

**Relationship between work-family conflict, well-being, perceived productivity, and the  
mediating role of leisure crafting**

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### **Abstract**

Leisure crafting means proactively engaging in leisure activities. Leisure crafting positively correlates with life satisfaction and perceived work productivity in employees. However, this has not been studied much in teleworkers. The home environment, including having a family at home, can lead to a conflict with work demands resulting in work-family conflict. Hence, this study investigates the negative relationship between work-family conflict to life satisfaction and perceived work productivity. Furthermore, the mediation role of leisure crafting is investigated. Conducting a Tobit analysis, the relationship between work-family conflict and life satisfaction ( $Z = -1.779$ ;  $p = 0.075$ ) and perceived work productivity ( $Z = -0.48$ ;  $p = 0.63$ ) was non-significant. Because of that, no mediation analysis was done, but an exploratory analysis of the relationship between leisure crafting and life satisfaction and perceived work productivity was done. This did not yield a significant result as well. To conclude, there was no significant relationship found between these variables. Therefore possible other influences and explanations are discussed. Furthermore, strong points, theoretical and practical implications, limitations, and strong points are examined.

*Keywords:* leisure crafting, work-family conflict, life satisfaction, perceived work productivity

## **Relationship between work-family conflict, well-being, perceived productivity, and the mediating role of leisure crafting**

Telework has experienced an increase in popularity since it was first introduced in the 1970s due to many different factors, such as the Covid-19 pandemic or technology that makes it possible to work from home (Castrillon, 2021; Messenger & Gschwind, 2016). Nearly everyone had to work from home during the pandemic to limit the spread of the coronavirus, but now companies like Apple or Tesla want to return to employees working on-site (Hsu, 2022; Sherman, 2022). However, it is estimated that more than two-thirds of the workforce will engage in telework by 2025 as companies like Facebook and Twitter reveal plans to have employees work remotely (Castrillon, 2021). Employees got accustomed to teleworking and now prefer to telework for several different reasons, and telework could also be a possibility to foster inclusion in the workplace by offering remote work (Marsh, 2021; Ruh, 2022).

The term telecommuting, working in a regional center or at home using information and communication technologies (ICTs), was introduced in 1973 and was seen as something that could potentially solve social or organizational issues (Nilles, 1988). This development in the working style was due to the decentralization of companies no longer solely located in the central business district, which meant workers now needed to find affordable transportation to the company's location (Nilles, 1975). Nowadays, telework means working from any place outside of the workplace while connecting to the workplace using ICTs (Bailey & Kurland, 2002). Following this definition, a teleworker can work from anywhere in the world. There are many definitions of working outside the office, including other locations and differences in hours worked at the office or outside the office (Allen et al., 2015). In this study, telework means people work at least some hours at home per week.

### **Telework Paradox**

The telework paradox means that telework has advantages and disadvantages, for example, through differences in connectivity, meaning how connected workers are or how strict the worker's boundaries are (Boell et al., 2016; Leonardi et al., 2010). Telework can increase the flexibility as well as the autonomy of workers, which can lead to higher job satisfaction or work-life balance, for example, and telework can also support the productivity of workers (Allen et al., 2015; Baruch, 2000; Ganjendran & Harrison, 2007). Well-being can be impacted positively through higher flexibility or higher autonomy, but also negatively through social isolation or longer working hours as there is less structure and higher accessibility at home (Grant et al., 2013). Nevertheless, telework also has drawbacks like the difficulty in assessing the work of employees, fewer social interactions due to remote work, or even more interruptions, a heightened work-home conflict as well as not having strict boundaries between the work and life or family domain (Boell et al., 2016, Mann & Holdsworth, 2003). This conflict between family and work that teleworkers experience can impact their productivity and well-being (Ganjendran & Harrison, 2007; Lu et al., 2006). When considering this conflict and setting stricter boundaries, leisure crafting could help set such boundaries and decrease the work-family conflict. Therefore, this study assesses the relationship between work-family conflict and well-being as well as work productivity in teleworkers. Furthermore, to address the research gap, it will be investigated how the concept of leisure crafting could mediate this relationship.

### **Work-family conflict**

The work-family conflict is an inter-role conflict meaning that someone cannot fulfill their duties or chores in one domain due to obligations in another domain (Greenhaus et al., 1985). The conflict can be further categorized into three subcategories, namely strain-based conflict, which means spillover in a domain due to not fulfilling a role in another domain, time-based work-family conflict, issues with the division of time between both domains, and

lastly, behavior-based work-home conflict, struggling to change behaviors between roles (Simon et al., 2014). When working from home, there can be difficulties as the work and family domains are separate, which means high flexibility between the roles is needed to omit conflict between them (Allen et al., 2015; Clark, 2000). Furthermore, a person's family and work role include particular needs that must be fulfilled to be satisfied (De Bloom et al., 2020). Hence conflict can quickly arise when working from home due to one domain interrupting the other, like family interrupting work and vice versa, as the conflict is bidirectional, which means there is a family-to-work conflict, work-to-family conflict, and a total work-family conflict combining these two (Delanoëje et al., 2019). It can be challenging to set and adhere to clear boundaries when working at home as there is, for example, no space separation compared to when working at the office.

Telework can improve work-family conflict and lead to a good work-family balance through higher flexibility and autonomy, which can lead to fulfilling the needs of both roles (Delanoëje et al., 2019). However, telework can also lead to higher work-family conflict due to working overtime as there is no clear boundary between the work and home domain, which can be increase even more by perceiving the work is highly demanding (Abendroth & Reinmann, 2018). This negatively impacts well-being because employees cannot fulfill the needs of their role to satisfaction (De Bloom et al., 2020; Lu et al., 2006). Furthermore, work-family has a negative association with work productivity as well as work engagement (Galanti et al., 2021). As this study was done during the pandemic, there might have been other outside influences. However, from the job demands resource model, it can be derived that the work-family conflict has an impact on job demands and can heighten those through the conflict, meaning that there are fewer job resources and a higher strain, which both possibly affect the organizational outcome as well as productivity negatively (Bakker & Demerouti, 2007).

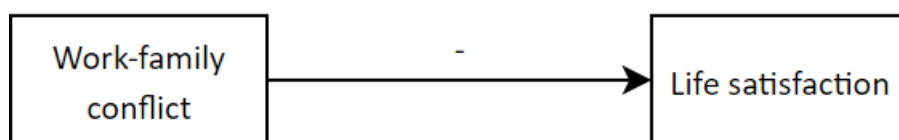
Therefore, the focus of this study will be on the relationship between work-family conflict and well-being as well as work productivity.

### **Life satisfaction**

As stated before, work-family conflict can impact workers' well-being due to blurry boundaries, for example. Subjective well-being has three different components: positive or negative affect, which includes people's mood and emotions, and life satisfaction, which is a cognitive component about how someone judges their life satisfaction overall (Busseri & Sadava, 2011; Diener et al., 1999). Life satisfaction is one of the critical components of subjective well-being and is negatively influenced by the poor quality of work-life and non-work life (Erdogan et al., 2012). This poor quality in both domains could be elicited by the work-family conflict as both domains cannot fully be fulfilled and therefore are dissatisfied, as stated above. Furthermore, other studies found a negative relationship between work-family conflict and life satisfaction, with family-to-work conflict having a less strong negative relationship in non-teleworkers (Adams et al., 1996; Ernst Kossek & Ozeki, 1998). Therefore, it can be hypothesized that there is a negative relationship between work-family conflict and life satisfaction for teleworkers (Hypothesis 1a; Figure 1).

### **Figure 1**

*Display of Hypothesis 1a*



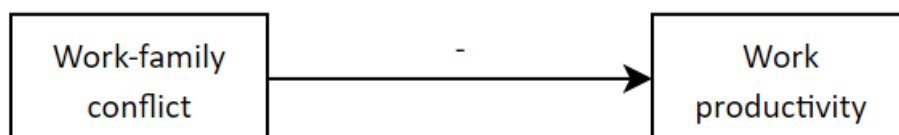
### **Work productivity**

Teleworkers seem to have higher work productivity which could be due to them working more effectively at home but also due to working longer hours (Bailey &

Kurland, 2002). The high work productivity could also be due to fewer disruptions of the work, no need to spend time on the commute, a flexible work schedule, and an environment to accommodate needs (Gajendran & Harrison, 2007). Even though teleworking influences work productivity positively, it is negatively influenced by work-family conflict due to the high family demands that need to be taken care of next to the job demands (Ahmad, 2008; Kossek & Ozeki, 1999). This can also be seen as stated above in the Job demands resource model as, through the conflict, higher demands lead to fewer resources and potentially poor work productivity (Bakker & Demerouti, 2007). Furthermore, the benefits of teleworking, like fewer disruptions or a flexible work schedule as well as the work environment, can be impacted by family demands. Therefore, it can be hypothesized that work-family conflict is negatively associated with work productivity (Hypothesis 1b; Figure 2).

