factor 4 subjective norm (see Appendix III).

Another PCA with varimax rotation was conducted on the 19 items of the SDT questions of the survey. The sample adequacy was confirmed, KMO = .85. All KMO values of individual items were above .78. Four factors had eigenvalues over 1 and in combination explained 70.4% of the variance. Originally, the SDT section was made up of five different factors. However, the factor analysis indicates that this sample consist of only four factors, combining intrinsic motivation and identified regulation into one. The

combination of these factors is no surprise since they are the most intrinsic forms of motivation within the SDT. From this point on this combined factor will be referred to as 'intrinsic identified motivation'. This suggests that factor 1 represents intrinsic identified motivation, factor 2 represents external regulation, factor 3 introjected regulation and factor 4 amotivation (see Appendix III).

A final PCA with varimax rotation was conducted on the 15 items of the shortened BIDR. The sample adequacy was confirmed, KMO = .64, which is considered mediocre. All KMO values of individual items were above .54, which is just above the minimum. The principal component analysis indicated five factors with eigenvalues higher than 1. However, this did not result in a clear model and since the BIDR is intended to have two factors the analysis was performed again for two factors only. This resulted in a clear division between two factors explaining 31% of the variance. Factor 1 represents impression management and factor 2 represents self-deceptive enhancement (see Appendix III). Item Im.2 ('Ik verdoezel nooit mijn fouten') did not load on either factor and was therefore left out of the analysis.

Reliability analysis

All subscales of the TPB and SDT scored very well on the reliability analysis (Table 2.). Most scores were well above the preferred limit of $\alpha = .70$. One item was deleted from the intention scale (Int.3) because this boosted the Cronbach's Alpha from .63 to .94, which is deemed a strong improvement. This item was reversed which may have been overlooked by certain participants making it less valuable for the scale. The subscales of the BIDR scored less convincing than the other subscales, but their scores, $\alpha = .65$ (SDE) and $\alpha = .64$ (IM), are still considered adequate for the analysis (Table 7.).

Table 2. Means, standard deviations, number of values, correlations and reliabilities of the predictors.

Variable	*M*	*SD*	*SE*	*N*	1	2	3	4	5	6	7	8	9
1. Behavioral beliefs	5.11	1.25	.08	246	(.84)								
2. Outcome evaluation	3.86	1.18	.08	223	.408**	(.87)							
3. Subjective norm	3.53	1.20	.08	223	.422**	.501**	(.76)						
4. PBC	5.63	1.06	.07	223	.474**	.287**	.204**	(.76)					
5. Amotivation	1.95	1.05	.07	204	-.511**	-.465**	-.282**	-.437**	(.87)				
6. External regulation	1.78	.88	.06	215	-.188**	.071	.345**	-.325**	.364**	(.88)			
7. Introjected regulation	2.35	1.15	.08	208	.067	.229**	.366**	-.127*	.032	.466**	(.84)		
8. Intrinsic identified motivation	4.55	1.13	.08	204	.564**	.531**	.452**	.457**	-.574**	-.125	.271**	(.89)	
9. Intention	5.63	1.26	.08	223	.489**	.329**	.268**	.626**	-.493**	-.280**	-.004	.485**	(.94)

P < .05; * *p* < .01; ** (two-tailed). Numbers in parentheses indicate internal reliability estimates (Cronbach's Alpha)

Hypothesis 1

A multiple regression analysis (MRA) was conducted to measure whether behavioral beliefs, outcome evaluation, subjective norm, and PBC are significant predictors for intention. Normality of the residuals was tested by checking the histogram and P-P Plots on the standardized residuals of dependent variable intention. With no sign of non-normality this assumption was met. Plots of the standardized residuals against standardized predicted values indicated that the relationship between the predictors and dependent variable was linear. The assumption of homoscedasticity was checked in the same way and also met. The assumption of independent errors is mainly a design matter. However, with a Durbin-Watson score of 1.94, which should be close to 2, we can safely assume this is no problem (Field, 2013). There is no sign of multicollinearity, all VIF scores were below 10 and all Tolerance scores above .2 (Field, 2013). One outlier was detected

based on its standardized residual lower than -3. However, this case was not excluded since Cook's distance was 0.40, thus well below the limit of 1 (Field, 2013). The model as a whole is a significant predictor for intention, F (4, 189) = 40.85, $p < .001$. The model explains a total variance of 46.4%. The results indicate that PBC is the strongest predictor for intention in this model (Table 3.). Behavioral beliefs and outcome evaluation are also significant predictors as expected. Only subjective norm is not significant and therefore does not seem to predict intention to complete the TalentSpiegel in this model.

Table 3. Linear model of predictors of intention, with 95% confidence intervals reported in parentheses.

	B	*SE B*	*β*	*p*
(Constant)	.44 (-.38, 1.26)	.42		$p = .288$
Behavioral beliefs	.22 (.10, .35)	.06	.22	$p = .001$
Outcome evaluation	.13 (.01, .26)	.07	.12	$p = .049$
Subjective norm	.06 (-.06, .19)	.06	.06	$p = .325$
Perceived behavioral control	.59 (.45, .73)	.07	.48	$p < .001$

$R^2 = .464$

In order to check the direct effect of the predictors behavior beliefs, outcome evaluation, subjective norm, and PBC on completion of the TalentSpiegel, a logistic regression analysis (LRA) was conducted. According to the TPB, PCB directly influences the actual behavior, however, for the integrality of this study all predictors were tested as predictors for actual TalentSpiegel completion. The assumption of linearity was met for behavioral beliefs, the interaction terms of this predictor and its logit was not significant ($p = .419$). There is no sign of multicollinearity, all VIF values are below 10 and Tolerance above .2. Three outliers were detected, but they were not excluded from the dataset since none of the

Cook's d scores was above one. First, the predictors were separately checked as predictors resulting in the univariable odds ratio (Table 4.), This was done to identify possible predictors for the final model. Since the non-completion group only had $N = 28$ it was unwise to include all four predictors, unless they were all considered significant (Reilly et al., 2005). Behavioral beliefs and PBC were significant predictors and therefore used in the final model. The LRA indicates that the model is significantly better with the predictors included, χ^2 (2) = 11.75, $p = .003$. The only predictor making a significant difference to the outcome in the final model is Behavioral beliefs (Table 4.) with an odds ratio of .61. Meaning that behavioral beliefs is a positive predictor for completion of the TalentSpiegel.

