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Does Television Affect Our Job Satisfaction? A Moderated Mediation Model Investigating the Effects of TV Time on Next-Day Job Satisfaction

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Preface

Throughout our years at university, we have both developed a special interest in psychology within healthy populations, also referred to as "normality psychology". Therefore, we wanted to write our master thesis on a topic that is related to the population rather than focusing on one specific group. In this regard, we contacted associate professor, Dr. Dana Unger, because her project about TV´s influence on job satisfaction looked especially interesting to us. We had a meeting where we decided to be part of this project with Dr. Unger as our supervisor. We then started developing the variables specific to our study. It has been intensive months where we have learned a lot about the topic and the daily diary design, not to mention the development of new statistical skills.

Both authors contributed equally to the entirety of the project, including the recruitment of participants, developing the questionnaires, conducting statistical analysis, and writing the thesis with all its parts. We are thankful to each other for the support and uplifting spirit throughout the semester. We also want to direct a special thank you to our supervisor, Dana Unger, who has given us feedback along the way and a crash course in multilevel analysis and daily diary design. We appreciate the help she has provided throughout the process of writing this dissertation.

Abstract

People tend to spend much of their leisure time watching TV or videos on their smartphones. We were interested in looking at how this affects job satisfaction the next day. Using Affective Events Theory and sleep research as our theoretical background we hypothesized that TV time would have an indirect effect on job satisfaction. We argued that this effect would be mediated by sleep quality and positive affect and moderated by TV enjoyment. Data was collected using a daily diary design with two daily questionnaires over 10 workdays. A total of 53 participants ($n =$ 303 observations) filled out daily questionnaires on an average of 7.98 days. Results of a multilevel analysis showed that there was no significant spillover effect of TV time in the evening and afternoon on job satisfaction the next day on the within-level. We did not see an effect of TV time on positive affect or of positive affect on job satisfaction on the within-level. These findings contribute to a wider understanding of how TV time has an impact on our daily lives. We discuss our findings, as well as practical implications and limitations in our discussion part.

Does Television Affect Our Job Satisfaction? A Moderated Mediation Model Investigating the Effects of TV Time on Next-Day Job Satisfaction

Watching television is a sedentary behavior that consumes a large portion of people´s time. In 2019, the average citizen in Europe and the US spent between 3- and 4 hours watching TV every day (Stoll, 2022a; Stoll, 2022b). These numbers do not include media content watched on smartphones, computers, or tablets, which has increased substantially over the past years (BusinessofApps, 2022; Dixon, 2022). TV and video consumption thereby seem to take up a lot of our leisure time, even though it is associated with poorer health both physically and mentally (Cassidy et al., 2017; Domingues-Montanari, 2017; Jahangir et al., 2014). In contrast, recreational and physical activities make us healthier and increase our well-being (Aksoy et al., 2017; An et al., 2020; Pengpid & Peltzer, 2019). Taking this into consideration; why do we let the TV take up so much of our time? Other than the obvious entertainment value of watching something you enjoy, there is some research on the antecedents of TV consumption. Escapism may be one of these antecedents and refers in this context to choosing passive activities to escape from stress and problems in everyday life, rather than choosing meaningful activities for self-development (Zijlstra & Sonnentag, 2006). For example, watching television may help us escape from negative emotions (Kubey & Csikszentmihalyi, 1990). Often, we also use the television to recover from work or school (Halfmann & Reinecke, 2021) and recharge our batteries.

In other words, factors in life and at work influence our TV consumption behavior. Less research has been done on the consequences of TV consumption on factors related to work. As watching TV seems to have both positive and negative effects on different aspects of life, we are interested in understanding this apparent contradiction, focusing on the possible consequences of TV time for employees.

Being employed has many benefits for us as individuals, concerning both health and well-being (Cole et al., 2009; Gedikli et al., 2022). Whether we get the full potential of these benefits

may also depend on our satisfaction at work. Job satisfaction is one of the most researched topics within industrial and organizational psychology and refers to how people feel about, and to what extent they like or dislike, their jobs (Spector, 1997, p. 2). The positive association between life satisfaction and job satisfaction is also well-established after decades of research (Unanue et al., 2017), which is no surprise considering the amount of time we spend at work. Job satisfaction can be stable over time but may also vary within individuals (Hulin & Judge, 2003, as cited in Scott & Judge, 2006). In our study, we will focus on the latter. Factors outside the workplace may also influence how we feel at work (Song et al., 2008). With this in mind, we want to focus on one of our most time-consuming leisure activities, watching TV and videos, and examine whether this affects our satisfaction at work. Further, we will look at what may mediate and moderate this effect.

To deepen our understanding of the proposed relationship between TV time and job satisfaction, we also want to look at the role of positive affect, using Affective Events Theory (AET) (Weiss & Cropanzano, 1996) as a theoretical foundation. Previous studies have found associations between positive affect and watching TV (Goodwin et al., 2005; Hassenzahl et al., 2015), as well as positive affect and job satisfaction (Connolly & Viswesvaran, 2000). With this in mind, we believe positive affect will mediate the relationship between TV time and job satisfaction, and, therefore, will be an important consideration. In addition, we believe that experiencing enjoyment while watching TV may have an impact on how it affects us. We propose that the level of TV enjoyment may influence the effect TV time has on us, and therefore moderate the relationship between TV time and positive affect. Further, we want to extend our theorizing by combining AET with sleep research. Television viewing and watching videos on smartphones has previously been found to affect both sleep duration and sleep quality (Christensen et al., 2016; Demirci et al., 2015; Johnson et al., 2004), and sleep deprivation has been found to negatively influence positive affect (Babson & Feldner, 2015, p. 47-50). Thus, we believe that sleep could mediate the relationship between television viewing and positive affect. Summarized, the purpose

of this study is to examine the relationship between TV time and job satisfaction, and examine how

positive affect (mediator), TV enjoyment (moderator), and sleep (mediator), affect this relationship

(Figure 1 shows our research model). Examining these relationships on a day-to-day level allows us

to measure indirect effects between the variables.

Figure 1

Theoretical model
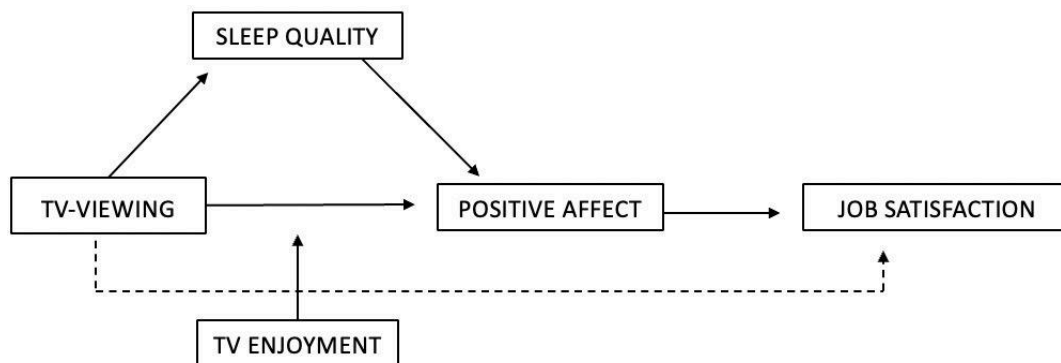
A lot of the research done on the consequences of television viewing has focused on

children and youngsters. Thus, our research on adults contribute to an area that, for the most part,

stands unexplored. We believe this research provide a broader understanding of how factors outside

the work environment affect job satisfaction and give new insight into the possible consequences of

how we spend our leisure time. The fact that people are in control of their TV consumption makes

an intervention possible, and in that regard, increased knowledge about the consequences will help

the public make good choices for themselves. In addition to this, our study will provide extended

knowledge to the field of media psychology. Not only looking at television, but also including apps

like TikTok and YouTube makes our study up to date compared to research conducted before these

apps were available. Using a daily diary design to look at these relationships should provide us with

more accurate information because the measurements gives insight into the day-to-day fluctuations

and allows us to do repeated measures.

Theoretical Background

In our study, we will investigate the indirect effect of TV time on job satisfaction, and how this effect is mediated by sleep quality and positive affect and moderated by TV enjoyment. Our model is developed by drawing two lines of research together. We will use AET, as well as sleep research, to explain the theoretical foundation of our research model.

Affective Events Theory

AET focus on the role of affect on several aspects of job attitudes, including job satisfaction (Weiss & Cropanzano, 1996). The theory discusses how events lead to change in affect, which then influences one's cognitive evaluative judgment of job satisfaction. Job satisfaction is in AET described as an attitude that results from our affects, and that those affects, and therefore evaluation, fluctuate over time. In the theory, events are described as a change in circumstances that elicits an emotional reaction or a change in mood, and therefore can be seen as significant. Weiss and Cropanzano (1996) focus on work events in their model, whereas we want to look at how non-work-related events affect job satisfaction. Carlson et al. (2011) have previously used a similar application of AET. They investigated work-family enrichment as an event and hypothesized that the event would generate positive affect, which acts as an antecedent for job attitudes. Studies have also shown a significant spillover effect of mood from home to work and vice versa (Eby et al., 2009; Song et al., 2008), which supports our notion that non-work-related events affect how we feel at work.