## Figure 2

*Display of Hypothesis 1b*



## Leisure crafting

A concept that could mediate those relationships is Leisure crafting. Leisure crafting means proactively engaging in activities that aim for human relations, personal development, learning, and goal setting by reshaping boundaries in the leisure domain (Petrou & Bakker, 2016). Crafting occurs when there is a discrepancy between one's needs, and to overcome this discrepancy, crafting is used to achieve the goal of need satisfaction (De Bloom, 2020). Hence as there is a conflict between the work and family role needs, people might engage in

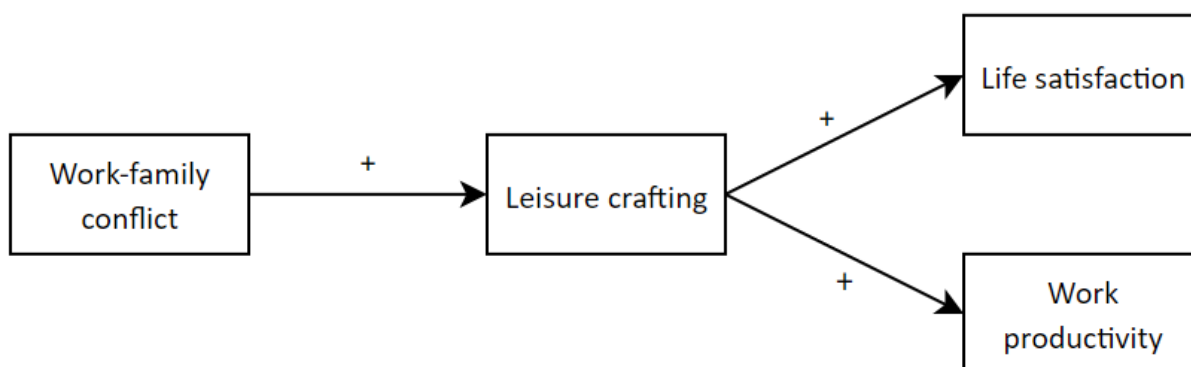


crafting to overcome this discrepancy. Similar results can be found in a study in which participants engaged in leisure crafting due to high job demands (Petrou & Bakker, 2016).

Leisure crafting also has a positive relationship with life satisfaction and work productivity. Although leisure crafting does not directly concern the work or family domain, crafting in the leisure domain can influence others. This is due to spillover, meaning experiences in the leisure domain without effort spill over into another domain, and compensation through which unsatisfied needs in a domain can be satisfied in another domain, here leisure domain (De Bloom, 2020). Furthermore, when workers engage in leisure crafting, they establish better boundaries between their work and home environments (Abdel et al., 2021). Therefore there is less need discrepancy between domains. It can be hypothesized that leisure crafting mediates the relationship between work-family conflict and life satisfaction and work productivity (Hypothesis 2; Figure 3).

### Figure 3

*Display of Hypothesis 2*



### Summary, Relevance and Hypotheses

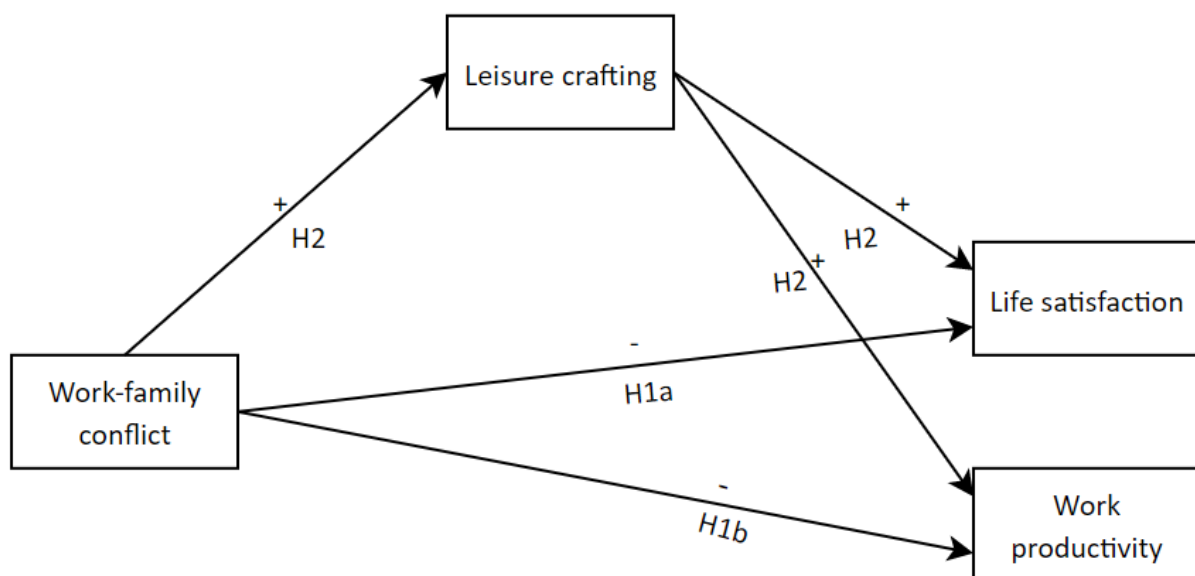
To sum up, this study addresses the research gap as it investigates the relationship of work-family conflict with life satisfaction and work productivity in teleworkers. This is highly important as telework is more widely used and will spread further over the next years. Hence,

research should also be done on the disadvantages in order to design interventions to possibly decrease negative effects. Furthermore, the not much-researched concept of leisure crafting is included in the model as a potential mediator. Through that, leisure crafting can be further connected with other concepts and hence a better understanding of the concept can be achieved. Leisure crafting could potentially decrease negative effects of telework in this constellation.

I expect work-family conflict to be negatively correlated with life satisfaction (Hypothesis 1a) and work productivity (Hypothesis 1b). Furthermore, it will be investigated if leisure crafting is a potential mediator (Hypothesis 2). This leads to the following proposed model, including all hypotheses (Figure 4).

**Figure 4**

*Display of proposed research model*



*Note.* Hypothesis 1a (H1a); Hypothesis 1b (H1b), Hypothesis 2 (H2)

## Method

### Ethics statement

Before the data collection, the study was approved by the Ethics Committee of Psychology at the Faculty of Behavioural and Social Sciences at the University of Groningen in the Netherlands.

### **Participants**

Data were collected from 108 participants in total through snowballing, meaning it is a convenience sample. Participants needed to work at least 20 hours on average per week and at least some hours at home. Participants needed to be fluent in English, answer all required questions and answer the validation question. This led to a total sample of 61 participants, of which 31 (50.8%) indicated being men and 30 (49.2%) indicated being women. The most prevalent age groups in the range from 18 to 74 were people from 25 to 34 years old (31.1%) as well as people aged 45 to 54 (31.1%). Furthermore, 42 (68.9%) participants currently live in Germany, 7 (11.5%) live in the Netherlands, and 12 (19.6%) live in other countries. Most participants, 41 (67.2%), work in upper-level white-collar jobs. The participants worked around 40 hours on average ( $M = 40.1$ ), of which they worked on average about 30 hours from home ( $M = 28.5$ ), which leads to them working on average 70 percent (72.3%) from home.

### **Materials and Instruments**

To ensure the questionnaire we developed has high quality, we pilot-tested it with a small, diverse sample of participants who were not eligible to participate in the study. A validation question was included stating, please click on "strongly disagree", to ensure the data is valid. As this study was part of a group project, the questionnaire also included scales to measure need satisfaction, psychological detachment, and meaning. Additionally, it had questions on demographics, teleworking, and the variables below that are included in this study.

#### ***Work-family conflict***

The independent variable work-family conflict was measured on a bidirectional 10-item scale by Haslam et al. (2014), which includes five for work-to-family conflict items and five for family-to-work conflict items. Each item was measured on a 7-point Likert scale and included an option "not applicable" (Appendix A). The scale yielded good internal consistency as Cronbach's alpha ( $\alpha = 0.844$ ) was excellent (Gliem & Gliem, 2003). Participants reported a medium work to family conflict ( $M = 3.1$ ,  $SD = 1.3$ ), medium family to work conflict ( $M = 2.3$ ,  $SD = 1.4$ ) as well as an overall medium work-family conflict ( $M = 2.8$ ,  $SD = 1.2$ ).

### ***Life satisfaction***

The first dependent variable, life satisfaction, was measured on a 5-item scale by Diener et al. (1985). Participants had to indicate their responses on a 7-point Likert scale (Appendix A). The scale yielded good internal consistency as Cronbach's alpha ( $\alpha = 0.875$ ) was excellent (Gliem & Gliem, 2003) Participants reported a high overall life satisfaction ( $M = 5.1$ ,  $SD = 1.1$ ).