Table 4. Logistic regression analysis on completion of the TalentSpiegel, with 95% confidence intervals reported in parentheses.

	Univariable odds ratio	*p*	Final model odds ratio	*p*
Behavioral beliefs	.58 (.41, .81)	$p = .001$	.61 (.43, .88)	$p = .008$
Outcome evaluation	.87 (.61, 1.23)	$p = .423$	-	-
Subjective norm	.76 (.54, 1.08)	$p = .121$	-	-
Perceived behavioral control	.64 (.43, .96)	$p = .031$	.81 (.53, 1.25)	$p = .337$

R^2 = .059 (Cox & Snell) .105 (Nagelkerke)

Hypothesis 2

A second MRA was conducted to measure if external regulation, introjected regulation, intrinsic identified motivation, and amotivation were significant predictors for intention to complete the TalentSpiegel. Normality of the residuals was tested by checking the histogram and P-P Plots on the standardized residuals of dependent variable intention. With no sign of non-normality this assumption was met. Plots of the standardized residuals against standardized predicted values indicated that the relationship between the predictors

and dependent variable was linear. The assumption of homoscedasticity was checked in the same way and also met. The assumption of independent errors can be assumed to be safe with a Durbin-Watson sore of 2.02. There is no sign of multicollinearity, all VIF score were below 10 and all Tolerance scores above .2. One outlier was detected but not excluded considering its Cook's Distance was well below 1. The model as a whole is a significant predictor for intention, F (4, 189) = 32.16, $p < .001$. The model explains a total variance of 40.5%. Looking at the coefficients (Table 5.), external regulation and introjected regulation are not significant predictors for intention in this model. Intrinsic identified motivation is a significant positive predictor for intention, and also the strongest predictor in the whole model. Amotivation is a significant negative predictor for intention.

Table 5. Linear model of predictors of intention, with 95% confidence intervals reported in parentheses.

	B	*SE B*	*β*	*p*
(Constant)	4.72 (3.79, 5.65)	.47		$p < .001$
Amotivation	-.398 (-.58, -.21)	.09	-.31	$p < .001$
External regulation	-.129 (-.32, .07)	.10	-.09	$p = .192$
Introjected regulation	-.01 (-.15, .13)	.07	-.01	$p = .896$
Intrinsic identified motivation	.42 (.26, .59)	.08	.37	$p < .001$

$R^2 = .405$

In order to check the direct effect of the predictors external regulation, introjected regulation, identified intrinsic motivation, and amotivation on completion of the TalentSpiegel, a logistic regression analysis (LRA) was conducted. The assumption of linearity was met, just closely for intrinsic motivation ($p = .082$). There was no sign of multicollinearity, all VIF values are below 10 and Tolerance above .2. Four outliers were

detected, but they were not excluded from the dataset since none of the Cook's d scores was above one. Again, the predictors were checked separately at first, resulting in the univariable odds ratio (Table 6.). This exploration showed intrinsic identified motivation and amotivation as significant predictors for TalentSpiegel completion, similar to the MRA. Therefore, these two predictors were included in the final model. The LRA indicates that the final model is significantly better with the predictors included, χ^2 (2) = 13.94, p = .001. The only predictor making a significant difference to the outcome in the final model is intrinsic identified motivation, B = -.53 (SE = .22), with an odds ratio of .59. Meaning that intrinsic identified motivation is a positive predictor for completing the TalentSpiegel.

Table 6. Logistic regression analysis on completion of the TalentSpiegel, with 95% confidence intervals reported in parentheses.

	Univariable odds ratio	*p*	Final model odds ratio	*p*
Amotivation	1.73 (1.20, 2.50)	p = .003	1.28 (.82, 2.00)	p = .285
External regulation	1.16 (.76, 1.78)	p = .486	-	-
Introjected regulation	1.00 (.70, 1.41)	p = .984	-	-
Intrinsic identified motivation	.52 (.36, .75)	p < .001	.59 (.38, .91)	p = .017

R^2 = .069 (Cox & Snell) .123 (Nagelkerke)

Hypothesis 3

Hypothesis 3 stated that intention is a positive predictor for completion of the TalentSpiegel. This hypothesis is tested by conducting a LRA. Initially the intention scale consisted of three items. However, by deleting the third item, which was reversed, the reliability of the scale increased from α = .63 to α = .94, therefore the third item was excluded. The assumption of linearity was tested by running a LRA with a predictor of the interaction of the variable intention and the log of itself. The interaction term was not

significant, p = .304, with indicates that the assumption of linearity is met (Field, 2013). Three outliers were detected, but they were not excluded from the dataset since none of the Cook's d scores was above one. The chi-square statistic for the model was significant, χ^2 (1) = 5.54, p = .019, which means that the model improved by adding intention as a predictor. The predictor intention had a value of B = -.37 ($SE\ B$ = .16), p = .017, and an odds ratio of 0.69 (95% CI: .51, .94). The variance explained by the model is indicated by R^2 = .03 (Cox & Snell) and .05 (Nagelkerke). The odds ratio indicates that the chances of completing the TalentSpiegel increases along with the intention to complete the TalentSpiegel. In other words, Intention is a positive predictor of TalentSpiegel completion.

Hypothesis 4

Hypothesis 4_A stated that being recommended to partake in the TalentSpiegel could have either a positive or a negative effect on TalentSpiegel completion. The relationship between these two categorical variables was tested using Pearson's chi-square test. The chi-square test indicates that 162 (75.3% of TalentSpiegel completed) participants completed the TalentSpiegel when they had a recommendation. Whereas 27 participants (58.7% of TalentSpiegel not completed) did not complete the TalentSpiegel when they had a recommendation. The results indicate a significant association between being recommended to do the TalentSpiegel or finding it independently and TalentSpiegel completion χ^2 (1) = 5.26, p = .029. Based on the odds ratio, the chances of completing the TalentSpiegel are 2.15 times higher if the TalentSpiegel was recommended to a participant than if the participant found the TalentSpiegel independently.