TV and Affect

Most studies done after the introduction of commercial TV focus on the negative relationship between happiness and watching TV (Gui & Stanca, 2009). A study done by Frey et al. (2007) found that watching more than 2.5 hours of TV per day had a more significant negative effect on life satisfaction, compared to watching less than 0.5 hours and between 0.5-1.5 hours. Reinecke et al. (2014) suggest that this negative effect may derive from ego depletion, which refers to a lack of self-control and willpower because of cognitive exhaustion. They propose that this

depletion may increase negative evaluations of media use, which increases the feelings of guilt, and therefore negatively affects the recovery process. In another study, Kataria and Regner (2011) note that even though one can see a negative influence of TV time on individual happiness in some populations, this cannot be generalized because of the substantial heterogeneity one finds when looking at the effect in different countries.

Recently, research has also been done on the positive effects of TV on well-being and positive affect. Hassenzahl et al. (2015) found that watching TV or using other media can increase feelings of relatedness and positive affect through need fulfillment. If the content you watch is somehow meaningful, it can also elevate positive aspects of emotions such as feeling inspired, morally uplifted, and warm (Erickson et al., 2018). Reinecke et al. (2011) conducted a study looking at the relationship between entertainment media use and satisfaction with one's recovery needs. They found a positive association between recovery satisfaction and media enjoyment and concluded that enjoyment can increase the positive effects of media on recovery. This implies that watching television can have a positive impact on our affective states depending on the content of what we watch and whether it fulfills needs (e.g., recovery, relatedness, stimulation). Oliver and Hartmann (2010) found that media also elicits positive and negative affect simultaneously. In their study, they divided movies into two categories: pleasurable and meaningful. The pleasurable movies mainly elicited positive affect, whereas meaningful movies elicited the most mixed affect, indicating that we can enjoy entertainment even though it makes us sad. This shows us that the affect a TV series or video elicits does not necessarily portray the level of enjoyment the viewer experiences.

Based on the summarized research, we see strong indications that TV elicits positive, negative, and mixed affect, making it an affective event. We believe that whether the event is positive or not, does not only depend on the affect it elicits but also on the enjoyment the viewer experiences. Thereby, we propose that the effect of TV time on positive affect will be modulated by

the level of enjoyment the individual experience. The longer one watches something enjoyable, the higher levels of positive affect. We also expect the interaction between the amount of time one spends watching TV and how much one enjoys it to have a negative effect on positive affect when the level of enjoyment is low. Hence, we want to look at how the interaction influences the level of positive affect one experiences. Following AET, we argue that the event (TV time), moderated by the level of TV enjoyment, indicates whether a positive affective reaction is induced. Thus, our first hypothesis reads as follows:

H_1: On the day-level, TV enjoyment moderates the effect of the relationship between TV time and positive affect; the effect will be positive (vs. negative) for higher (vs. lower) levels of TV enjoyment.

Positive Affect and Job Satisfaction

Previously, many of the studies done on job satisfaction focused on the influence of cognitive and dispositional factors (Judge & Ilies, 2004). This accounts for some, but not all, of the between-individual variations, and does not account for the within-individual variations. Ilies and Judge (2002) found that within-individual variation accounted for 36% of the differences in job satisfaction values, meaning that more than a third of the variance comes from the within-individual level. Affect is, as argued by Weiss and Cropanzano (1996), an important part of the formation of- and change in attitude, and therefore an essential component in the understanding of job satisfaction (Judge & Ilies, 2004).

The role of affect on attitudes and judgments has been explained using the mood congruence theory (Ilies & Judge, 2002). The theory states that our mood affects both how information is processed and how information is retrieved (Forgas & Eich, 2013, p. 61). If we are in a positive mood, the information we process will often have a positive tone, and we also have easier access to other positive memories. Ilies and Judge (2002) argue that this can be used to understand how affect influence job satisfaction, since one is more likely to positively assess one's momentary job satisfaction when in a positive affective state. They tested this, among other interactions, in a study

with 27 participants using experience sampling method over 19 workdays. Results showed that mood affected both the level of job satisfaction and the variability seen in job satisfaction. In their sample, positive- and negative affect accounted for 29% of the observed within-individual variance.

Weiss et al. (1999) found that the perception of one's job satisfaction is influenced by both episodic affective events and beliefs about the job. They found that a pleasant mood had a significant positive effect on job satisfaction. Similar findings were done by Thoresen et al. (2003), where they found a positive relationship between positive affect and job satisfaction, as well as other aspects affecting overall job attitudes, like personal accomplishment and organizational commitment. These findings support our theoretical foundation with AET where Weiss and Cropanzano (1996) argue that affective events directly influence one's job satisfaction, and that, compared to trait ratings and belief influences, it more accurately predicts one's satisfaction. Therefore, we expect participants' levels of positive affect to influence their evaluation of daily job satisfaction.

H2: On the day-level, there is a positive relationship between positive affect and job satisfaction.

In line with AET, we argue that an event elicits an affective reaction, which then elicits a cognitive evaluation, creating a moderated mediation hypothesizing:

H3: On the day-level, the positive indirect effect of TV time on job satisfaction via positive affect is moderated by TV enjoyment; the effect will be positive (vs. negative) for high (vs. low) levels of TV enjoyment.

Sleep Research

We are also interested in looking at the role of sleep quality in this context. Quality is a common measurement of sleep, and there is a consensus among researchers that high sleep efficiency, falling asleep fast, not waking up a lot, and less time spent awake after sleep onset are indicators of good sleep quality for all ages (Ohayon et al., 2016).

Watching television and using smartphones in the evening has been seen to negatively affect sleep quality. Studies looking at the amount of screen time on smartphones and subsequent sleep problems have found that the longer the average screen time, the worse sleep quality people experience (Christensen et al. 2016; Rafique et al. 2020). Associations have also been found between video apps and indicators of worse sleep outcomes (Pillon et al., 2022; Wang & Scherr, 2021). Researchers looking at the link between TV and sleep have that a high volume of TV time is associated with subsequent sleep problems (Johnson et al., 2014; Nag & Pradhan, 2012). Exelmans and Van den Bluck (2017) looked at the combination of how many episodes people watched in one sitting and the amount of time spent watching television. This combination is in their study referred to as "binging", and they found that the more people binged, the worse sleep quality they reported. Multiple explanations for the relationship between TV time and sleep quality have been proposed. Exelmans et al. (2019) found a negative association between sleep quality and the use of television as procrastination. They hypothesized that the negative appraisal of watching TV may elicit pre-sleep worries, which in turn influences the subjective experience of sleep quality. Other theories regarding the effect of television and screen time address physiological factors, such as the effects of lights emitted by electronic devices (Green et al., 2017), and the reduction in melatonin levels (Figueiro et al., 2011).

Low sleep quality, sleep problems, and insufficient sleep can have a negative impact on both physiological and cognitive processes (Banks & Dinges, 2007; Chattu et al., 2018; Walker, 2008). This includes our affective states. Using a daily diary study, Narmandakh et al. (2021) looked at how affect, worrying, and sleep are connected. Their results showed that a night of good sleep predicted higher pleasant affect, less worry, and lower unpleasant affect the following day. Bower et al. (2010) also found a relationship between worse sleep quality and lower ambulatory positive affect. Several other studies also show the effect sleep quality can have on affects (Blaxtion et al., 2017; Prather et al., 2013; Sonnentag et al., 2008).

Summarizing, research show indications that a higher duration of time spent watching TV or videos has a negative impact on sleep quality, and that sleep quality can influence our affective states. Based on the summarized research, and H_1, we made the following hypotheses to examine how sleep quality mediates the effect of TV time on affect, as well as the serial indirect effect on job satisfaction:

H_4: *On the day-level, TV time has a negative indirect effect on positive affect via sleep quality.*

H_5: *On the day-level, there is a negative serial indirect effect of TV time on job satisfaction via sleep quality and positive affect.*

Method

Sampling and Participants

Participants were recruited using convenience sampling based on the authors' contacts. Participation was anonymous and voluntary. The participants were recruited by direct inquiry and using a flyer (see Appendix A) shared on social media, and via e-mail. The flyer included information on the purpose and procedure of the study. The inclusion criteria were that the participants worked 50-100% during the daytime and lived in Norway. All the participants watched television/videos on a regular basis. We incentivized participation with a donation of NOK 25 to a charity if they completed at least 7 out of 10 days.

In total, 62 registered for the study. Participants had to answer the daily questionnaires for at least two days to be included in the analysis. The number of participants excluded due to lack of response on the daily questionnaires was 9, meaning our final person-level sample consisted of 53 participants. The average number of days our participants responded was 7.98 ($SD = 1.95$), and a total of 71.89% of the days were filled out. In total, our sample on the day-level consisted of 303 observations.