### ***Perceived work productivity***

The second dependent variable, perceived work productivity, was measured on a 4-item scale by Chang et al. (2020) for self-perceived work productivity. Participants had to indicate their responses on a 7-point Likert scale (Appendix A). The scale yielded acceptable internal consistency as Cronbach's alpha ( $\alpha = 0.619$ ) is sufficient (Gliem & Gliem, 2003). Participants reported a high overall perceived work productivity ( $M = 5.4$ ,  $SD = 1.1$ ).

### ***Leisure crafting***

The mediating variable, perceived leisure crafting, was measured on a 9-item scale by Petrou and Bakker (2016). Participants had to indicate their responses on a 5-point Likert scale. These items can be found in Appendix A. The scale yielded good internal consistency

as Cronbach's alpha ( $\alpha = 0.843$ ) was excellent (Gliem & Gliem, 2003). Participants reported medium overall perceived leisure crafting ( $M = 3.8$ ,  $SD = 0.6$ ).

## **Procedure**

### ***Data collection***

Data was collected via sending the link to the survey on Qualtrics to possible participants using our network as well as promoting it through social media channels like LinkedIn or Facebook. Participants were also asked to pass it on to people they thought could fit the criteria. Data collection lasted from the 3<sup>rd</sup> of May until the 27<sup>th</sup> of May. Participants were not compensated for their voluntary participation. The questionnaire was designed to take about 15 minutes to complete. When opening the link to Qualtrics, participants were informed that they could withdraw from the study at any point, that participation is voluntary, and that their data would be erased after May 2032. Only if the participants gave their consent (Appendix B) they were asked to fill out questions including questions about their telework, variables included in the study, and demographics. Lastly, they could fill in their mail addresses to receive the study results.

### ***Analytic strategy***

First, as all further analyses, demographics and descriptives are analyzed with SPSS version 28. Secondly, to analyze the data of this cross-sectional correlational study, regression analyses are used. Simple linear regression is used for Hypothesis 1a and Hypothesis 1b, including assumption checks of linearity, independence of observations, homoscedasticity, and normality. For Hypothesis 2, an analysis using Process is done to estimate the mediating role of leisure crafting. This also includes the relevant assumption checks such as normality, linearity, independence of errors, and homogeneity of error variance.

## **Results**

Firstly, explorative analysis of the data was done to check for any abnormalities, but none were found. Following that, the reliability and the composite mean of each scale were calculated. The scale of leisure crafting was then standardized to a 7-point Likert scale to compare it with the other scales. After that, the descriptives for all variables used as well as correlations, were calculated (Table 1). Perceived work productivity ( $M = 5.4$ ,  $SD = 1.1$ ), as well as life satisfaction ( $M = 5.1$ ,  $SD = 1.1$ ), have a high overall mean. Looking at the correlations only the correlations between the work-family conflict and the subsequent subscales are significant, namely work-family conflict with family-to-work conflict ( $r = 0.846$ ,  $p < 0.01$ ), work-family conflict with work-to-family conflict ( $r = 0.855$ ,  $p < 0.01$ ) and family-to-work conflict and work-to-family conflict ( $r = 0.460$ ,  $p < 0.01$ )

**Table 1**

*Descriptives*

|             | n  | M    | SD   | 1     | 2      | 3      | 4      | 5     | 6 |
|-------------|----|------|------|-------|--------|--------|--------|-------|---|
| 1. LC stand | 61 | 2.67 | 0.50 | -     |        |        |        |       |   |
| 2. WF       | 61 | 2.77 | 1.18 | -.172 | -      |        |        |       |   |
| 3. FTW      | 61 | 2.35 | 1.35 | -.058 | .846** | -      |        |       |   |
| 4. WTF      | 61 | 3.14 | 1.30 | -.248 | .855** | .460** | -      |       |   |
| 5. LS       | 61 | 5.12 | 1.10 | -.002 | -.165  | -.190  | -.131  | -     |   |
| 6. PWP      | 61 | 5.43 | 1.09 | 0.154 | -0.158 | -0.037 | -0.117 | 0.176 | - |

*Note.* All scales were measured on a 7-point Likert scale, with one being equal to strongly disagree and seven being equal to strongly agree. The abbreviations are as follows: Leisure crafting standardized (LC stand); Work-family conflict (WF); Family-to-work conflict (FTW), Work-to-family conflict (WTF); Life satisfaction (LS); Perceived work productivity (PWP)

\*\* Correlation is significant at the 0.01 level (2-tailed).

For Hypothesis 1a and Hypothesis 1b using linear regression, the assumption of measuring two continuous variables held up. In contrast, the assumption of linearity was violated as a linearity check yielded a non-significant effect (Table 2) for work-family conflict with life satisfaction ( $p = 0.144$ ) and with perceived work productivity ( $p = 0.426$ ). This linearity test was done by comparing means using ANOVA. No significant outliers were found for life satisfaction (Plot 1) or perceived work productivity (Plot 2). Independence of observation is fulfilled as the Durbin-Watson for life satisfaction (Table 3) is acceptable ( $W = 2.31$ ), and for perceived work productivity (Table 4), it is good as well ( $W = 2.08$ ). The assumptions of approximately normal distribution of residuals (Plot 3) and homoscedasticity for life satisfaction (Plot 4) were fulfilled. These assumptions were also fulfilled for perceived work productivity (Plot 5; Plot 6). As linearity was violated, linear regression could not be used as well as ceiling effect for both dependent variables is suspected (Plot 7; Plot 8), so instead, a Tobit analysis was run (Cunillera, 2014).

Before running a Tobit analysis, Cook's distance was calculated for both life satisfaction and perceived work productivity, after which outliers were deleted for life satisfaction (Plot 7) and perceived work productivity (Plot 8). Both assumptions of Tobit, namely normality of residuals for life satisfaction (Plot 9) as well as homoscedasticity of residuals for life satisfaction (Plot 10), were fulfilled (Garson, 2012; Michalos, 2014; Tranmer & Elliot, 2008). This was also the case for perceived work productivity (Plot 11; Plot 12). The Tobit analysis (Table 5) yielded a non-significant relationship between work-family conflict and life satisfaction ( $Z = -1.78$ ;  $p = 0.075$ ). The relationship between work-family conflict and perceived work productivity (Table 6) was also non-significant ( $Z = -0.48$ ;  $p = 0.634$ ).

**Table 5***Tobit analysis of work-family conflict and life satisfaction*

|                      | Coefficient | Standard error | Z-value | Significance |
|----------------------|-------------|----------------|---------|--------------|
| (Intercept)          | 5.833       | 0.322          | 18.099  | < 0.001      |
| Work-family conflict | -0.218      | 0.123          | -1.779  | 0.075        |
| Log (scale)          | -0.281      | 0.100          | -2.805  | 0.005        |

*Note.* Lower bound: 0, Upper bound: None

```
tobit(formula = COM_LS ~ COM_total_WF, left = 0, right = Inf, dist = "gaussian", data =
dta, na.action = na.exclude)
```

Scale: 0.7554

Residual d.f.: 47

Log likelihood: -56.920 D.f.: 3

Wald statistic: 3.166 D.f.: 1

**Table 6***Tobit analysis of work-family conflict and perceived work productivity*

|                      | Coefficient | Standard error | Z-value | Significance |
|----------------------|-------------|----------------|---------|--------------|
| (Intercept)          | 5.750       | 0.399          | 14.397  | < 0.001      |
| Work-family conflict | -0.072      | 0.152          | -0.477  | 0.634        |
| Log (scale)          | -0.066      | 0.100          | -0.661  | 0.508        |

*Note.* Lower bound: 0, Upper bound: None

```
tobit(formula = COM_WP ~ COM_total_WF, left = 0, right = Inf, dist = "gaussian", data =
dta, na.action = na.exclude)
```

Scale: 0.9360

Residual d.f.: 47



Log likelihood: -67.641 D.f.: 3

Wald statistic: 0.227 D.f.: 1

As both relationships were non-significant, no mediation analysis was done because for running a mediation analysis, a significant relationship between the independent and dependent variables is needed (Baron & Kenny, 1986). This means no evidence for Hypothesis 1a and Hypothesis 1b could be found, leading to no evidence for Hypothesis 2 as well.

### **Exploratory analysis**

An exploratory analysis was conducted to investigate if leisure crafting and life satisfaction, as well as perceived work productivity, are correlated, as stated in the introduction. This was done to see if leisure crafting correlates with the dependent variables instead of being the mediating variable. Therefore, a linear regression analysis including the appropriate assumption checks was conducted.