The question further assessed whether it made a difference who recommended the TalentSpiegel. To the question who recommended the TalentSpiegel, 49 participants responded with 'supervisor' (18.8%), 107 participants answered 'career advisor/HR/P&O' (41%), 33 participants answered 'colleague' (12.6%), zero participants responded that the TalentSpiegel had been recommended by a friend or by family. Again, the relationships between the categorical variables were tested using Pearson's chi-square test. One significant predictor was found, which was 'career advisor/HR/P&O'. The results indicate a significant association between being recommended by 'career advisor/HR/P&O' or not and TalentSpiegel completion χ^2 (1) = 6.74, p = .013. Based on the odds ratio, the chances of completing the TalentSpiegel were 2.57 times higher if the TalentSpiegel was recommended by 'career advisor/HR/P&O' than if it was not recommended by 'career advisor/HR/P&O'.

Regarding hypothesis 4_B Participants were also asked whether they had planned to discuss the outcome of the TalentSpiegel before starting it. The relationship between TalentSpiegel completion and whether participants had planned to discuss the outcome was tested using Pearson's chi-square test. The results indicate that 88 participants (44.9% of total) who completed the TalentSpiegel had already planned to discuss the results compared to 5 (16.1% of total) of those who have not completed the TalentSpiegel. This indicates a significant association between planning to discuss the outcome or not and TalentSpiegel completion χ^2 (1) = 9.16, p = .003. Based on the odds ratio, the chances of completing the TalentSpiegel were 4.24 times higher if the participants had planned to discuss the outcome upfront, compared to participants who had not planned to do so. Participants who responded that they had planned to discuss the outcome were also asked

if they had already set a specific appointment to do so. No comparison to completion of the TalentSpiegel were made because the population within this question for TalentSpiegel not completed was too small and assumptions were violated.

For further exploration, the study checked for 'shopping around for classes' which might be a reason for participants to log in and see what it is about, after which they might conclude it is not what they were looking for and thus not complete it. Participants were asked on a 7-point scale question whether they knew what the TalentSpiegel was about before they started it, this will be referred to as 'familiarity'. Only two participants (0.8%) indicated that they did not know anything about the TalentSpiegel before starting it, another 19 (7.3%) indicated that they barely knew what the TalentSpiegel was about before starting it. On the other hand, 233 (91.9%) participants responded that they knew the contents of the TalentSpiegel at least a little bit. A LRA was conducted with familiarity as predictor of TalentSpiegel completion. The assumption of linearity was met, the interaction probability was not significant (p = .157). The chi-square statistic for the model was significant, χ^2 (1) = 6.31, p = .012, which means that the model improved by adding familiarity as a predictor. The predictor familiarity had a value of B = -.33 ($SE\ B$ = .13), p = .014, and has an odds ratio of 0.72 (95% CI: .55, .94). The variance explained by the model is indicated by R^2 = .03 (Cox & Snell) and .04 (Nagelkerke). The odds ratio indicates that the chances of completing the TalentSpiegel increases when participants indicate to be more familiar with the TalentSpiegel.

In addition, participants were asked whether they have actually discussed the report afterwards and with whom, multiple answers were possible in response to this question. A total of 89 participants (34.1%) indicated that they did not discuss the results, 34

participants (13%) discussed the results with a supervisor, 71 participants (27.2%) discussed the results with a career advisor, 41 participants (15.7%) discussed the results with a colleague, 14 participants (5.4%) discussed the results with a friend, and 21 participants (8%) discussed the results with a family member. No analysis will be conducted on these numbers since they are not relevant to TalentSpiegel completion. However, they are included here as relevant information for the A+O fonds Gemeenten and LTP.

Social desirability bias

The BIDR-15 was added to the questionnaire to control for a social desirability bias. The mean scores on the BIDR and the mean scores of each construct, self-deceptive enhancement (SDE) and impression management (IM), were checked for correlations with the mean scores on all predictors (Table 7.). The results indicate that there are significant correlations between the BIDR and some of the predictors. However, none of the correlations are above .30. Therefore, there is no reason to suspect that social desirability influenced the results of this study too heavily. Correlations above .50 could be considered problematic which is not the case for these predictors. It is, however, interesting to note that almost all correlations on impression management are significant compared to the scores on self-deceptive enhancement, where only one predictor is significantly correlated. This could indicate that if there is any sort of social desirability bias at work it would probably be about making a good impression on others and not creating a deceptive view for the self. In other words, participants are, in this study, more prone to change their answers slightly based upon what they think others want to hear. Which is in itself interesting because this conflicts with the non-significant results of subjective norm and

external regulation on intention to complete the TalentSpiegel and TalentSpiegel completion.

Table 7. Pearson correlation of BIDR scores with the predictors, with reliability reported in parentheses.

Predictor	BIDR-15 (α = .65)	SDE (α = .65)	IM (α = .64)
Behavioral beliefs	.274**	.013	.258**
Outcome evaluation	.144*	.024	.167*
Subjective norm	.130	-.033	.234**
PBC	.263**	.186**	.154*
Amotivation	-.209**	.060	-.199**
External regulation	-.164*	-.040	-.074
Introjected regulation	-.008	-.036	.037
Intrinsic identified motivation	.158*	-.017	.198**
Intention	.219**	.120	.179**

P < .05; * *p* < .01; ** (two-tailed).

Discussion

The goal of this study was to identify predictors of MOOC completion, specifically completion of the online career development tool the TalentSpiegel. Knowledge about these predictors should help the A+O fonds Gemeenten and LTP to improve future completion rates of the TalentSpiegel and other online assessment methods. In addition, generalized findings from this study should contribute to the overall improvement of MOOC completion. After testing the proposed hypotheses, the research has led to a final model (Figure 4.) which will be discussed in the following section.