Of our sample, 49 participants filled out the demographic questionnaire (28 women and 21 men), and they were between the age of 25 and 66 ($M = 40.90, SD = 13.91$). Average occupational

job tenure was 18.63 years ($SD = 14.54$), and 11.05 years ($SD = 11.90$) for organizational job tenure. The majority of our participants had higher education (80%), and teaching and education were the highest represented sector (26.50%). Nearly all participants worked full-time (98%). Of the participants, 39 (78%) had a partner at the time of the study.

Procedure

Prior to data collection, the study was approved by the IPS ethics committee at UiT- The Arctic University of Norway. We used a time-based daily diary study to test our model, as it is considered best suited for measuring ongoing experiences (Bolger et al., 2003), and is well suited for our day-level model. The time-based design entails that participants receive questionnaires at set times each day which allows us to systematically examine our measures at specific times during the day. The set times were based on the participants' working hours to shorten the time from the experience in question to its measure, thereby reducing levels of biased retrospection (Beal & Weiss, 2003). On the flyer, we included a URL and a QR-code to our screening questionnaire (see Appendix B) where they filled out a consent form and registered to take part in the study. In the screening questionnaire, we asked the participants on which days they would be working in the next 3 weeks. After the registration was complete, participants received a link to confirm their interest to participate and to fill in the pre-survey questionnaire collecting demographic data. To ensure anonymity, personal information (e.g., participants' names and email addresses) and questionnaire data were not assessed together and could not be matched. When the study began, they received two daily questionnaires over 10 workdays based on dates selected in the screening questionnaire. They received the first daily questionnaire at 6:00 am with the instruction to fill it out before they started working, and the second questionnaire at 2:00 pm with the instruction to fill it out at the end of the workday (within the last 30 minutes). The participants had 4 hours to answer the questionnaires and received a reminder if they had not filled them out.

Measures

Our participants were asked to fill out a pre-survey questionnaire before the start of the study, collecting demographic data. During the course of the study, two questionnaires were sent out via e-mail daily, one in the morning before work and one in the afternoon at the end of the workday. All items were in Norwegian and were filled out using online questionnaires, using the platform SoSci Survey (Leiner, 2022) at www.soscisurvey.de. We used back-translation to preserve the equivalence of the questionnaires in Norwegian (Brislin, 1970). Table 1 presents descriptive statistics, reliability, and intercorrelations for our measures.

Morning Questionnaire

Positive Affect. We measured positive affect using the following six items from the "Positive and Negative Affect Schedule (PANAS)" (Watson et al., 1988), as previously used by Sonnentag et al. (2008), "active", "interested", "excited", "strong", "inspired", and "alert". Participants were instructed to rate each of these items on a 5-point scale ranging from 1 = *very slightly or not at all* to 5 = *extremely* based on how they feel right now. Over the course of the week, Cronbach's α of the scale ranged from .84 to .93.

TV Time. Participants were informed that questions regarding television included linear and non-linear television, specifying that video/streaming apps are included in these questions. TV time was measured by asking participants if they watched TV last night, and if yes, how many hours and minutes.

TV Enjoyment. We used a scale presented by Tsay-Vogel and Nabi (2015) with minor adaptions (e.g., we used "my program" rather than "this episode" or "the performances"). TV enjoyment was measured using three items (e.g., "I enjoyed my program") measured on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. We found good reliability for the measure, Cronbach's α ranging from .81 to .92 over the course of the week.

Sleep Quality. We measured sleep quality using the "subjective sleep quality" item from the "Pittsburg Sleep Quality Index (PSQI)" (Buysse et al., 1989), adapted to asking about last night's

sleep. Participants were asked to rate sleep quality on a 4-point scale ranging from 1= *very bad* to 4 = *very good*.

Afternoon Questionnaire

Job Satisfaction. We measured job satisfaction using the Faces Scale (Kunin, 1998), which consists of a single item asking about overall satisfaction. We adapted the item to ask about overall job satisfaction on the current day. Participants chose one out of seven faces on a scale from 1 = *extremely negative* to 7 = *extremely positive*.

Control Variable

We have controlled for the day of the week in our analyses because previous studies have found that this variable may influence positive affect and job satisfaction (Ryan et al., 2010; Taylor, 2006). Taylor (2006) found that participants reported higher levels of job satisfaction, as well as lower levels of mental stress when being interviewed on Friday compared to in the middle of the week. He also states that when analyzing job satisfaction, the day of the week should be controlled for. As for positive affect, Ryan et al. (2010) found that people had better moods (more positive affect and less negative affect) on the weekends. Based on this we expected higher levels of job satisfaction and positive affect on Fridays compared to the rest of the week. With this predicted increase we also expected our other predictors to have a less prominent effect this day. We controlled for the day of the week by computing a *weekend effect* variable separating Friday from the other days of the week. This variable was added as a predictor in our models. The control variable slightly improved our model fit but did not change the results of our hypothesis testing.

Table 1

Means, Standard Deviations, Reliability, and Intercorrelations for Study Variables

Variable	*M*	*SD*	1.	2.	3.	4.	5.	6.
1. TV time	116.11	96.80	-	-.08	-.01	-.04	-.10	-.29
2. Positive affect	3.26	0.64	.04	*.89*	.60**	.06	.44**	.61
3. Sleep quality	3.55	0.96	-.02	.25**	-	.16	.44*	.55
4. TV enjoyment	4.08	0.83	.15	.03	-.01	*.85*	.54**	.43
5. Job satisfaction	5.70	1.03	.00	.12*	.02	-.08	-	.92
6. Weekend effect	0.18	0.38	-.09	-.01	.06	-.09	-.04	-

Note. Cronbach's α for between-level reliability is presented in the diagonal. Above the diagonal are the between-person level intercorrelations. Below the diagonal are intercorrelations on the within-person level.

* $p < .05$. ** $p < .01$.

Confirmatory Factor Analysis

We used a Confirmatory Factor Analysis (CFA) to verify the structure of our factors. The models were examined both on the within- and the between-level. To examine the model fit we used the cut-off values recommended by Hu and Bentler (1999): Root Mean Square Error of Approximation (RMSEA) < .08, Tucker-Lewis index (TLI) > .90, Comparative Fit Index (CFI) > .90, and Standardized Root Mean Square Residual (SRMR) < .06.

We first examined our hypothesized 2-factor model, with positive affect and TV enjoyment as two separate factors. This yielded a satisfactory fit on all indexes except TLI which was close to significant: $\chi^2(52) = 140.81$, $p < .001$; RMSEA = .067; TLI = .898; CFI = .926; SRMR = .040. We also ran a CFA with only 1 factor, combining our two multi-item variables (positive affect and TV enjoyment), which did not generate a good fit: $\chi^2(54) = 573.02$, $p < .001$; RMSEA = .159; TLI = .426; CFI = .570; SRMR = .158. To compare the 2-factor and the 1-factor model, we used the

Satorra-Bentler scaled χ^2 difference test (Satorra & Bentler, 2001), which showed that the 2-factor model significantly differed from the 1-factor model ($\chi^2\Delta(2) = 194.54$, $p < .001$). This indicates that our hypothesized model has a better fit than the alternative.

Data Analysis

In daily diary studies, there is a nested structure, where the days are nested within persons. Therefore, we tested our hypotheses with multilevel modeling using Mplus 8. This allowed us to examine the day-to-day variations within each participant by grouping them and thereby identifying the within-individual variations which was the goal of our study. All measurements used were on the day-level and were nested within each participant on the person-level.

To test our hypotheses, we built a moderated mediation model. First, we wanted to test the proposed moderation effect. To test this, we built an interaction term between TV time and TV enjoyment by multiplying the variables with each other. We then used this interaction as a predictor for positive affect. Further, we modeled an effect of positive affect on our outcome variable job satisfaction. We created a conditional indirect effect to look at how TV time indirectly affects job satisfaction via positive affect by examining the indirect effects when the moderator (TV enjoyment) was high vs low. As recommended by Hayes and Preacher (2010) we defined high as 1 SD above the mean and low as 1 SD below the mean. In the next step, we created an effect of TV time on sleep quality and used this effect to predict positive affect. We then combined this with the prediction of job satisfaction by positive affect, making the full serial mediation model to examine the indirect effect of TV time on job satisfaction.

To exclude between-individual variations from our analyses we group mean centered all predictor variables. Group mean centering, also called person mean centering, involves centering the values based on each participant's average answers over the days, and is considered the most appropriate method when interpreting within-individual variances (Ohly et al., 2010).

Results

Intraclass Correlations

Before testing our hypotheses, we examined the within- and between-individual variance components for all our variables. This was to ensure multilevel modeling was appropriate for our analyses. We calculated the variance components by doing an intraclass correlation analysis in Mplus. For TV time 60% of the variance was explained by within-individual variations. For positive affect, 64% was explained by the variations on the within-individual level, whereas for the variance in sleep quality, 79% was explained by within-individual variation. For TV enjoyment, 69% was explained by within-individual variance, and for job satisfaction, 58% of the variance was attributable to the variance on the within-individual level. These findings confirm the multilevel structure of the data and thereby indicate the use of multilevel modeling as enough variance is explained at the within-person level.