The assumption of measuring two continuous variables held, but linearity was violated for leisure crafting with life satisfaction ( $p = 0.918$ ) and perceived work productivity ( $p = 0.058$ ) as both were not significant (Table 7). This linearity test was done by comparing means using ANOVA. The Durbin-Watson (Table 8) for life satisfaction ( $W = 2.33$ ) is good as well as for perceived work productivity (Table 9) the Durbin-Watson is good ( $W = 2.17$ ) and hence independence of observations is fulfilled. Furthermore, for life satisfaction, there is evidence of normally distributed residuals (Plot 13) as well as homoscedasticity (Plot 14), as well as no significant outliers are present (Plot 15). This is also the case for perceived work productivity (Plot 16; Plot 17; Plot 18). However, as linearity was violated, linear regression cannot be done, and a TOBIT analysis is needed.

Cook's distance was calculated to delete outliers in the data for life satisfaction (Plot 19) and perceived work productivity (Plot 20). Both assumptions for the TOBIT analysis, namely homoscedasticity of residuals for life satisfaction (Plot 21) and perceived work productivity (Plot 23) are fulfilled (Garson, 2012). Normality of residuals for life satisfaction (Plot 22) and perceived work productivity (Plot 24) were fulfilled as well (Michalos, 2014; Tranmer & Elliot, 2008). The Tobit analysis (Table 10) led to a non-significant result for leisure crafting and life satisfaction ( $Z = 0.29$ ;  $p = 0.769$ ) and also (Table 11) to a non-significant result between leisure crafting and perceived work productivity ( $Z = 0.58$ ;  $p = 0.562$ ). Therefore, there is no evidence for a relationship between leisure crafting and the dependent variables of life satisfaction and perceived work productivity.

**Table 10**

*Tobit analysis of leisure crafting standardized and life satisfaction*

|                               | Coefficient | Standard error | Z-value | Significance |
|-------------------------------|-------------|----------------|---------|--------------|
| (Intercept)                   | 5.113       | 0.736          | 6.951   | < 0.001      |
| Leisure crafting standardized | 0.040       | 0.135          | 0.293   | 0.769        |
| Log (scale)                   | -0.239      | 0.098          | -2.433  | 0.015        |

*Note.* Lower bound: 0, Upper bound: None

```
tobit(formula = COM_LS ~ Stan_COM_LC, left = 0, right = Inf, dist = "gaussian", data = dta,
na.action = na.exclude)
```

Scale: 0.7878

Residual d.f.: 49

Log likelihood: -61.379 D.f.: 3

Wald statistic: 0.086 D.f.: 1

**Table 11**

Tobit analysis of leisure crafting standardized and perceived work productivity

|                               | Coefficient | Standard error | Z-value | Significance |
|-------------------------------|-------------|----------------|---------|--------------|
| (Intercept)                   | 5.136       | 0.794          | 6.465   | < 0.001      |
| Leisure crafting standardized | 0.085       | 0.146          | 0.580   | 0.562        |
| Log (scale)                   | -0.162      | 0.098          | -1.648  | 0.099        |

Note. Lower bound: 0, Upper bound: None

```
tobit(formula = COM_WP ~ Stan_COM_LC, left = 0, right = Inf, dist = "gaussian", data =
dta, na.action = na.exclude)
```

Scale: 0.8507

Residual d.f.: 49

Log likelihood: -65.379 D.f.: 3

Wald statistic: 0.336 D.f.: 1

## Discussion

This research aims to investigate the role of leisure crafting as a mediator. As this variable has not been thoroughly tested already, there could be high potential to explain some relationships more in-depth when leisure crafting is included as a mediator. The literature shows a connection between higher work-family conflict, lower life satisfaction, and lower perceived work productivity in teleworkers. As leisure crafting is also connected to both dependent variables and work-family conflict, it was proposed that leisure crafting could explain the relationship further. Adding to that, leisure crafting could decrease the negative effects of telework in this context.

In this study, no evidence for Hypothesis 1a and Hypothesis 1b was found, which is not in line with the literature as stated in the introduction. As in theory there is a link between

work-family conflict, life satisfaction, and perceived work productivity. Following that, no mediation analysis was conducted; hence, there was no evidence found for Hypothesis 2. The exploratory analysis also yielded no significant result for the relationship between leisure crafting with life satisfaction and with perceived work productivity. Therefore, other possible explanations and theories that have an impact on these relationships will be discussed. Furthermore theoretical and practical implications, strengths and limitations of the study will be stated.

### **Theoretical and practical implications**

Even though no significant results were found, theoretical and practical implications can be derived from the results. As mentioned before, this study shows evidence not in line with the proposed relationships. Even though it is small-scale study it can help to decrease the publication bias. This is the case as the publication bias often causes only significant results to get published compared to the non-significant results (Ferguson & Heene, 2012).

The non-significant relationship between leisure crafting and life satisfaction could be due to the positive influences on life satisfaction of telework (Grant et al., 2013), as well as that needs are already satisfied in other domains like work or family domain and through spillover or compensation heighten life satisfaction (De Bloom et al., 2020). Another implication is that leisure crafting might affect other components of well-being more than life satisfaction. Emotional exhaustion was connected to leisure crafting, and there was a relationship between both (Abdel Hadi et al., 2021). Emotional exhaustion is part of the negative affect component of well-being and could be more affected than life satisfaction as a component of subjective well-being (Busseri, 2018). Furthermore active and passive leisure crafting might affect life satisfaction and perceived work productivity differently (Medrano & Trógolo, 2018).

However, life satisfaction or subjective well-being of teleworkers could already be higher as the study could show that their basic psychologic needs are already satisfied, and hence there is less discomfort (Ryan and Deci, 2000). This could be especially the case for the need of autonomy as teleworking includes more autonomy than an office job. Through spillover and compensation, this could also spill to other areas of life and lead to satisfaction there as well (De Bloom et al., 2020). Other positive influences of teleworking could also already heighten life satisfaction (Gajendran & Harrison, 2007). Hence other outside factors should be looked and if necessary controlled for.

The work-family conflict of participants in this study was low, which could be one explanation for not finding a significant result. Furthermore, the advantages of telework on work-family conflict like a better balance between both could have led to this result (Delanoetje et al., 2019). Adding to that if participants did not perceive their job as highly demanding work-family conflict is not heightened (Abendroth & Reinmann, 2018).

Practical implications could be derived from the high life satisfaction and the high perceived work productivity of teleworkers. Therefore companies and employers could think about designing more workplaces in a way that allows for teleworking instead of designing interventions to increase life satisfaction and perceived work productivity of teleworkers.

### **Strength, Limitations, and future directions**

The strong points of this study are adding to the literature on leisure crafting, especially the leisure crafting of teleworkers. Many of the concepts were studied a lot in employees working at the office but not in teleworkers. All scales used in the study have been used before and had good internal consistency.

A limitation of this study is the small sample size compared to other studies on the topic. A larger sample would have been needed to have good power to detect an effect (Cohen, 1992). So further investigation with a larger sample size could be helpful to either

find an effect or more robust evidence that there is no effect. Potentially, there could have been already studies with no significant result that never got published because of the publication crisis, so a non-significant result could also add to evidence of the connection between the variables (Ferguson & Heene, 2012). Looking at the sample, most people work in white-collar jobs, which means they probably have high socioeconomic status. This means that our model is most likely not representative of the population, as well as socioeconomic status is a predictor of life satisfaction (Edwards & Klemmack, 1973).

As a survey and self-reported data were used, results could have been influenced by several common method biases. Social desirability, meaning responding in a socially desirable way, was not controlled for and hence could have played a role, which could have reduced the validity of the data (Van de Mortel, 2008). As it is a cross-sectional study, only one point in time is measured, which might not be representative of the overall situation of someone. Another underlying issue might be that people are already engaging in leisure crafting for a while but do not fully understand the concept of leisure crafting. This can lead to smaller leisure crafting scores than the real score. This could be the case in this study judging by the comments that many participants engage in leisure activities (Appendix C).

## **Conclusion**

To conclude, even though no significant results for relationships between the variables were found some interferences can be made. The life satisfaction and perceived work productivity of certain groups of employees might already be high and do not need any further increase. Adding to that, a better definition of leisure crafting might be required for further studies and a larger sample size. However, as life satisfaction and work productivity for teleworkers are high, why do we still work in an office and not from a nice place we like.

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## Appendix A

### Questionnaire of variables

#### Start of the Blocks:

The following statements assess leisure crafting. Leisure crafting can be defined as actively engaging in leisure activities targeted at goal setting, human connection, learning and personal development.

Example: actively playing soccer with the intention to connect to others.

On the other side, just watching TV or listening to music is not considered leisure crafting.

---

I try to build relationships through leisure crafting.

- Not at all (1)
- Not really (2)
- Undecided (3)
- Somewhat (4)
- Very much (5)

---

I try to find challenging activities outside of work.

- Not at all (1)
  - Not really (2)
  - Undecided (3)
  - Somewhat (4)
  - Very much (5)
- 

I try to increase my skills through leisure activities.