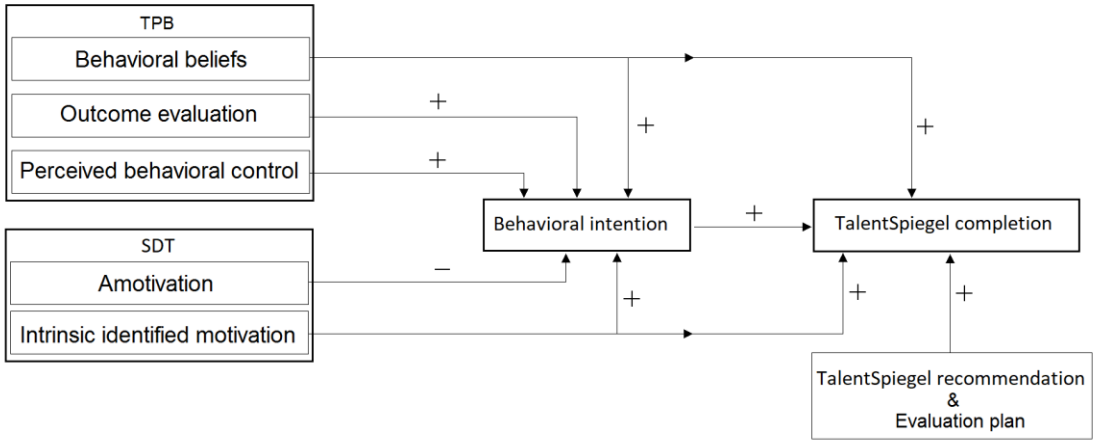

Figure 4. Final model of predictors for intention to complete the TalentSpiegel and actual TalentSpiegel completion.

Behavioral beliefs, outcome evaluation, and perceived behavioral control were identified as positive predictors for intention to complete the TalentSpiegel, as was expected in hypothesis 1. Behavioral beliefs and outcome evaluation together form an attitude toward completion of the TalentSpiegel. Participants who perceived the TalentSpiegel as useful, enjoyable, and beneficial for their career development were more likely to have the intention to complete it. In addition, participants who perceived themselves as more capable to complete the TalentSpiegel were more likely to have the intention to complete it. This conclusion is in line with the theory of planned behavior (Dawson, et al., 2015) and leads to several practical implications. The A+O fonds Gemeenten could inform civil workers more about the usefulness and benefits of the TalentSpiegel. Giving more information before users start the TalentSpiegel questionnaire could change their attitude towards it and in turn increase the chance of completion. MOOCs in general should also seek for ways to improve the perceived behavioral control of the users. For example, by coaching and supporting them during the course of a MOOC. A complete overview of practical implications will be given at the end of the discussion.

Taking a step back, subjective norm did not significantly predict an intention to complete the TalentSpiegel, which is not in line with the TPB. This could indicate that in the case of TalentSpiegel completion, participants did not take the opinion of others into account, or the opinion of others on the TalentSpiegel was not as important as their own evaluation. This is, of course, pure speculation since we cannot unveil the exact reason why subjective norm was not identified as a predictor for intention to complete the TalentSpiegel. Interestingly enough, hypothesis 4_A did suggest that being recommended to do the TalentSpiegel was actually beneficial for completion. These results seem to be conflicting. A possible explanation is that the questions regarding subjective norm were more focused on what others think about the TalentSpiegel, and not whether others would recommend it. We have seen that only a small amount of people actually discuss the tool itself or their results with others, and therefore might not know what the norm on TalentSpiegel completion is.

Furthermore, intrinsic identified motivation was found to be a positive predictor of intention to complete the TalentSpiegel. More importantly, intrinsic identified motivation was even identified as a direct predictor of TalentSpiegel completion. Implicating that users who personally value completing the TalentSpiegel, or other MOOCs, who acknowledge its usefulness, and can even enjoy engaging in it do not only have a stronger intention to complete the TalentSpiegel, but are actually more likely to complete it. Even though this result seems very positive, it might not lead to many practical implications because it is hard to stimulate people's intrinsic motivation, especially for MOOC creators who usually have very limited contact with the users of the MOOC. As the SDT suggests (Gagné & Deci, 2005), autonomy plays a big role in intrinsic motivation, but autonomy is already

very much present in MOOCs. Other possibilities could be to increase participation by stimulating user interaction with other users or a coach in order to improve intrinsic motivation (Deng & Tavares, 2013; Hrastinksi, 2009). Further research on this topic is needed to assess the actual effects of interaction in MOOCs on intrinsic motivation.

Participants that scored high on amotivation scored significantly lower on intention to complete the TalentSpiegel, thus amotivation is confirmed as a negative predictor. Participants who do not want to put effort into completion or do not perceive the TalentSpiegel to be useful are unlikely to have the intention to complete it. While this might seem straightforward, it does bring extra support to the previous practical implications, which address the necessity of providing new users with enough information on the usefulness and contents of the MOOC. Overall, these findings are partially in line with hypothesis 2 and with the self-determination theory (Gagné & Deci, 2005). External regulation and introjected regulation did not significantly influence intention to complete the TalentSpiegel. An explanation could be that extrinsic motivations such as monetary reward or job dependence does not influence motivation of civil workers to complete the TalentSpiegel.

Hypothesis 3 stated that intention to complete the TalentSpiegel is a positive predictor of TalentSpiegel completion (PBC influence). This step is crucial for the model because this implies that predictors of intention to complete the TalentSpiegel indirectly influence actual completion. This finding supports that practical implication that increased intention will also improve actual behavior. It has to be noted here that, even though the results are significant, the explained variance is very small in the current model. This decreases the value of the result and calls for more research to support this finding. This

small amount of explained variance could be caused by the uneven distribution of TalentSpiegel completion within our population. One might expect the results to be more powerful if the distribution of completers and non-completers was more evenly divided.

Further exploration of the data resulted in an answer to non-directional hypothesis 4_A, showing that it was more beneficial to be recommended to engage in the TalentSpiegel than to find it independently. Participants who were recommended to do the TalentSpiegel completed it more often. Especially being recommended by a career advisor, or a colleague from HR was linked to completion of the TalentSpiegel. Also, H_{4B} indicated that participants who responded that they had plans to discuss the TalentSpiegel before doing it were more likely to complete the TalentSpiegel. Encouraging HR employees from municipalities to plan and schedule meetings with civil workers to discuss the TalentSpiegel report could be a great way of increasing completion rates in the future. It is important to realize that the high numbers of TalentSpiegel completion through recommendation of career advisors and planning to discuss the results could be related. It is plausible that civil workers who were recommended to do the TalentSpiegel most of the time also had planned to discuss it afterwards and felt obliged to complete it. When checking for overlap between these two groups this seems to be the case. We cannot say for sure whether the positive completion rates are due to the fact that participants were recommended to do the TalentSpiegel or because they felt obliged because they had planned to discuss the result, or possibly a combination of both. Therefore, the best conclusion is to assume the combination of both predictors is effective and should both be applied by municipalities. The final conclusion regarding this hypothesis is that the A+O fonds Gemeenten should motivate career/HR advisors from municipalities to recommend

the TalentSpiegel to the employees they are working with, and to schedule an appointment to discuss the TalentSpiegel results in order to boost completion rates.