Hypothesis Testing

Our full model with the control variable did not yield a satisfactory fit, $\chi^2(2) = 6.297$, $p < .05$; RMSEA = .084; CFI = .881; TLI = .105; SRMR = .036. We added TV enjoyment and the interaction of TV time and TV enjoyment as predictors of sleep quality to further examine the model fit. This yielded a satisfactory fit, $\chi^2(0) = 0.000$, $p < .05$; RMSEA = .000, CFI = 1.000; TLI = 1.000; SRMR = .000. The added predictors did not change the values in the model results, and we will report the results yielded by the test of our original model.

In Hypothesis 1, we predicted that TV enjoyment would moderate the relationship between TV time and positive affect. To test this, we modeled TV enjoyment as a moderator between the predictor (TV time) and the outcome variable (positive affect). Our results showed a non-significant effect of the interaction term TV time x TV enjoyment on positive affect (*Est.* = 0.000, *SE* = 0.001, *t* = 0.130, *p* = .896), subsequently, we rejected our first hypothesis.

To test Hypothesis 2 suggesting that positive affect positively influences job satisfaction, we modeled job satisfaction as the outcome variable and positive affect as a predictor. The results

indicate a positive relationship between positive affect and job satisfaction, but this was not significant (*Est.* = 0.135, *SE* = 0.133, *t* = 1.012, *p* = .311). Hypothesis 2 was therefore rejected.

Further, Hypothesis 3 states that there is an indirect effect of TV on job satisfaction via positive affect, moderated by TV enjoyment. We predicted that this effect would be positive for high levels of enjoyment and negative for low levels. We examined this by modeling a conditional indirect effect of TV time on job satisfaction via the mediation of positive affect at high (+1 *SD*) and low (-1 *SD*) levels of TV enjoyment. Our proposed indirect effect yielded non-significant effects for both low (*Est.* = 0.000, 95%CI [0.000-0.000]) and high (*Est.* = 0.000, 95%CI [0.000-0.000]) levels of TV enjoyment. The index for the moderated mediation also showed a non-significant effect (*Est.* = 0.000, 95%CI [0.000-0.000]). Thus, we rejected our hypothesis.

In Hypothesis 4, we expected TV time to have a negative indirect effect on positive affect via sleep quality. We modeled TV time as a predictor, sleep quality as a mediator, and positive affect as the outcome. Our results showed a non-significant effect (*Est.* = 0.000, 95% CI [0.000-0.000]). We did see a significant relationship between sleep quality and positive affect (*Est.* = 0.193, *SE* = 0.046, *t* = 4.224, *p* = < .001), but as we did not find that sleep worked as a mediator between TV time and positive affect, we rejected our hypothesis.

Hypothesis 5 states that TV time has a negative serial indirect effect on job satisfaction via sleep quality and positive affect. We modeled TV time, sleep quality, and positive affect as predictors for job satisfaction, and expected that sleep quality and positive affect would mediate the indirect effect. The results did not show a significant effect of our proposed serial indirect effect (*Est.* = 0.000, 95% CI [0.00-0.00]). Hence, we rejected Hypothesis 5.

Discussion

The aim of our study was to examine the influence of TV time in the afternoon and evening on job satisfaction the next day. We included TV enjoyment as a moderator for TV time, and positive affect and sleep quality as mediators in our study as we believed these factors would impact the relationship. The results showed no significant associations between the variables in the

proposed model. Our analyses showed that the direction of some relationships was as expected in our hypotheses, but the standard errors are too high, due to the small sample size, for the relationships to be significant.

For our first hypothesis (H_1) we did not see an effect of the interaction between TV time and TV enjoyment on positive affect. Previous studies have, as earlier addressed, found differing results regarding the positive and negative effects of watching TV. One study found that for European countries TV did not influence life satisfaction (Kataria & Regner, 2011), whereas others found positive and negative effects on well-being, happiness, and affective states (Erickson et al., 2018; Frey & Benesch, 2008). With our study, we wanted to contribute to an understanding of what influences these effects, and what makes the effects positive or negative. We hypothesized that the longer you watch something you enjoy, the higher the positive affect would be. Among our participants, we observed that the average daily TV time was around half of the European average. We do not look at between-individual differences in our study, but it still gives an idea of how much time each of our participants spent watching TV. Even though we saw a high average level of TV enjoyment, our participants might not have watched enough TV for this interaction to be significant. Previous studies also found that the negative effect of TV is mainly observed when TV time is high (Frey et al., 2007), and Reinecke et al. (2014) argued that the negative effect may derive from ego depletion. Since ego depletion refers to a loss of self-control and cognitive exhaustion, it is not unlikely to think that it also includes low levels of enjoyment. I.e., the proposed interaction might have been affected by the low TV time both in terms of not having long enough durations of enjoyable viewing to see a positive effect, and not long enough durations to expect low enjoyment to have a negative effect. This might also explain why we did not find the interaction to explain the observed daily fluctuations in positive affect.

For Hypothesis 2 we did not observe the proposed effect of positive affect on job satisfaction. In addition to the possibility of this effect simply not existing, it may also come as a

result of other factors. First, we only used one item to measure job satisfaction. This could contribute to a lack of variance on a day-to-day level and is especially relevant if people tend to see job satisfaction as an overall evaluation and not as something that would naturally vary from one day to the next. Second, our understanding of job satisfaction derives from AET where it is seen as a construct that is affected by both current and previous affective states. We specified in our questionnaire that we were only interested in the level of job satisfaction for the day in question, but people may still have been influenced by their overall evaluation. This has multiple possible explanations. One being that participants receive the same question at the same time for 10 workdays. Hence, it is not unlikely that people use less time and effort to answer the questionnaires as the days go by, and unconsciously rely on evaluations given on previous days. In addition, Weiss and Cropanzano (1996) argue that higher levels of positive affect may influence our evaluations by simplifying our processing and causing us to use less data to make judgments. Previous research regarding this effect has mainly focused on trait positive affect, but this may also be the case for state positive affect, which we focus on in our study. The mean level of positive affect observed over the course of our study indicates that our participants mostly experience medium to high levels of positive affect. This could possibly have affected the amount of processing going into their evaluations of job satisfaction.

The proposed positive indirect effect of TV time on job satisfaction through TV enjoyment and positive affect did not appear in our results. Hypothesis 3 could be seen as a combination of H_1 and H_2, but it contrasts by adding the indirect effect of TV time on job satisfaction, making it a complete moderated mediation. Seeing that H_1 and H_2 were not confirmed, it is not too surprising that H_3 was rejected as well. The missing indirect effect may in part result from the low average TV time mentioned previously, or from the high average positive affect and job satisfaction also mentioned. It is however important to keep in mind that there may be other unknown factors contributing to our results.

In Hypothesis 4 sleep quality was added as a mediator when looking at the indirect effect of TV time on positive affect and in Hypothesis 5 the effect on job satisfaction was added as well. We did not find any significant results for H_4 or for the serial mediation that is H_5. This concluded that these hypotheses were rejected as well. The theoretical background for this study indicated an effect of TV on sleep and of sleep on affective states, therefore when combining these effects, we expected to see a significant mediation in H_4. We did see an effect of sleep quality on positive affect. However, sleep did not seem to be influenced by TV time. This could partially be due to the low average TV time for our participants, reducing the possible negative effects of TV. For H_5, job satisfaction was not influenced by positive affect, and as TV time did not affect sleep quality, we did not see the serial mediation we expected.

Practical Implications

Our findings present some practical implications. First, we saw a significant relationship between sleep quality and positive affect, which indicates that when we sleep better, we will have higher levels of positive affect the next morning. This is supported by numerous researchers saying that sleep is important for indicators of well-being (Bouwmans et al., 2017; Steptoe et al., 2008). In practice, this emphasizes the importance of including sleep in our understanding of how we feel on a day-to-day basis. Second, we saw that fluctuations in TV time did not significantly affect each participant's sleep quality, positive affect, and job satisfaction. The results are strictly on the within-level and our sample size must be kept in mind. However, the missing effects give the notion that there is no need to worry about sometimes watching more TV than your average TV time.

Limitations and Future Directions

Some limitations to our study should be taken into consideration. First, there are some limitations with our sample. We used a convenience sampling method when recruiting participants. This allowed us to directly contact people we believed fit our inclusion criteria, but it also means that our sample will not be generalizable as it does not represent the entire population (Stratton,

2021). When doing diary studies generalizability is hard to obtain as you mainly do multiple data collections from a non-randomized smaller sample rather than one data collection from a bigger, more representative sample. Our sample shows a good range of age, tenure, and work sectors, as well as an even gender distribution. However, 80% of our participants have some form of higher education, which is substantially higher than the average percentage in Norway which was 36% in 2021 (Statistics Norway, 2022). Hence, our results may not apply to the general population of workers in Norway, which is something to have in mind when interpreting our results as we do not know the exact effects this might have. Our analyses also showed that our data did not have high statistical power as a result of the high dispersion of data, indicating that our sample is too small. With limited resources, we did not find more people willing to participate for the ten days. Although our sample size of 53 on level 1 and 303 on level 2 is considered acceptable for a diary study based on the number of observations collected by some (Maas & Hox, 2004; Scherbaum & Ferreter, 2009), others recommend a bigger sample, both on the day-level and the person-level, to ensure statistical power (Gabriel et al., 2019). According to Scherbaum and Ferreter (2009), the greatest impact on statistical power was found by increasing the number of observations on the higher rather than the lower level, meaning that increasing the number of participants yielded to be more effective with regards to improving statistical power compared to increasing the number of days. Future research should therefore strive to achieve a bigger and more representative sample, both to improve statistical power, and to make findings more generalizable.