- Not at all (1)
- Not really (2)
- Undecided (3)
- Somewhat (4)
- Very much (5)

---

I try to increase my learning experiences through leisure activities.

- Not at all (1)
  - Not really (2)
  - Undecided (3)
  - Somewhat (4)
  - Very much (5)
- 

I try to set myself new goals to achieve through leisure activities.

- Not at all (1)
- Not really (2)
- Undecided (3)
- Somewhat (4)
- Very much (5)



---

Through my leisure activities, I look for inspiration from others.

- Not at all (1)
  - Not really (2)
  - Undecided (3)
  - Somewhat (4)
  - Very much (5)
- 

Through my leisure activities, I try to obtain novel experiences.

- Not at all (1)
- Not really (2)
- Undecided (3)
- Somewhat (4)
- Very much (5)

---

My leisure time is a chance for me to grow and develop.

- Not at all (1)
  - Not really (2)
  - Undecided (3)
  - Somewhat (4)
  - Very much (5)
- 

I look for new experiences through leisure activities to keep myself mentally stimulated.

- Not at all (1)
- Not really (2)
- Undecided (3)
- Somewhat (4)
- Very much (5)

---

Would you like to specify or add what leisure activities you engage in?

---

---

How often do you engage in leisure crafting each week?

---

---

Under what circumstances do you usually engage in leisure crafting?

---

**End of the blocks:**

---

**Start of the block: Life satisfaction (Diener et al., 1985)**

The following statements assess life satisfaction. Life satisfaction refers to how satisfied you are with your life in general.

---

In most ways my life is close to ideal.

- Strongly disagree (1)
  - Disagree (2)
  - Slightly disagree (3)
  - Neither agree nor disagree (4)
  - Slightly agree (5)
  - Agree (6)
  - Strongly agree (7)
-

The conditions of my life are excellent.

- Strongly disagree (1)
  - Disagree (2)
  - Slightly disagree (3)
  - Neither agree nor disagree (4)
  - Slightly agree (5)
  - Agree (6)
  - Strongly agree (7)
-

I am satisfied with my life.

- Strongly disagree (1)
  - Disagree (2)
  - Slightly disagree (3)
  - Neither agree nor disagree (4)
  - Slightly agree (5)
  - Agree (6)
  - Strongly agree (7)
-

So far I have gotten the important things I want in life.

- Strongly disagree (1)
  - Disagree (2)
  - Slightly disagree (3)
  - Neither agree nor disagree (4)
  - Slightly agree (5)
  - Agree (6)
  - Strongly agree (7)
-

If I could live my life over, I would change almost nothing.

- Strongly disagree (1)
- Disagree (2)
- Slightly disagree (3)
- Neither agree nor disagree (4)
- Slightly agree (5)
- Agree (6)
- Strongly agree (7)

**End of the block: Life satisfaction (Diener et al., 1985)**

**Start of the block: Perceived Work Productivity**

The following statements assess the work productivity that you perceive. Telecommuting refers to the practice of working from home, using tools such as the internet, email and the telephone.

---



I can work more effectively when I telecommute than when I am at the office.

- Strongly disagree (1)
  - Disagree (2)
  - Somewhat disagree (3)
  - Neither agree nor disagree (4)
  - Somewhat agree (5)
  - Agree (6)
  - Strongly agree (7)
  - Does not apply (8)
-

I can complete more daily tasks when I telecommute than I can when I am at the office.

- Strongly disagree (1)
  - Disagree (2)
  - Somewhat disagree (3)
  - Neither agree nor disagree (4)
  - Somewhat agree (5)
  - Agree (6)
  - Strongly agree (7)
  - Does not apply (8)
-

My telecommuting work environment allows me to complete work in a timely manner.

- Strongly disagree (1)
  - Disagree (2)
  - Somewhat disagree (3)
  - Neither agree nor disagree (4)
  - Somewhat agree (5)
  - Agree (6)
  - Strongly agree (7)
  - Does not apply (8)
-

My company provides sufficient remote office resources.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)
- Does not apply (8)

**End of the block: Perceived Work Productivity**

**Start of the block: Work-Family Conflict**

The following statements assess work-family conflict. Work-family conflict means the conflict of how work can affect your family life or how your family can affect your work.

To select an option you need to move the slider once, even if the slider is already at the option






you want to choose.

---

These questions are about how your work impacts your family life.

|          |           |          |            |
|----------|-----------|----------|------------|
| Strongly | Neither   | Strongly | Not        |
| disagree | agree nor | agree    | applicable |
|          | disagree  |          |            |






1      2      3      4      5      6      7

|   |  |
|---|--|
| My work prevents me spending sufficient quality time with my family. ()   |  |
| There is no time left at the end of the day to do the things I'd like at home (e.g., chores and leisure activities). () |  |
| My family misses out because of my work commitments. ()   |  |
| My work has a negative impact on my family life. ()   |  |
| Working often makes me irritable or short tempered at home. ()  |  |

These questions are about how your family impacts your work.

|          |           |          |            |
|----------|-----------|----------|------------|
| Strongly | Neither   | Strongly | Not        |
| disagree | agree nor | disagree | applicable |
|          | disagree  |          |            |

1    2    3    4    5    6    7

|   |  |
|---|--|
| My work performance suffers because of my personal and family commitments. ()                   |  |
| Family related concerns or responsibilities often distract me at work. ()                       |  |
| If I did not have a family I'd be a better employee ()  |  |
| My family has a negative impact on my day to day work duties. ()                                |  |
| It is difficult to concentrate at work because I am so exhausted by family responsibilities. () |  |

---

Would you like to specify or add something about your work-family conflict?

---

---

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**End of the block: Work-Family Conflict**



## Appendix B

### Informed consent

#### INFORMATION ABOUT THE RESEARCH Version for participants

#### **"Leisure crafting, need satisfaction, work life balance, and subjective well-being"**

PSY-2122-S-0248 **Why do I receive this information?** This study focuses on people who are teleworkers or work from home. We are interested in understanding teleworkers' crafting behavior, need satisfaction and subjective well-being. The research is conducted by Dr. Nanxi Yan and her bachelor thesis students. No external parties are involved. **Do I have to participate in this research?** Participation in the research is voluntary. However, your consent is needed. Therefore, please read this information carefully. Ask all the questions you might have, for example because you do not understand something. Only afterwards you decide if you want to participate. If you decide not to participate, you do not need to explain why, and there will be no negative consequences for you. You have this right at all times, including after you have consented to participate in the research. **Why this research?** The purpose of this study is to understand how engaging in crafting behavior (i.e., making small changes in work and/or life) can help teleworkers to decrease stress and increase well-being. **What do we ask of you during the research?** Before you start the study, you will first be asked for consent to participate. If you consent to participate, you will be asked to fill in some data about your work experiences and work environment, crafting behavior and experiences and subjective well-being. The survey takes about **10-15 minutes** of your time. No compensation will be provided. **What are the consequences of participation?** The benefit is that you get an opportunity to reflect on your own leisure and work experiences, which might help you to obtain more understanding of yourselves and your work and life experiences. No costs, risks or harm is involved in the study. **How will we treat your data?** The data will be used to write bachelor thesis and academic publications. The

data will be collected and analyzed by Dr. Nanxi Yan and her bachelor thesis students. No sensitive data is collected. Your data will be stored on a secured cloud-based system provided by the university of the researchers for 10 years (University of Groningen). Your responses (in combination with your name and email address) are considered personal data. Participants have the right to access, rectification, and erasure of their personal data. You can do so and also obtain a copy of personal data by sending an email to Dr. Nanxi Yan. No sensitive (personal data) will be processed as they will be removed and replaced by a personal identification number. The lists that can match participants' personal information and identification number will be saved in Dr. Nanxi Yan's password protected computers and will be deleted once the data collection is done or study reports have been sent out to those who needed it. To make science more transparent and reproducible, it has become common practice to make data publicly available. In line with this, we will upload the anonymized data sets to an open data repository ([www.osf.io](http://www.osf.io)). Note that we will take all possible measures to ensure that your privacy is protected. **What else do you need to know?** You may always ask questions about the research: now, during the research, and after the end of the research. You can do so by speaking with Dr. Nanxi Yan by emailing ([n.yan@rug.nl](mailto:n.yan@rug.nl)). Do you have questions/concerns about your rights as a research participant or about the conduct of the research? You may also contact the Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen: [ec-bss@rug.nl](mailto:ec-bss@rug.nl). Do you have questions or concerns regarding the handling of your personal data? You may also contact the University of Groningen Data Protection Officer: [privacy@rug.nl](mailto:privacy@rug.nl). As a research participant, you have the right to a copy of this research information.

---

I give my consent to participate in this study.