Banerjee & Duflo (2014) have suggested that 'shopping around for classes' is a possible explanation for high drop-out rates in MOOCs. The results of this study do indicate that people who claim to know more about the TalentSpiegel before starting it are more likely to complete it. This could indicate that 'shopping around for classes' is also an existing phenomenon amongst TalentSpiegel users. Thus this could be a possible explanation for people to drop out. However, very few people indicated to know nothing about the TalentSpiegel, therefore it can also be stated that participants in general knew quite well what the TalentSpiegel was about. In addition, the effect sizes were very small so no hard conclusions can be drawn regarding this topic. It can be concluded that participants might be shopping around for classes and this seems to influence completion rates. This effect could possibly be negated by informing new users better about the contents of the TalentSpiegel.

Comparing TalentSpiegel completers to non-completers on demographic variables (age, gender, and education) does not result in significant differences on any of the variables. This implies that the age, gender, or educational background are not relevant for completion of the TalentSpiegel. This is quite interesting since one might speculate younger participants of the TalentSpiegel to complete it more often, as is sometimes seen in MOOCs, because they are more experienced in working with computers, but this is not the case. Also, educational background is similar in both groups and therefore does not seem to influence completion. With care, we could conclude that this means that the

TalentSpiegel is well applicable to civil workers from any age or educational background, which certainly adds to its value.

Demographical differences between participants who did or did not complete the survey for this study have also been inspected. Again, there was no difference in age, gender, or educational difference between the groups. This is a positive sign, implying that the results are not influenced by demographics and therefore are less biased.

Besides providing information about MOOC completion, this study is also relevant for gaining knowledge on constructs and utility of the TPB and SDT. The factor analysis on the TPB indicated that attitude toward behavior could best be split up in two separate predictors. This is no surprise since the three main predictors of the TPB are in some models already split up in different beliefs (Dawson et al., 2015). Although it has to be mentioned that the separation of behavioral belief and outcome evaluation could also be influenced by the slightly different answering mechanic. Overall, it seems that the TPB is applicable for MOOC related research. Regarding the SDT, identified regulation and intrinsic motivation were closely related and therefore combined in this study. Interestingly enough, Gagné et al. (2015) had already adapted their MWMS in comparison to the original SDT model by removing integrated regulation, because it was too similar to intrinsic motivation. This made the scale smaller and more distinctive. In this study, identified regulation and intrinsic motivation were combined, compressing the scale even more. This will not be the case in every study. However, it could arguably be favorable to reduce the SDT scale to four components (amotivation, external regulation, identified regulation, intrinsic motivation) in order to make these components more distinctive. In addition, we could add to the research of the SDT that again it seems amotivation is the most negative

form of motivation and a negative predictor of behavior. (Identified) Intrinsic motivation is once again a positive and strong predictor of behavior, which is in line with previous research regarding the SDT.

Strengths and limitations

As mentioned earlier, the main limitation of this study is that the research population is not evenly divided when considering TalentSpiegel completion. A much larger amount of participants has completed the TalentSpiegel which makes it harder to reach significant and powerful results. This uneven distribution has a few causes. First of all, about 70% of the people who sign up for the TalentSpiegel complete it, which makes this group bigger in the first place. Secondly, participants who have the necessary skills to complete and engage in the TalentSpiegel, an online questionnaire, will also be more likely to complete the survey that was distributed for this study. And thirdly, it is expected that people who completed the TalentSpiegel and had a positive experience are more likely to be willing to engage in a survey. Those who did not complete the TalentSpiegel will more likely skip an e-mail regarding evaluation of the TalentSpiegel. In order to tackle this problem, it was stressed in the first e-mail that participants who had not completed the TalentSpiegel were also very much needed for the success of the survey. Still, only a few non-completers engaged with the questionnaire, which is why a reminder was send out only to civil worker who had registered for the TalentSpiegel but who had not completed it, again highlighting the importance of their participation. A possible solution could be to send more reminders and leave the survey open for a longer period of time. However, it is not expedient or even ethical to spam people with this question, and possibly harmful for the A+O fonds Gemeenten and LTP. In general, this is a very common problem for research

on MOOCs. It is challenging to find participants because they can usually only be reached online and people who are more engaged with the MOOC are also more likely to be more engaged with a study regarding the MOOC.

Another limitation of this study is that, due to the format, almost the whole study relies on self-reported information which is threatened by a social desirability bias. Even though the BIDR indicated that there is no reason to expect the outcome to be influenced by a social desirability bias it can still be considered a limitation of the study. Because we cannot know where, how, and in what setting the participants completed the survey, it is hard to say whether they were influenced by situational factors. Fortunately, completion of the TalentSpiegel, arguably the most important variable of all, was not self-reported but was provided by LTP data. Therefore, we do know for sure which participants did or did not complete the TalentSpiegel. Participants were asked in the survey whether they had completed the TalentSpiegel, as a control question. Fortunately, most participants remembered correctly, although a fairly large 9.6% did not remember whether they had completed it.

Notably, participants that had not completed the TalentSpiegel recorded high standardized residuals in the LRA. A total of eight participants were identified as outliers over multiple tests, but were intentionally not excluded from the dataset because they were considered uninfluential. No explanation was found for these high standardized residuals, which does call for future research to back up the findings of this study.

One of the strengths of this study is its large and unique population. First of all, the large age range and the amount of participants above the age of 46 is interesting because a lot of MOOC research is done amongst students. Also, the educational background is quite

diverse which again is unique since most studies focus on participants who participate in university MOOCs which require a high educational background. Finally, this research was done amongst civil workers which is quite rare for research on MOOCs. This will make the study more practical in use for MOOC like learning programs within (governmental-) organizations.

The format and intention of the study allow for direct practical implications by the A+O fonds Gemeenten. With direct questions, for example about plans to discuss the results, very concrete suggestions can be given for practical changes. The ultimate goal is to use the findings of this study to improve completion rates. After implication of the suggested changes only future statistics will be able to tell if completion rates actually improve. Findings that are strongly focused on TalentSpiegel characteristics may be less useful for general MOOC implications, but will hopefully be beneficial for the A+O fonds Gemeenten.