Second, there are some limitations regarding our study design. Daily diary studies give a unique insight into participants' day-to-day fluctuations in various measures. There are also some special considerations you need to take not to burden the participants more than necessary. In our case we made several cuts regarding items used in our measures, to reduce the risk of dropout due to the questionnaires being too time-consuming. As a result of this, we have several one-item measures in our study. This means that we were not able to conduct a validity- and reliability

analysis on those measures, which is not ideal. In our opinion, these cuts were necessary with regard to our participants and the fact that participation was voluntary with the only incentive being a charity donation of NOK 25.

Third, our measures solely relied on self-reports, which opens the possibility of common method bias (Podsakoff et al., 2003). This refers to errors in the measurement instruments being wrongfully attributed to variance in the construct the instrument measures. When using the same source of information for both the predictor and the outcome variables, this bias is important to be aware of. In our study, we have taken some steps to alleviate the risk of common method bias. Our confirmatory factor analysis shows good construct validity, indicating that our factor measures differ from each other, thereby reducing the chance of bias. We have also used different stimulus materials on the measures, using numeric scales, Likert scales, and visual scales. The stimulus for the outcome variable differed from all other variables, as recommended by Podsakoff et al. (2003). Further, we collected data at different times during the day, reducing the chance of measures influencing each other. It is also important to remember that self-reports are based exclusively on subjective responses and must therefore be interpreted with caution.

For future reference, research examining similar relationships should take into consideration the points we have made regarding sample and design, as well as the following. Even though we had two questionnaires per day looking at different factors, we believe a third questionnaire in the evening asking about TV time and enjoyment would possibly give a more precise representation of these variables. This is because our participants were asked about TV time and enjoyment the day after they watched TV, which may lead to biased retrospection. After all, they had to remember time spent both watching videos on the phone and TV. In addition to this, we believe that adding more measures or items to job satisfaction would give higher variation in the responses. Having measures several times during a workday will give a more "here and now" response, which may lead the participants to be less biased by overall satisfaction. Asking about different factors within

job satisfaction could also reduce bias by making participants more aware of multiple aspects of the variable.

In addition to the changes that can be made for future studies similar to ours, there is also a need for more research in general on the spillover effect from home to work. There has been found a positive effect of physical activity on job satisfaction (Kuykendall et al., 2020), and we believe this could be an interesting topic for further research. Including physical activity as a variable that could modify the negative effect of sedentary behaviors on job attitudes could give further explanation for possible spillover effects. Research on these effects can be approached in different ways, daily diary is just one of them. Perhaps adding objective measures to one of the predictor variables would give more insight because of increased accuracy. A mixed design, combining qualitative and quantitative approaches, would give complementary perspectives on the topic and a wider understanding of the effects.

Conclusion

This research is to our knowledge the first to investigate the spillover effect of watching TV on job satisfaction. Despite our non-significant results and limitations, we believe the study gives new insight into the effects of TV time and the other predictors of job satisfaction. Indeed, it gives us an idea of how TV time possibly has less impact when being below a certain limit, as explained in the discussion. We believe watching hours of TV and videos on smartphones does have consequences for the individual, and future research should look further into the psychological effects. Further, job satisfaction is an important factor in employees' lives, and knowledge of what contributes to this factor is important both to society and employers. More research on the topic will give an opportunity to increase job satisfaction through interventions.

References

Aksoy, Y., Çankaya, S., & Taşmektepligil, M. Y. (2017). The effects of participating in recreational activities on quality of life and job satisfaction. *Universal Journal of Educational Research, 5*(6), 1051-1058. https://doi.org/10.13189/ujer.2017.050619

An, H-Y., Chen, W., Wang, C-W., Yang, H-F., Huang, W-T., & Fan, S-Y. (2020). The relationships between physical activity and life satisfaction and happiness among young, middle-aged, and older adults. *International Journal of Environmental Research and Public Health, 17*(13). https://doi.org/10.3390/ijerph17134817

Babson, K., & Feldner, M. (Eds.). (2015). *Sleep and affect: Assessment, theory, and clinical implications*. Elsevier Academic Press. https://doi.org/10.1016/B978-0-12-417188-6.00021-9

Banks, S., & Dinges, D. F. (2007). Behavioral and physiological consequences of sleep restriction. *Journal of Clinical Sleep Medicine, 3*(5), 519-528. https://doi.org/10.5664/jcsm.26918

Beal, D. J., & Weiss, H. M. (2003). Methods of ecological momentary assessment in organizational research. *Organizational Research Methods, 6*(4), 440–464. https://doi.org/10.1177/1094428103257361

Blaxtion, J. M., Bergeman, C. S., Whitehead, B. R., Braun, M. E., & Payne, J. D. (2017). Relationships among nightly sleep quality, daily stress, and daily affect. *The Journals of Gerontology, 72*(3), 363-372. https://doi.org/10.1093/geronb/gbv060

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*(1), 579-616. https://doi.org/10.1146/annurev.psych.54.101601.145030

Bouwmans, M. E. J., Bos, E. H., Hoenders, R., Oldehinkel, A. J., & Jonge, P. (2017). Sleep quality predicts positive and negative affect but not vice versa. An electronic diary study in

depressed and healthy individuals. *Journal of Affective Disorders, 207*, 260-267.

http://dx.doi.org/10.1016/j.jad.2016.09.046

Bower, B., Bylsma, L. M., Morris, B. H., & Rottenberg, J. (2010). Poor reported sleep quality

predicts low positive affect in daily life among healthy and mood-disordered people. *Journal*

of Sleep Research, 19(2), 323-332. https://doi.org/10.1111/j.1365-2869.2009.00816.x

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural*

Psychology, 1(3), 185-216. https://doi.org/10.1177/135910457000100301

Business of apps. (2022, September 6). *YouTube revenue and usage statistics*. Retrieved October 4,

2022, from https://www.businessofapps.com/data/youtube-statistics/

Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The

Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and

research. *Psychiatry Research*, *28*(2), 193-213.

https://doi.org/10.1016&09651781(89)90047-4

Carlson, D., Kacmar, K. M., Zivnuska, S., Ferguson, M., & Whitten, D. (2011). Work-family

enrichment and job performance: A constructive replication of affective events theory.

Journal of Occupational Health Psychology, 16(3), 297-312.

https://doi.org/10.1037/a0022880

Cassidy, S., Chau, J., Catt, M., Bauman, A., & Trenell, M. (2017). Low physical activity, high

television viewing and poor sleep duration cluster in overweight and obese adults; a cross-

sectional study of 398,984 participants from the UK Biobank. *International Journal of*

Behavioral Nutrition and Physical Activity, 14(57). https://doi.org/10.1186/s12966-017-

0514-y

Chattu, V. K., Manzar, D., Kumary, S., Burman, D., Spence, D. W., & Pandi-Perumal, S. R. (2018).

The global problem of insufficient sleep and its serious public health implications.

Healthcare, 7(1). https://doi.org/10.3390/healthcare7010001

Christensen, M. A., Bettencourt, L., Kaye, L., Moturu, S. T., Nguyen, K. T., Olgin, J. E., Pletcher, M. J., & Marcus, G. M. (2016). Direct measurements of smartphone screen-time: relationships with demographics and sleep. *PLOS ONE, 11*(11). https://doi.org/10.1371/journal.pone.0165331

Cole, K., Daly, A., & Mak, A. (2009). Good for the soul: The relationship between work, wellbeing and psychological capital. *The Journal of Socio-Economics, 38*(3). 464-474. https://doi.org/10.1016/j.socec.2008.10.004

Connolly, J. J., & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences*, *29*(2), 265-281. https://doi.org/10.1016/S0191-8869(99)00192-0

Demirci, K., Akgönül, M., & Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioral Addictions*, *4*(2), 85-92. https://doi.org/10.1556/2006.4.2015.010

Dixon, S. (2022, August 1). *Social media platforms growth of MAU worldwide 2019-2021*. Statista. https://www.statista.com/statistics/1219318/social-media-platforms-growth-of-mau-worldwide/

Domingues-Montanari, S. (2017). Clinical and psychological effects of excessive screen time on children. *Journal of Pediatrics and Child Health, 53*, 333-338. https://doi.org/10.1111/jpc.13462

Eby, L. T., Maher, C. P., & Butts, M. M. (2010). The intersection of work and family life: The role of affect. *Annual Review of Psychology, 61*(1), 599-622. https://doi.org/10.1146/annurev.psych.093008.100422

Erickson, T. M., McGuire, A. P., Scarsella, G. M., Crouch, T. A., Lewis, J. A., Eisenlohr, A. P., & Muresan, T. J. (2018). Viral videos and virtue: Moral elevation iductions shift affect and

interpersonal goals in daily life. *The Journal of Positive Psychology, 13*(6), 643-654.

https://doi.org/10.1080/17439760.2017.1365163

Exelmans, L., Meier, A., Reinecke, L., & Van Den Bulck, J. (2019). Just one more episode: Predictors of procrastination with television and implications for sleep quality. *Mass Communication and Society, 22*(5), 654-685.

https://doi.org/10.1080/15205436.2019.1606246

Exelmans, L., & Van den Bluck, J. (2017). Binge viewing, sleep, and the role of pre-sleep arousal. *Journal of Clinical Sleep Medicine, 13*(8). 1001-1008. https://doi.org/10.5664/jcsm.6704

Figueiro, M. G., Wood, B., Plitnick, B., & Rea, M. S. (2011). The impact of light from computer monitors on melatonin levels in college students. *Neuroendocrinology Letters, 32*(2), 158-163.