Yes (1)

No (2)

## Appendix C

### Comments of participants on their leisure activities

- work events, work gatherings, meeting with new people
- playing football, jogging, stock market, playing tennis
- Working out, reading , meditating (not sure if that counts), learning about financial markets and crypto, learning maths, learning card tricks
- Reading, fitness, chairing Diversity and inclusion board
- Yoga, Walking, Hiking, mountain biking, skiing, swimming
- Climbing, swimming, cycling
- Hiking, cycling, eating out, skiing
- swimming, cycle
- fitness, running
- riflewoman and coach and yoga teacher
- Crochet
- Football Club
- No
- Visits to museums, choir, theatre, cinema, sport
- Travelling, Spending time in the Nature, Exploring the city, Board games, Playing sports
- cooking, card magic
- I have two kids &lt;3years, so most of daytime activities are related to kids.
- Music, Sports
- Reading, Studying, Learning new skills
- Yoga, Stepaerobic
- Art, spirituality, travel

- Bouldering, yoga, tantra sessions, festivals
- Yoga, Meditation, strength training, choir singing
- Altes Hobby während Corona aufgenommen und vertieft (Segelboot gekauft) und berufliche Selbständigkeit wird vorbereitet (bought a sail boat and do sailing again as well as prepared self-employment)
- Sports
- Playing drums, start to draw
- Learning language, producing music
- Football, Fitness
- Div.
- horse and dog training
- Learning New Skills (3D Modeling, New Programming Languages, Engineering etc.)
- making music, managing
- Doing sports, culture activities, reading
- Hiking, biking
- Rennradfahren, Photographie (riding a race bike, photography)
- learning a new language, singing in a choir
- Historical science
- sport in a group of people
- sports, theatre, board games
- home decor, cooking, organizing, playing with kids, social gatherings, window shopping
- drawing, sewing, crochet, painting
- I go to the beach and ride my bike
- Drawing, painting, calligraphy, gardening

## Appendix D

### Tables for Hypotheses testing

**Table 2**

*Linearity check for linear regression for Hypothesis 1a and Hypothesis 1b*

|              |               |            | Sum of  | df | Mean    | F     | Sig. |
|--------------|---------------|------------|---------|----|---------|-------|------|
|              |               |            | Squares |    | Squares |       |      |
| Life         | Between       | (Combined) | 50,147  | 36 | 1,393   | 1,661 | ,097 |
| satisfaction | groups        | Linearity  | 1,916   | 1  | 1,916   | 2,285 | ,144 |
| * Work-      |               | Deviation  | 48,231  | 35 | 1,378   | 1,643 | ,103 |
| family       |               | from       |         |    |         |       |      |
| conflict     |               | linearity  |         |    |         |       |      |
|              | Within groups |            | 20,123  | 24 | ,838    |       |      |
|              | Total         |            | 70,270  | 60 |         |       |      |
| Perceived    | Between       | (Combined) | 35,574  | 36 | ,988    | ,671  | ,863 |
| work         | groups        | Linearity  | ,965    | 1  | ,965    | ,656  | ,426 |
| productivity |               | Deviation  | 34,609  | 35 | ,989    | ,672  | ,861 |
| * Work-      |               | from       |         |    |         |       |      |
| family       |               | linearity  |         |    |         |       |      |
| conflict     | Within groups |            | 35,318  | 24 | 1,472   |       |      |
|              | Total         |            | 70,891  | 60 |         |       |      |

**Table 3***Durbin Watson Work-family conflict and Life satisfaction*

| R                 | R Square | Adjusted R Square | Standard Error of the Estimate | Durbin-Watson |
|-------------------|----------|-------------------|--------------------------------|---------------|
| ,165 <sup>a</sup> | ,027     | ,011              | 1,07636                        | 2,306         |

*Note.* a. Predictors: (Constant), Work-family conflict

b. Dependent Variable: Life satisfaction

**Table 4***Durbin Watson work-family conflict and work productivity*

| R                 | R Square | Adjusted R Square | Standard Error of the Estimate | Durbin-Watson |
|-------------------|----------|-------------------|--------------------------------|---------------|
| ,117 <sup>a</sup> | ,014     | -,003             | 1,08867                        | 2,075         |

*Note.* a. Predictors: (Constant), Work-family conflict

b. Dependent Variable: Perceived work productivity

**Table 7***Linearity check for exploratory analysis*

|                                 |                |                          | Sum of Squares | df | Mean Squares | F    | Sig. |
|---------------------------------|----------------|--------------------------|----------------|----|--------------|------|------|
| Life satisfaction               | Between groups | (Combined)               | 14,574         | 20 | ,729         | ,523 | ,939 |
|                                 |                | Linearity                | ,000           | 1  | ,000         | ,000 | ,991 |
| * Leisure crafting standardized |                | Deviation from linearity | 14,574         | 19 | ,767         | ,551 | ,918 |

|              |         |               |        |    |       |       |      |
|--------------|---------|---------------|--------|----|-------|-------|------|
|              |         | Within groups | 55,696 | 40 | 1,392 |       |      |
|              |         | Total         | 70,270 | 60 |       |       |      |
| Perceived    | Between | (Combined)    | 33,585 | 20 | 1,679 | 1,801 | ,056 |
| work         | groups  | Linearity     | 1,688  | 1  | 1,688 | 1,809 | ,186 |
| productivity |         | Deviation     | 31,898 | 19 | 1,679 | 1,800 | ,058 |
| * Leisure    |         | from          |        |    |       |       |      |
| crafting     |         | linearity     |        |    |       |       |      |
| standardized |         | Within groups | 37,306 | 40 | ,933  |       |      |
|              |         | Total         | 70,891 | 60 |       |       |      |

**Table 8**

*Durbin-Watson leisure crafting standardized and life satisfaction*

| R                 | R Square | Adjusted R Square | Standard Error of the Estimate | Durbin-Watson |
|-------------------|----------|-------------------|--------------------------------|---------------|
| ,002 <sup>a</sup> | ,000     | -,017             | 1,09134                        | 2,332         |

*Note.* a. Predictors: (Constant), leisure crafting standardized

b. Dependent Variable: Life satisfaction

**Table 9**

*Durbin-Watson leisure crafting standardized and perceived work productivity*

| R                 | R Square | Adjusted R Square | Standard Error of the Estimate | Durbin-Watson |
|-------------------|----------|-------------------|--------------------------------|---------------|
| ,154 <sup>a</sup> | ,024     | ,007              | 1,08303                        | 2,172         |