Recommendations for future research

Future research could focus on ways to improve intrinsic motivation of MOOC users. This is without a doubt the most challenging aspect of behavioral and motivational research but might yield very positive results for future forms of education. Finding ways to intrinsically motivate users of MOOCs or other forms of online tools can change the way we educate not only ‘normal’ students but also people who are interested in studying while working a full time job or by educating or helping employees of companies or the government.

Recruiting participants for research on such online topics is challenging. Especially now that new European laws are being enforced that make it harder for companies and

researchers to randomly approach people. Research on motivation and participation in online education and training will very much have to rely on help of universities and big companies that will offer their users as participants for research.

Regarding the TalentSpiegel, the most interesting scientific avenue would be to investigate effectiveness of the tool. Future research could, for example, focus on how many people actually found a new job or function after using the TalentSpiegel and measure how much of an effect the TalentSpiegel actually had in this change. HR employees that use the TalentSpiegel could also be approached to assess what they think about the usefulness of the tool and its strengths and weaknesses. This information would be valuable for improving the help that the A+O fonds Gemeenten can offer municipalities in the future.

Conclusion

This study has identified a number of predictors of MOOC completion. In general, we can conclude that intrinsic motivation, behavioral beliefs, outcome evaluation, and perceived behavioral control are essential for the completion of the TalentSpiegel and MOOCs in general. A practical advice on TalentSpiegel improvement is given out to the A+O fonds Gemeenten and can be found below. This practical advice is not only directed at the TalentSpiegel but also at improvement of MOOC completion in general. Hopefully, the results of this thesis will contribute to the improvement of the TalentSpiegel and its completion, ultimately leading to better support for civil workers who are working on the future of their career.

Practical advice

A+O fonds Gemeenten:

- Inform civil workers and HR employees from municipalities about the benefits and usefulness of the TalentSpiegel. Specifically stress the positives effect that the TalentSpiegel can have on future job orientation. On the website where civil workers can sign up, there should be more information about the positive consequences of using the TalentSpiegel.
- Stimulate municipalities to provide their employees with the time and tools that they need to complete the TalentSpiegel, for example by having civil workers engage with the TalentSpiegel during working hours.
- Stimulate career advisor/HR representatives from municipalities to promote and recommend the TalentSpiegel and have them set a date to discuss the report with their co-workers. The key to increased completion is to involve HR employees of municipalities. They are close to the civil workers and can give them a positive view about the TalentSpiegel.

MOOCs in general:

- Inform your users thoroughly about the progress of the course and what they can accomplish by completing it. Make sure that they have positive attitude toward your MOOC and know the possible benefits of the outcome if they complete the course.
- Increase perceived behavioral control by providing as much support as possible throughout the MOOC, for example by providing coaches.
- Stimulate intrinsic motivation, possibly by stimulating user interaction with other users and coaches.

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Appendix I: E-mail to registered TalentSpiegel users

Beste mevrouw of meneer,

U ontvangt deze mail omdat u in het afgelopen jaar een inlogcode heeft aangevraagd voor de TalentSpiegel van het A+O fonds Gemeenten op meesterinjewerk.nl.

Het A+O fonds Gemeenten en LTP onderzoeken het gebruik van de TalentSpiegel met als doel om in de toekomst nog betere ondersteuning te bieden aan gemeenteambtenaren.

Wilt u ons helpen door de vragenlijst in te vullen? Dit duurt ongeveer 15 minuten. Uiteraard gaan wij vertrouwelijk om met uw gegevens, deze worden anoniem verwerkt. Onderzoeksgegevens zijn niet herleidbaar tot individuen.

Heeft u de TalentSpiegel niet afgemaakt? Ook dan zijn wij benieuwd naar uw reactie.

Als dank voor uw deelname verloten wij onder elke 25 deelnemers een cadeaubon t.w.v. 25,00 euro, tot een maximum van 10 cadeaubonnen.

De vragenlijst en meer informatie vindt u hier: LINK
Als u niet op de link kan klikken kunt u de URL in uw browser kopiëren.

Bent u geïnteresseerd in de uitkomst van het onderzoek dan sturen wij u graag het eindverslag toe.

Bij voorbaat dank voor uw deelname!

Vriendelijke groet,

ook namens Marieke de Feyter, A+O fonds Gemeenten, en LTP,

Dr. Herman Steensma
Departement van Sociale & Organisatie Psychologie
Universiteit Leiden

- Heeft u vragen over de TalentSpiegel of andere activiteiten van het A+O fonds Gemeenten? Neemt u dan contact op met Marieke de Feyter, programmamanager, via Marieke.deFeyter@aeno.nl of 070 7630030.
- Heeft u aanvullende vragen over dit afstudeeronderzoek, neem dan contact op met Abel Koppert via abel.koppert@aeno.nl. In geval van klachten of vragen over het onderzoek kunt u ook contact opnemen met de hoofdonderzoeker, dr. Herman Steensma via Steensma@fsw.leidenuniv.nl.

Appendix II: Questionnaire

Welkom bij de vragenlijst over de TalentSpiegel. Wij stellen het erg op prijs dat u mee doet.

Deelname is geheel vrijwillig en u kan uw deelname op elk moment beëindigen. Er zijn geen goede of foute antwoorden, wij zijn benieuwd naar uw ervaring met de TalentSpiegel. Aan het einde van de vragenlijst kunt u uw emailadres achter laten zodat u mee doet in de loting voor een cadeaubon. Uw emailadres wordt niet gekoppeld aan uw antwoorden. De vragenlijst neemt ongeveer 15 minuten in beslag.

Uw gegevens worden uitsluitend gebruikt voor onderzoeksdoeleinden. Uw persoonlijke antwoorden worden niet verbonden aan uw naam of gedeeld met derden.

Voor vragen over het onderzoek kan u contact opnemen met Abel Koppert via abel.koppert@aeno.nl. In geval van klachten of vragen kan u ook terecht bij de hoofdonderzoeker, dr. Herman Steensma via Steensma@fsw.leidenuniv.nl.