Frey, B. S., & Benesch, C. (2008). TV, time, and happiness. *Homo Oeconomicus, 25*(3), 413-424.

Frey, B. S., Benesch, C., & Stutzer, A. (2007). Does watching TV make us happy?. *Journal of Economic Psychology, 28*(3), 283-313. https://doi.org/10.1016/j.joep.2007.02.001

Forgas, J. P., & Eich, E. (2013). Affective influences on cognition: Mood congruence, mood dependence, and mood effects on processing strategies. In A. F. Healy, R. W. Proctor, & I. B. Weiner (Eds.), *Handbook of psychology: Experimental psychology* (pp. 61–82). John Wiley & Sons, Inc.

Gabriel, A. S., Podsakoff, N. P., Beal, D. J., Scott, B. A., Sonnentag, S., Trougakos, J. P., & Butts, M. M. (2019). Experience sampling methods: A discussion of critical trends and considerations for scholarly advancement. *Organizational Research Methods, 22*(4), 969-1006. https://doi.org/10.1177/1094428118802626

Gedikli, C., Miraglia, M., Connolly, S., Bryan, M., & Watson, D. (2022). The relationship between unemployment and wellbeing: an updated meta-analysis of longitudinal evidence. *European*

Journal of Work and Organizational Psychology, 1-17.

https://doi.org/10.1080/1359432X.2022.2106855

Goodwin, P. E., Intrieri, R. C., & Papini, D. R. (2005). Older adults' affect while watching television. *Activities, Adaptation & Aging, 29*(2), 55-72.

https://doi.org/10.1300/J016v29n02_04

Green, A., Cohen-Zion, M., Haim, A., & Dagan, Y. (2017). Evening light exposure to computer screens disrupts human sleep, biological rhythms, and attention abilities. *Chronobiology International, 34*(7), 855-865. https://doi.org/10.1080/07420528.2017.1324878

Gui, M., & Stanca, L. (2009). *Television Viewing, Satisfaction and Happiness: Facts and Fiction,* (167).

Halfmann, A., & Reinecke, L. (2021). Binge-watching as case of escapist entertainment use. In P.Vorderer & C. Klimmt (Eds.), *The Oxford handbook of entertainment theory*, (1st ed., pp. 181-203). Oxford University Press.

https://doi.org/10.1093/OXFORDHB/9780190072216.013.11

Hassenzahl, M., Wiklund-Engblom, A., Bengs, A., Hägglund, S., & Diefenbach, S. (2015). Experience-oriented and product-oriented evaluation: Psychological need fulfillment, positive affect, and product perception. *International Journal of Human-Computer Interaction, 31*(8), 530-544. https://doi.org/10.1080/10447318.2015.1064664

Hayes, A. F., & Preacher, K. J. (2010). Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear. *Multivariate Behavioral Research*, *45*(4), 627-660. https://doi-org.mime.uit.no/10.1080/00273171.2010.498290

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Ilies, R., & Judge, T. A. (2002). Understanding the dynamic relationships among personality, mood, and job satisfaction: A field experience sampling study. *Organizational Behavior and Human Decision Processes, 89*(2), 1119-1139. https://doi.org/10.1016/S0749-5978(02)00018-3

Jahangir, S. F., Nawaz, N., & Khan, N. (2014). Effects of media (television) on mental health. *FWU Journal of Social Sciences, 8*(1), 97-107. https://doi.org/10.3998/jmmh.10381607.0008.208

Johnson, J. G., Cohen, P., Kasen, S., First, M. B., & Brook, J. S. (2004). Associations between television viewing and sleep problems during adolescence and early adulthood. *Arch Pediatric Adolescence Medicine, 158*(6), 562-568. https://doi.org/10.1001/archpedi.158.6.562

Judge, T. A., & Ilies, R. (2004). Affect and job satisfaction: A study of their relationship at work and at home. *Journal of Applied Psychology, 89*(4), 661-673. https://doi.org/10.1037/0021-9010.89.4.661

Kataria, M., & Regner, T. (2011). A note on the relationship between television viewing and individual happiness. *Journal of Behavioral and Experimantal Economics, 40*(1), 53-58. https://doi.org/10.1016/j.socec.2010.06.016

Kubey, R. W., & Csikszentmihalyi, M. (1990). Television as escape: Subjective experience before an evening of heavy viewing. *Communication Reports, 3*(2), 92-100. https://doi.org/10.1080/08934219009367509

Kunin, T. (1998). The construction of a new type of attitude measure. *Personnel Psychology, 51*, 823-824.

Kuykendall, L., Lei, X., Zhu, Z., & Hu, X. (2020). Leisure choices and employee well-being: Comparing need fulfillment and well-being during TV and other leisure activities. *Applied Psychology: Health and Well-Being, 12*(2), 532-558. https://doi.org/10.1111/aphw.12196

Leiner, D. J. (2022). SoSci Survey (Version 3.4.03) [Computer software]. Available at
https://www.soscisurvey.de

Maas, C. J., & Hox, J. J. (2004). Robustness issues in multilevel regression analysis. *Statistica
Neerlandica, 58*(2), 127-137. https://doi.org/10.1046/j.0039-0402.2003.00252.x

Nag, C., & Pradhan, K. (2011). Impact of television on sleep habits. *Biological Rhythm Research,
43*(4), 423-430. https://doi.org/10.1080/09291016.2011.599630

Narmandakh, A., Oldehinkel, A. J., Masselink, M., Jonge, P., & Roest, A. M. (2021). Affect, worry,
and sleep: Between- and within-subject associations in a diary study. *Journal of Affective
Disorders Reports*, *4*. https://doi.org/10.1016/j.jadr.2021.100134.

Ohayon, M., Wickwire, E. M., Hirshkowitz, M., Albert, S. M., Avidan, A., Daly, F. J., Dauvilliers,
Y., Ferri, R., Fung, C., Gozal, D., Hazen, N., Krystal, A., Lichstein, K., Mallampalli, M.,
Plazzi, G., Rawding, R., Scheer, F. A., Somers, V., & Vitiello, M. V. (2016). National Sleep
Foundation´s sleep quality recommendations: First report. *Journal of the National Sleep
Foundation, 3*(1), 6-19. https://doi.org/10.1016/j.sleh.2016.11.006

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research:
An introduction and some practical recommendations. *Journal of Personnel Psychology,
9*(2), 79. https://doi.org/10.1027/1866-5888/a000009

Oliver, M. B., & Hartmann, T. (2010). Exploring the role of meaningful experiences in users'
appreciation of "good movies". *Projections: The Journal for Movies and Mind*, *4*(2), 128-
150. https://doi.org/10.3167/proj.2010.040208

Pengpid, S., & Peltzer, K. (2019). Sedentary behaviour, physical activity and life satisfaction,
happiness and perceived health status in university students from 24 countries. *International
Journal of Environmental Research and Public Health, 16*(12).
https://doi.org/10.3390/ijerph16122084

Pillion, M., Gradisar, M., Bartel, K., Whittall, H., & Kahn, M. (2022). What´s "app"-ning to

adolescent sleep? Links between device, app use, and sleep outcomes. *Sleep Medicine, 100*,

174-182. https://doi.org/10.1016/j.sleep.2022.08.004

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases

in behavioral research: a critical review of the literature and recommended remedies.

Journal of Applied Psychology, 88(5), 879. https://doi.org/10.1037/0021-9010.88.5.879

Prather, A. A., Bogdan, R., & Hariri, A. R. (2013). Impact of sleep quality on amygdala reactivity,

negative affect and perceived stress. *Psychosomatic Medicine, 75*(4), 350-358.

https://doi.org/10.1097/PSY.0b013e31828ef15b

Rafique, N., Al-Asoom, LI., Alsunni, A. A., Saudagar, F. N., Almulhim, L., & Alkaltham, G.