*Note.* a. Predictors: (Constant), leisure crafting standardized

b. Dependent Variable: Life satisfaction

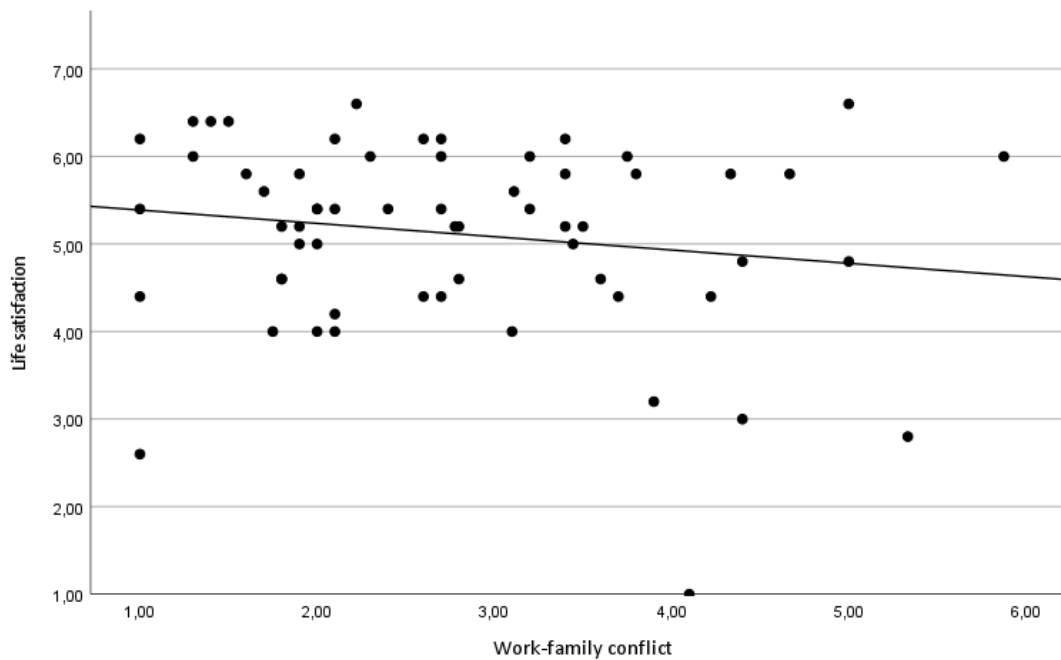


## Appendix D

### Plots for Hypotheses testing and ceiling effects

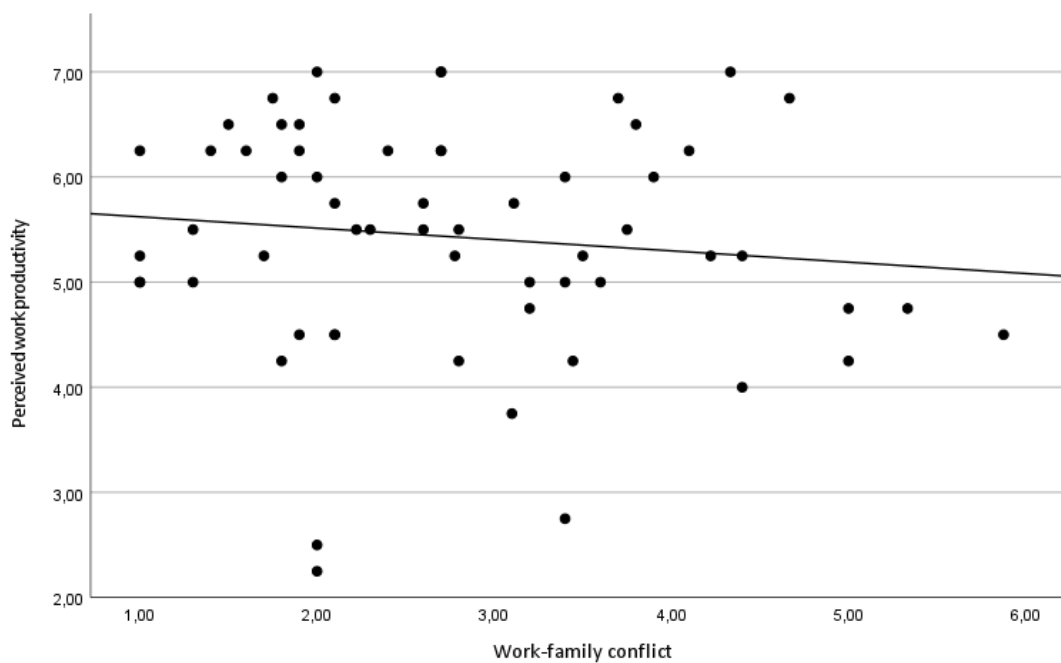
#### Plot 1

*Scatterplot to estimate outliers of work-family conflict and life satisfaction*



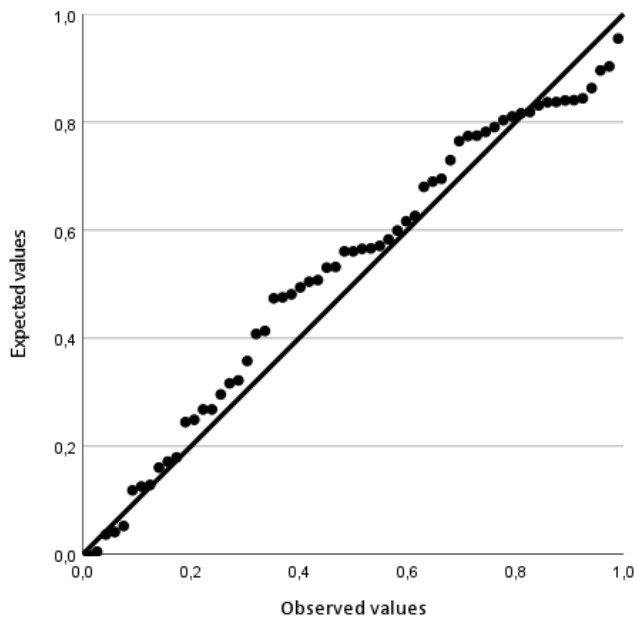
#### Plot 2

*Scatterplot to estimate outliers of work-family conflict and perceived work productivity*