Door hier onder uw voor- en achternaam in te vullen verklaart u de bovenstaande informatie te hebben gelezen en geeft u toestemming aan de onderzoeker om uw gegevens te gebruiken voor het onderzoek naar de TalentSpiegel. U begrijpt dat deelname geheel vrijwillig is en dat u op elk moment mag stoppen met het onderzoek.

Voornaam + achternaam: _____

	Demografische informatie	
Instructies	*Beantwoord de volgende vragen. U kunt pas doorgaan naar de volgende pagina als u alle vragen op deze pagina heeft beantwoord.*	
Demo.1	Wat is uw leeftijd?	○ Jonger dan 26 jaar ○ 26 – 35 jaar ○ 36 – 45 jaar ○ 46 – 55 jaar ○ 56 – 65 jaar ○ Ouder dan 65 jaar
Demo.2	Wat is uw geslacht?	○ Man ○ Vrouw
Demo.3	Wat is uw hoogst afgeronde opleiding?	○ Basisschool ○ Middelbare school ○ MBO ○ HBO ○ WO ○ Anders, namelijk…
Demo.4	In welke provincie werkt u?	○ Groningen ○ Friesland ○ Drenthe ○ Overijssel

		○ Flevoland ○ Gelderland ○ Utrecht ○ Noord-Holland ○ Zuid-Holland ○ Zeeland ○ Noord-Brabant ○ Limburg
Demo.5	Voor welke gemeente werkt u?	(Open vraag)

	Gebruik TalentSpiegel	
Instructies	*De volgende vragen gaan over de TalentSpiegel.*	
TS1.	Heeft u de TalentSpiegel afgerond?	○ Ja ○ Nee ○ Weet ik niet
TS2.	Is de TalentSpiegel door iemand in uw omgeving aanbevolen? Zo ja, door wie? NB: Er zijn bij deze vraag meerdere antwoorden mogelijk.	Ja, door: ○ Leidinggevende ○ Loopbaanadviseur/HR/ - P&O ○ Collega ○ Vriend(in) ○ Familielid ○ Anders, namelijk… ○ Nee, ik ben zelfstandig bij de TalentSpiegel beland.
TS3.	Had u voor het invullen van de TalentSpiegel al het plan om de resultaten met iemand te bespreken?	○ Ja ○ Nee ○ Weet ik niet
TS4.	Had u voor het invullen van de TalentSpiegel al daadwerkelijk een afspraak gemaakt om de resultaten te bespreken?	○ Ja ○ Nee ○ Weet ik niet
TS5.	Heeft u na het invullen van de TalentSpiegel de resultaten met iemand besproken? NB: Er zijn bij deze vraag meerdere antwoorden mogelijk.	Ja, met: ○ Leidinggevende ○ Loopbaanadviseur/HR/ P&O ○ Collega ○ Vriend(in) ○ Familielid ○ Anders, namelijk… ○ Nee

TS6.	In hoeverre bent u het eens met de volgende stelling: Ik wist waar de TalentSpiegel over ging, voordat ik eraan begon.	○ Helemaal niet mee eens ○ Niet echt ○ Een beetje ○ Matig ○ Sterk ○ Heel sterk ○ Volledig mee eens

TPB	**Theory of planned behavior**
Instructies:	*De volgende vragen gaan over uw ervaring van de TalentSpiegel.*
	Attitude *(7-point semantic differential response scale)*
Att.1 – Att.4	Het afmaken van de TalentSpiegel ervaar ik als: ▪ Slecht - goed ▪ Prettig - Onprettig (r) ▪ Nutteloos - nuttig ▪ Leuk - Vervelend (r)
Instructies	*In welke mate bent u het **eens** met de volgende stellingen over de TalentSpiegel?*
	Antwoorden op een 7-punts Likert scale: *1 = helemaal niet mee eens 2 = niet echt 3 = een beetje 4 = matig 5 = sterk 6 = heel sterk 7 = volledig mee eens*
Att.5	Het invullen van de TalentSpiegel heeft positieve gevolgen voor mijn carrière.
Att.6	Het invullen van de TalentSpiegel verbetert mijn zelfkennis.
Att.7	Het invullen van de TalentSpiegel kan mij ondersteunen in het zoeken naar een nieuwe functie.
	Subjective norm
Subj.1	De meeste mensen die belangrijk zijn voor me (bv. Leidinggevende, collega's, familie,…) hebben er waardering voor dat ik de TalentSpiegel afmaak.
Subj.2	Het is gebruikelijk voor de meeste mensen zoals ik om de TalentSpiegel af te maken.
Subj.3	De meeste mensen die belangrijk voor mij zijn (bv. Leidinggevende, collega's, familie,…) willen dat ik de TalentSpiegel afmaak.
Subj.4	Als het aankomt op loopbaanontwikkeling is het goed om te doen wat verwacht wordt door anderen die belangrijk voor mij zijn.
	Perceived behavioral control
Pbc.1	Ik ben er van overtuigd dat ik in staat ben om de TalentSpiegel af te maken.
Pbc.2	Het afmaken van de TalentSpiegel heb ik volledig zelf in de hand.
Pbc.3	Ik bezit de tijd en middelen die nodig zijn om de TalentSpiegel af te maken.
Pbc.4	Of ik de TalentSpiegel afmaak kan ik **niet** zelf beïnvloeden. (r)

	Intention
Int.1	Het is mijn intentie om de TalentSpiegel af te maken als ik er aan begin.
Int.2	Als ik mij aanmeld voor de TalentSpiegel dan wil ik deze ook afmaken.
Int.3	Als ik start aan de TalentSpiegel dan hoef ik die **niet** af te maken. (r)