(2020). Effects of mobile use on subjective sleep quality. *Nature and Science of Sleep, 12*,

357-364. https://doi.org/10.2147/NSS.S253375

Reinecke, L., Hartmann, T., & Eden, A. (2014). The guilty couch potato: The role of ego depletion

in reducing recovery through media use. *Journal of Communication, 64*(4), 569-589.

https://doi.org/10.1111/jcom.12107

Reinecke, L., Klatt, J., & Krämer, N. C. (2011). Entertaining media use and the satisfaction of

recovery needs: Recovery outcomes associated with the use of interactive and noninteractive

entertaining media. *Media Psychology, 14*(2), 192-215.

https://doi.org/10.1080/15213269.2011.573466

Ryan, R. M., Bernstein, J. H., & Brown, K. W. (2010). Weekends, work, and well-being:

Psychological need satisfactions and day of the week effects on mood, vitality, and physical

symptoms. *Journal of Social and Clinical Psychology, 29(*1), 95-122.

https://doi.org/10.1521/jscp.2010.29.1.95

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment

structure analysis. *Psychometrika*, *66*(4), 507-514. https://doi.org/10.1007/BF02296192

Scherbaum, C. A., & Ferreter, J. M. (2009). Estimating statistical power and required sample sizes for organizational research using multilevel modeling. *Organizational Research Methods, 12*(2), 347-367. https://doi.org/10.1177/1094428107308906

Scott, B.A., & Judge, T.A. (2006). Insomnia, emotions, and job satisfaction: A multilevel study. *Journal of Management, 32(*5), 622-645. https://doi.org/10.1177/0149206306289762

Song, Z., Foo, M. D., & Uy, M. A. (2008). Mood spillover and crossover among dual-earner couples: a cell phone event sampling study. *Journal of Applied Psychology, 93*(2), 443-452. https://doi.org/10.1037/0021-9010.93.2.443

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). "Did you have a nice evening?" A day-level study on recovery experiences, sleep, and affect. *Journal of Applied Psychology, 93*(3), 674–684. https://doi.org/10.1037/0021-9010.93.3.674

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. SAGE Publications Inc. https://doi.org/10.4135/9781452231549

Statistics Norway (2022, June 22). *Befolkningens utdanningsnivå.* Retrieved November 29, 2022, from https://www.ssb.no/utdanning/utdanningsniva/statistikk/befolkningens-utdanningsniva

Steptoe, A., O´Donnell, K., Marmot, M., & Wardle, J. (2008). Positive affect, psychological well-being, and good sleep. *Journal of Psychosomatic Research, 64*, 409-415. https://doi.org/10.1016/j.jpsychores.2007.11.008

Stoll, J. (2022a, February 14). *Time spent watching television in the U.S. 2019-2023*. Statista. https://www.statista.com/statistics/186833/average-television-use-per-person-in-the-us-since-2002/

Stoll, J. (2022b, June 1). *Average daily TV viewing time in Europe 2015-2019*. Statista. https://www.statista.com/statistics/1263785/average-daily-tv-viewing-time-europe/

Stratton, S. J. (2021). Population research: convenience sampling strategies. *Prehospital and Disaster Medicine, 36*(4), 373-374. https://doi.org/10.1017/S1049023X21000649

Taylor, M. P. (2006). Tell me why I don't like Mondays: Investigating day of the week effects on

    job satisfaction and psychological well-being. *Journal of the Royal Statistical Society:*

    Series A (Statistics in Society), 169(1), 127-142. https://doi.org/10.1111/j.1467-

    985X.2005.00376.x

Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & De Chermont, K. (2003). The

    affective underpinnings of job perceptions and attitudes: A meta-analytic review and

    integration. *Psychological Bulletin, 129*(6), 914-945. https://doi.org/10.1037/0033-

    2909.129.6.914

Tsay-Vogel, M., & Nabi, R. L. (2015). The power of positive action: Exploring the role of

    participatory behaviors through the lens of the tripartite model of media enjoyment. *Journal*

    of Broadcasting & Electronic Media, *59*(4), 658-678.

    https://doi.org/10.1080/08838151.2015.1093488

Unanue, W., Gómez, M. E., Cortez, D., Oyanedel, J. C., & Mendiburo-Seguel, A. (2017).

    Revisiting the link between job satisfaction and life satisfaction: The role of basic

    psychological needs. *Frontiers in Psychology*, *8*(680).

    https://doi.org/10.3389/fpsyg.2017.00680

Walker, M. P. (2008). Cognitive consequences of sleep and sleep loss. *Sleep Medicine, 9*(1), 29-34.

    https://doi.org/10.1016/S1389-9457(08)70014-5

Wang, K., & Scherr, S. (2021). Dance the night away: How automatic TikTok use creates pre-sleep

    cognitive arousal and daytime fatigue. *Mobile Media & Communication, 10*(2), 316-336.

    https://doi.org/10.1177/20501579211056116

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of

    positive and negative affect: The PANAS scales. *Journal of Personality and Social*

    Psychology, 54(6), 1063–1070. https://doi.org/10.1037/0022-3514.54.6.1063

Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews*, (18th ed., pp. 1-74). JAI Press.

Weiss, H. M., Nicholas, J. P., & Daus, C. S. (1999). An examination of the joint effects of affective experiences and job beliefs on job satisfaction and variations in affective experiences over time. *Organizational Behavior and Human Decision Processes, 78*(1), 1-24. https://doi.org/10.1006/obhd.1999.2824

Zijlstra, F. R. H., & Sonnentag, S. (2006). After work is done: Psychological perspectives on recovery from work. *European Journal of Work and Organizational Psychology, 15*(2), 129-138. https://doi.org/10.1080/13594320500513855

Appendix A

BIDRA TIL NY FORSKNING!

DU ER INVITERT FORDI

Du er i en 50-100% jobb hvor du jobber på dagtid. Du ser mye eller lite på TV eller videoer på smarttelefon/tablet.

HVA INNEBÆRER DELTAKELSE?

1 spørreskjema | 1 gang

Dette er et grunnleggende spørreskjema som kartlegger enkle fakta om deg og demografiske data.

2 spørreskjema | Daglig | 10 arbeidsdager

Du vil bli bedt om å fylle ut et spørreskjema om morgenen som tar cirka 5 minutter, og et etter jobb som vil ta maks 5 minutter.

HVORFOR DELTA?

Ved å delta bidrar du til ny forskning på hvordan bruk TV/video eksponering påvirker våre liv. Det er stadig økning i bruk av skjerm, og desto viktigere at vi får ny kunnskap om hvordan dette kan påvirke oss.

Dersom du fullfører minst 7 av 10 dager vil vi donere 25 kroner til en av de følgende veldedige organisasjonene:

- Greenpeace Norge
- Redd barna
- Come Back Alive (støtter medlemmer i de militære styrkene i Ukraina)

MÅLSETTING

Studien vår skal undersøke sammenhengen mellom TV-titting og dens innvirkning på hverdagen hos personer i jobb.

Dana.unger@uit.no

77646557

HVEM ER ANSVARLIG FOR PROSJEKTET?

Førsteamanuensis Dr. Dana Unger fra Institutt for Psykologi ved UiT Norges arktiske universitet leder prosjektet. Lena Cecilie Strand og Trine Lise Hafnor skriver hovedoppgaven deres under hennes veiledning.

ANONYMITET:

Deltakelse i dette prosjektet er fullstendig frivillig og anonymt. Data vi innhenter vil ikke kunne spores tilbake til deg, og vi vil ikke innhente personopplysning som navn eller telefonnummer. Du har alltid rett til å avslutte din deltakelse.

https://www.soscisurvey.de/TV_tittings_pavirkning/?q=screening

Appendix B

Study protocol

TV-TITTINGS PÅVIRKNING PÅ JOBB

Date:

26/09/2022

Participants

Name	Email	Telephone	Organisation
Trine Lise Hafnor	tha226@post.uit.no		UIT
Lena Cecilie Strand	lst094@post.uit.no		UIT
Dana Unger	dana.unger@uit.no		UIT
Fabiola H. Gerpott	fabiola.gerpott@whu.edu		WHU (Germany)
Wladislaw Rivkin	rivkinw@tcd.ie		TCD (Ireland)

TOPIC

TV-TITTINGS PÅVIRKNING PÅ FAKTORER I HVERDAGEN

Study Design

Investigation of fluctuation of watching TV within persons. Moderation of the within-day connections through day-specific and person-specific variables. The daily survey takes place on 10 consecutive working days.