SDT	**Self-determination theory**
Instructies	*In welke mate komen de onderstaande stellingen overeen met de redenen waarom u zich inspant of zou inspannen voor de TalentSpiegel?*
	Antwoorden op een 7-punts Likert scale: *1 = helemaal niet 2 = niet echt 3 = een beetje 4 = matig 5 = sterk 6 = heel sterk 7 = volledig*
	External regulation
Exter.1	Om goedkeuring van anderen (bv. Leidinggevende, collega's, familie,…) te krijgen.
Exter.2	Omdat anderen (bv. Leidinggevende, collega's, familie,…) me meer zullen waarderen enkel en alleen als ik de TalentSpiegel afmaak.
Exter.3	Om kritiek van anderen (bv. Leidinggevende, collega's, familie,…) te vermijden.
Exter.4	Omdat anderen (bv. Leidinggevende) me enkel financieel zullen belonen als ik de TalentSpiegel afmaak.
Exter.5	Omdat anderen (bv. Leidinggevende, collega's,...) me werkzekerheid bieden enkel als ik de TalentSpiegel afmaak.
Exter.6	Omdat anderen me dreigen te ontslaan als ik de TalentSpiegel niet afmaak.
	Introjected regulation
Intro.1	Omdat ik mezelf wil bewijzen dat ik het kan.
Intro.2	Omdat ik dan pas trots kan zijn op mezelf.
Intro.3	Omdat ik me anders beschaamd zou voelen.
Intro.4	Omdat ik me anders slecht zou voelen over mezelf.
	Identified regulation
Iden.1	Omdat ik het persoonlijk belangrijk vind om de TalentSpiegel in te vullen.
Iden.2	Omdat het invullen van de TalentSpiegel in lijn ligt met mijn andere waarden.
Iden.3	Omdat ik het zinvol vind om de Talentspiegel in te vullen.
	Intrinsic motivation
Intrin.1	Omdat ik me amuseer als ik de TalentSpiegel invul.
Intrin.2	Omdat ik het invullen van de TalentSpiegel boeiend vind.
Intrin.3	Omdat ik het invullen van testen zoals de TalentSpiegel heel interessant vind.
	Amotivation
Am.1	Ik doe geen moeite voor het afmaken van de TalentSpiegel, ik heb het gevoel dat ik mijn tijd daarmee verdoe.
Am.2	Om eerlijk te zijn, ben ik niet zeker of de TalentSpiegel het waard is om af te maken.
Am.3	Ik weet niet waarom ik de TalentSpiegel invul, het is zinloos.

BIDR-15	**Balanced Inventory of Desirable Responding**
Instructies	*In hoeverre zijn de volgende stellingen waar?*
	Antwoorden op een 7-punts Likert scale: *1 = helemaal niet waar 2 = niet echt 3 = een beetje 4 = matig 5 = sterk 6 = heel sterk 7 = volledig waar*
Sde.1	Ik ben niet altijd eerlijk geweest tegenover mezelf. (r)
Sde.2	Ik weet altijd waarom ik dingen leuk vind.
Sde.3	Ik vind het moeilijk om me af te sluiten voor verontrustende gedachten. (r)
Sde.4	Ik heb nooit spijt van mijn beslissingen.
Sde.5	Soms loop ik iets mis omdat ik niet snel genoeg een keuze kan maken. (r)
Sde.6	Ik ben een volledig rationeel persoon.
Sde.7	Ik heb veel vertrouwen in mijn eigen oordeel.
Im.1	Ik vertel soms een leugen als het nodig is. (r)
Im.2	Ik verdoezel nooit mijn fouten.
Im.3	Er zijn situaties geweest waar ik geprofiteerd heb van anderen. (r)
Im.4	Soms probeer ik iemand terug te pakken in plaats van iemand te vergeven. (r)
Im.5	Ik heb wel eens iets slechts gezegd over een vriend achter zijn/haar rug om. (r)
Im.6	Als ik een privégesprek hoor, dan luister ik niet mee.
Im.7	Ik pak nooit iets dat niet van mij is.
Im.8	Ik roddel niet over andermans zaken.

Afsluiting + dankwoord

Mail.1	Wilt u kans maken op een digitale cadeaubon ter waarde van 25 euro? Vul dan hier uw emailadres in:
Mail.2	Wilt u op de hoogte worden gehouden van de onderzoeksresultaten? Vul dan hier uw emailadres in:

Dit is het einde van de vragenlijst over de TalentSpiegel.

Hartelijk dank voor uw deelname!

Het doel van het onderzoek is om te bepalen welke individuele factoren kunnen voorspellen of participanten de TalentSpiegel ook daadwerkelijk afmaken.

Mocht u na het invullen van deze vragenlijst nog vragen hebben, dan kan u contact opnemen met Abel Koppert door een mail te sturen naar: abel.koppert@aeno.nl, of door te bellen naar 070-7630030. In geval van klachten of vragen over het onderzoek kunt u ook contact opnemen met de hoofdonderzoeker, dr. Herman Steensma via Steensma@fsw.leidenuniv.nl.

Heeft u nog vragen over de TalentSpiegel of andere activiteiten van het A+O fonds Gemeenten? Dan kan u contact opnemen met Marieke de Feyter via Marieke.deFeyter@aeno.nl.

Klik op ‘Einde’ om de vragenlijst af te sluiten.

Appendix III: Rotated component matrices.

All component matrices are varimax rotated and include all confidents above .3.

Theory of planned behavior	Component			
	1	2	3	4
Att.1	**.720**			
Att.2	**.833**			
Att.3	**.738**			
Att.4	**.789**			
Att.5			**.805**	.333
Att.6			**.868**	
Att.7			**.840**	
Subj.1				**.767**
Subj.2	.398			**.497**
Subj.3				**.853**
Subj.4				**.697**
Pbc.1		**.820**		
Pbc.2		**.818**		
Pbc.3		**.785**		
Pbc.4		**.508**		

Self-determination	Component			
theory	1	2	3	4
Exter.1		**.667**	.398	
Exter.2		**.663**	.391	
Exter.3		**.823**		
Exter.4		**.813**		
Exter.5		**.792**		
Exter.6		**.742**		.349
Intro.1			**.704**	
Intro.2			**.844**	
Intro.3			**.815**	
Intro.4			**.820**	
Iden.1	**.654**			-.387
Iden.2	**.703**			
Iden.3	**.678**			-.365
Intrin.1	**.791**			
Intrin.2	**.875**			
Intrin.3	**.846**			
Am.1	-.366			**.725**
Am.2	-.359			**.796**
Am.3				**.846**

BIDR-15	Component	
	1	2
Sde.1		**.502**
Sde.2		**.549**
Sde.3		**.615**
Sde.4		**.388**
Sde.5		**.565**
Sde.6		**.504**
Sde.7		**.735**
Im.1	**.617**	
Im.2		
Im.3	**.633**	
Im.4	**.611**	
Im.5	**.659**	
Im.6	**.335**	
Im.7	**.535**	
Im.8	**.521**	