Pre-survey: max. 30 min
Measurement points per day: max. 5 min
                                          mp 1: before work
                                          mp 2: after work

Measurement: Screening

► Consent

Translation

S111_01	Jeg forstår at jeg har mottatt og forstått informasjonen om dette forskningsprosjektet om TV-tittings påvirkning på faktorer i hverdagen og har hatt anledning til å stille spørsmål.	Ja	Nei
S111_02	Jeg forstår at jeg deltar frivillig i denne studien og kan trekke meg fra studien når som helst uten å oppgi årsak.	Ja	Nei
S111_03	Jeg forstår at jeg godtar at dataene mine blir samlet inn som en del av denne studien og vil bli registrert, lagret og behandlet anonymt.	Ja	Nei
S111_04	Jeg forstår at anonymiserte data vil bli gjort tilgjengelig for andre forskere.	Ja	Nei
S111_05	Jeg forstår at jeg godtar at e-posten min blir lagret, slik at jeg skal kunne bli kontaktet (f.eks. bli tilsendt lenkene til spørreskjemaene) som en del av studien.	Ja	Nei
S111_06	Jeg vil gjerne delta i studien «TV-tittings påvirkning på faktorer i hverdagen».	Ja	Nei

► Screening items

Instruction and Items

S104	Where do you live?	Norway	Somewhere else, that is:
S106	What is your employment status?		
S105	What kind of contract do you have?	Fulltime	Parttime, that is___%
S101	When do you work?		
S107	On which days will you be working during the next three weeks?		
S108	How many hours do you on average spend watching TV/video per day?		

► Demographics

Instruction and Items

DD01	Please indicate your gender.	Female	Male	Non-binary	Other
DD02	In which year are you born?				
D017	What is the highest level of education you have completed?				

DD03	What is your employment status?	
DD04	For how many years have you been working? (in years)	
DD05	For how many years have you been working in your current organisation? (in years)	
DD07	How many hours do you work per week? (According to your working contract)	
DD09	Please indicate the sector in which you are currently working.	• Finance/Insurance • Construction • Retail and Wholesale • Energy and water supply • Teaching and Education • Restaurant and Hotel • Health • Craftsmanship • IT & Communications • Art & Entertainment • Agriculture and Forestry • Public Administration • Production and Industry • Traffic • Science • Other
DD10	Are you free to choose the time you start working?	Yes No
DD11	Are you free to choose the time you finish working?	Yes No
DD12	Are you free to decide when you take breaks at work?	Yes No
DD13	Do you have a partner?	Yes No
DD14	If you have a partner, do you share a household?	Yes No
DD15	How many children live in your household?	0, 1,2,3, > 4
DD16	How old are the children, living in your household? Please enter the age in years. If you have more than 4 children, please indicate the age of the two youngest and two oldest children.	
CH	We will donate NOK 25 on your behalf to one of the following charities if you participate for at least 7 whole days. Which organization would you like us to donate to?	• Come Back Alive (en organisasjon som gir støtte til medlemmer i de militære styrkene I Ukraina) • Greenpeace Norge • Redd Barna

► Job and life satisfaction

Instruction and Items

Please rate the following statements about your work in general.

JS01 In general, I am satisfied with my job.	Strongly disagree	☐ ☐ ☐ ☐ ☐	Strongly agree
LS01 In general, I am satisfied with my life.	Strongly disagree	☐ ☐ ☐ ☐ ☐	Strongly agree

► HEXACO

Instruction and Items

In the following, you will find a series of statements about you. Please read each statement and decide how much you agree or disagree with that statement:

HX01 I can look at a painting for a long time.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX02 I make sure that things are in the right spot.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX03_R I remain unfriendly to someone who was mean to me.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX04_R Nobody likes talking with me.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX05 I am afraid of feeling pain.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX06 I find it difficult to lie.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX07_R I think science is boring.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX08_R I postpone complicated tasks as long as possible.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX09_R I often express criticism.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX10 I easily approach strangers.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX11_R I worry less than others.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX12_R I would like to know how to make lots of money in a dishonest manner.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX13 I have a lot of imagination.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX14 I work very precisely.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX15 I tend to quickly agree with others.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX16 I like to talk with others.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX17_R I can easily overcome difficulties on my own.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX18_R I want to be famous.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX19 I like people with strange ideas.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX20_R I often do things without really thinking.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX21 Even when I'm treated badly, I remain calm.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX22_R I am seldom cheerful.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
HX23 I have to cry during sad or romantic movies.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree

HX24_R I am entitled to special treatment.	strongly disagree ☐ ☐ ☐ ☐ ☐	strongly agree

Measurement: Morning, before work

DW1 Will you work today?	Yes	No

► PANAS

Instruction and Items

This scale consists of a number of words that describe different feelings and emotions. Read each item and then tick the number from the scale below next to each word. Indicate the extent to which you feel like this right now. Right now I feel …

PN01 Active	Very slightly or not at all ☐ ☐ ☐ ☐ ☐	Extremely
PN02 Interested	Very slightly or not at all ☐ ☐ ☐ ☐ ☐	Extremely
PN03 Excited	Very slightly or not at all ☐ ☐ ☐ ☐ ☐	Extremely
PN04 Strong	Very slightly or not at all ☐ ☐ ☐ ☐ ☐	Extremely
PN05 Inspired	Very slightly or not at all ☐ ☐ ☐ ☐ ☐	Extremely
PN06 Alert	Very slightly or not at all ☐ ☐ ☐ ☐ ☐	Extremely

► Bedtime, wake-up time, awake time, sleep time/ sleep quality

Instruction and Items

The following questions relate to the quality of your last night's sleep. Your answers should be as accurate as possible.

SQ01 How would you rate the quality of your previous night's sleep?	Very bad ☐ ☐ ☐ ☐	Very good
SZ04 How many hours of actual sleep did you get last night? (This may be different than the number of hours you spend in bed.) (in hours and minutes)	Hours and minutes	

► Human Energy

Instruction and Items

How one feels at the moment is often described in terms of the state of charge of a battery, ranging from 'depleted' to 'full of energy'. Please indicate which of the following symbols best describes your current state

► TV time and quality

Instruction and Items

TV is here defined as linear and non-linear TV. Non-linear TV includes videos on social media (TikTok, YouTube, Instagram Reels, etc.) and use of streaming services (Netflix, HBOmax, Viaplay, online TV, etc).

TV1	Did you watch TV last night?		Yes	No
TV3	I enjoyed my program.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
TV4	I found my program boring.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
TV5	I had a good time watching my program.	strongly disagree	☐ ☐ ☐ ☐ ☐	strongly agree
TV6	How long did you watch TV last night? (in hours and minutes)		Hours and minutes	

► TV content

Instruction and Items

Please tell us about what you watched last night: Indicate the name of the program(s), the genre, and how you watched it. You can tick all genres that apply. If you watched more than one programs, please refer to the program that you <u>mainly</u> watched last night.

TC1	1st program: Name of the programme	_____
TC2	1st program: Genre	☐ Action ☐ Adventure ☐ Adult ☐ Biopic ☐ Comedy ☐ Crime ☐ Documentary ☐ Drama ☐ Fantasy ☐ Martial Arts ☐ Music ☐ News ☐ Horror ☐ Roadmovie ☐ Romance ☐ Science Fiction ☐ Social media ☐ Sport ☐ Thriller ☐ War ☐ Western ☐ Annet, det er____

TC3	1st program: TV or online	TV	Online
TC4	How long did you watch this program last night? (in hours and minutes)	Hours and minutes	

► Bechdel-Wallace Test

Instruction and Items

Concerning the program you watched last night, could you please answer the next question(s).

BW01	Did a/the program have at least two women in it?	Yes	No

BW02	Did these women talk to each other?	Yes	No
BW03	Did these women talk to each other about something besides a man?	Yes	No

Measurement: at the end of the workday

DW2	Did you work today?	Yes	No

► Job and life satisfaction

Instruction and Items

Please rate the following statements about your work in the last few hours.

JS01 Today, I am satisfied with my job.	Strongly disagree	☐ ☐ ☐ ☐ ☐	Strongly agree
LS01 Today, I am satisfied with my life.	Strongly disagree	☐ ☐ ☐ ☐ ☐	Strongly agree

► Support seeking and reactive helping

Instruction and Items

Please indicate whether you had the following experiences with co-workers today. We are also interested in the gender of your co-workers (you can tick all that apply) and how you reacted.

SE01	Today, a co-worker or co-workers asked for my help with difficult assignments.	Yes	No
GE01	Gender of this co-worker/these co-workers	☐ Male ☐ Female ☐ Non-binary ☐ Other ☐ Mixed group of co-workers	

RH04	I helped co-workers who asked for my help with difficult assignments.	Strongly disagree ☐ ☐ ☐ ☐ ☐	Strongly agree

SE02	Today, a co-worker or co-workers asked for my help with heavy workloads.	Yes	No
GE02	Gender of this co-worker/these co-workers	☐ Male ☐ Female ☐ Non-binary ☐ Other ☐ Mixed group of co-workers	

RH05	I helped co-workers who asked for my help with heavy workloads.	Strongly disagree ☐ ☐ ☐ ☐ ☐	Strongly agree

SE03	Today, a co-worker or co-workers asked for my help with work-related problems.	Yes	No
GE03	Gender of this co-worker/these co-workers	☐ Male ☐ Female ☐ Non-binary ☐ Other ☐ Mixed group	

RH06	I went out of my way to help co-workers who asked for my help with work-related problems.	Strongly disagree ☐ ☐ ☐ ☐ ☐	Strongly agree