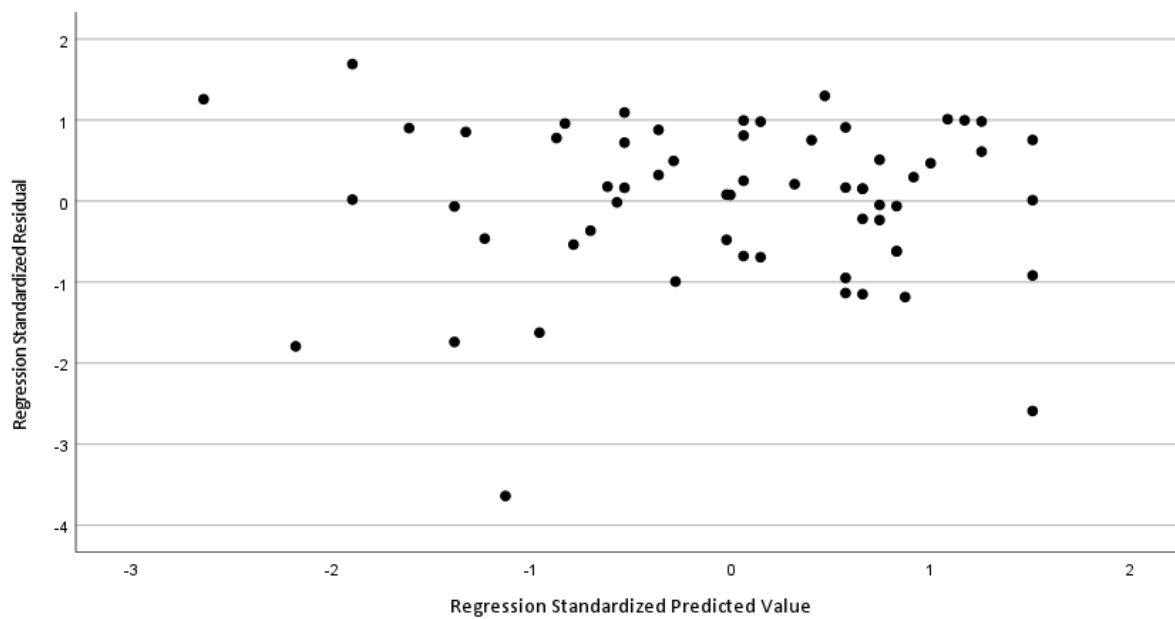


**Plot 3**

*PP Plot for life satisfaction*

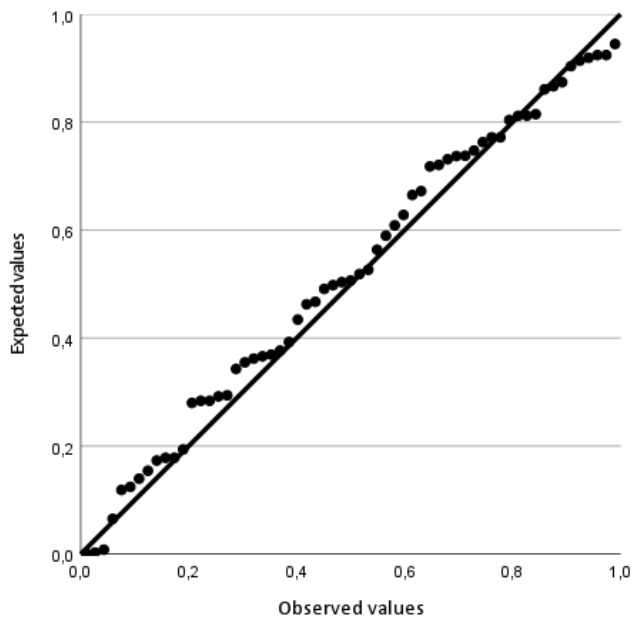
**Plot 4**

*Independence of residuals for life satisfaction*

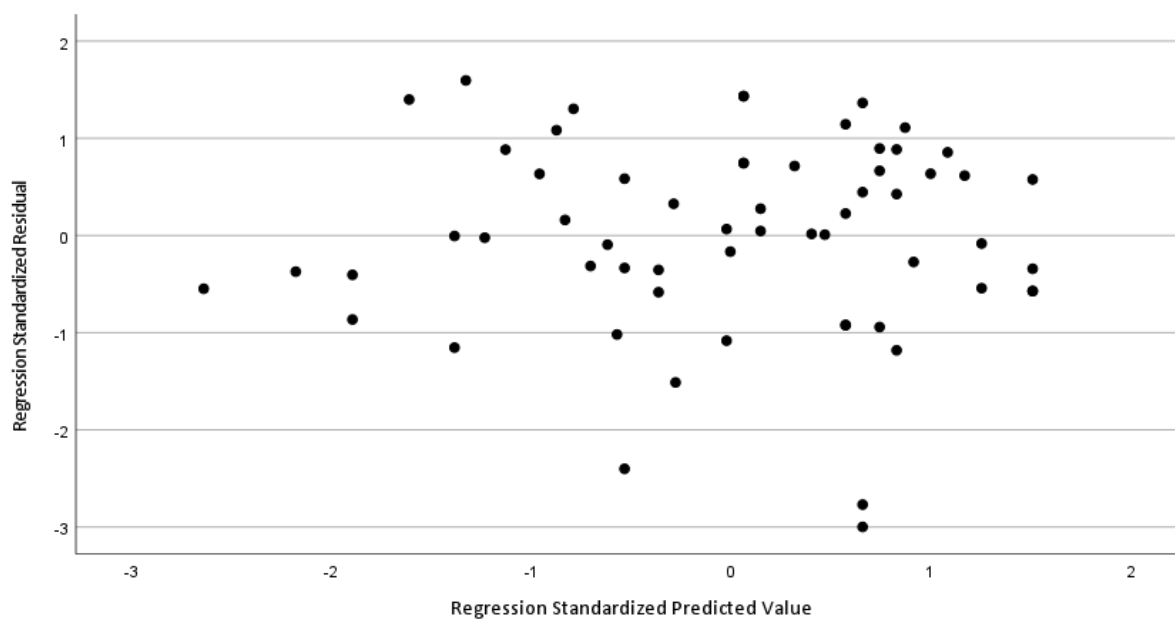


**Plot 5**

*PP Plot for perceived work productivity*

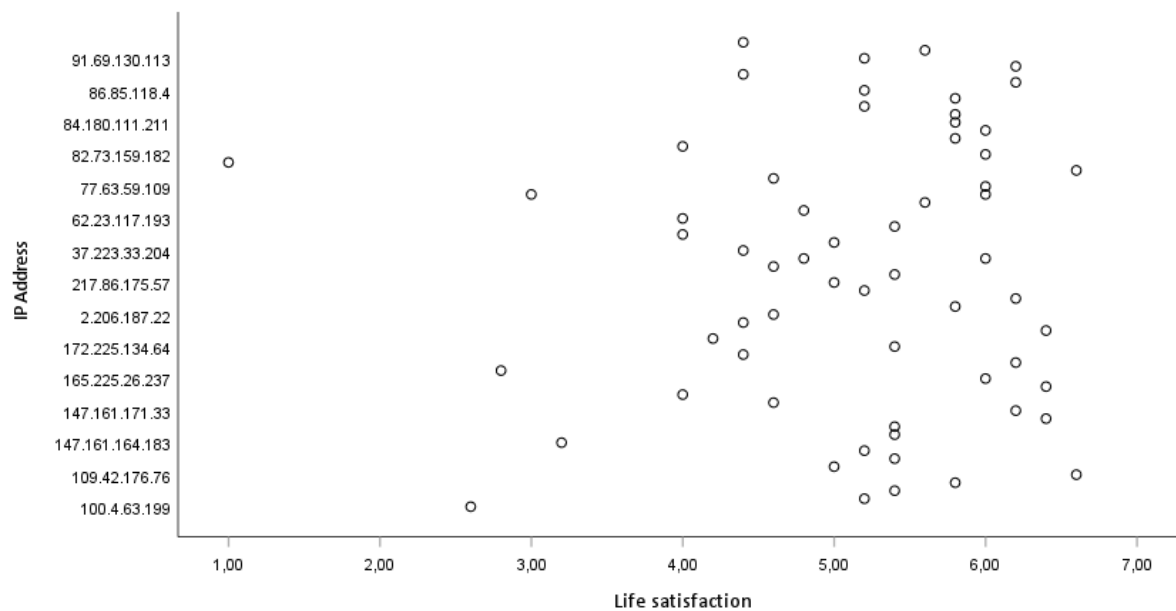
**Plot 6**

*Independence of residuals for perceived work productivity*



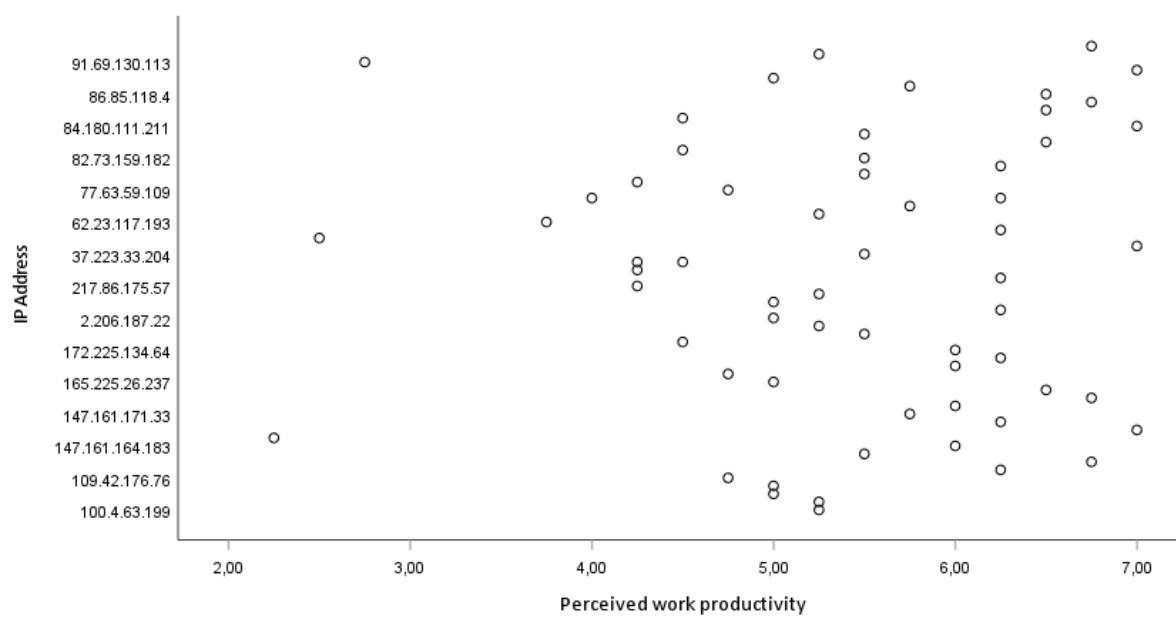
## Plot 5

### *Ceiling effect life satisfaction*



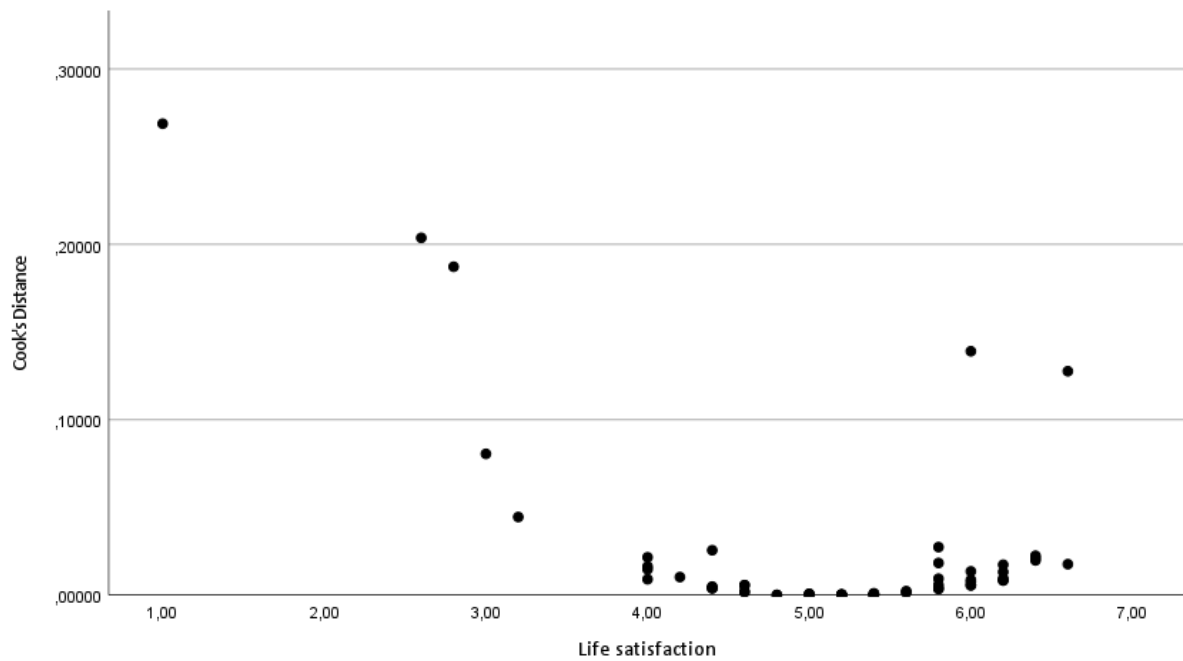
## Plot 6

### *Ceiling effect perceived work productivity*

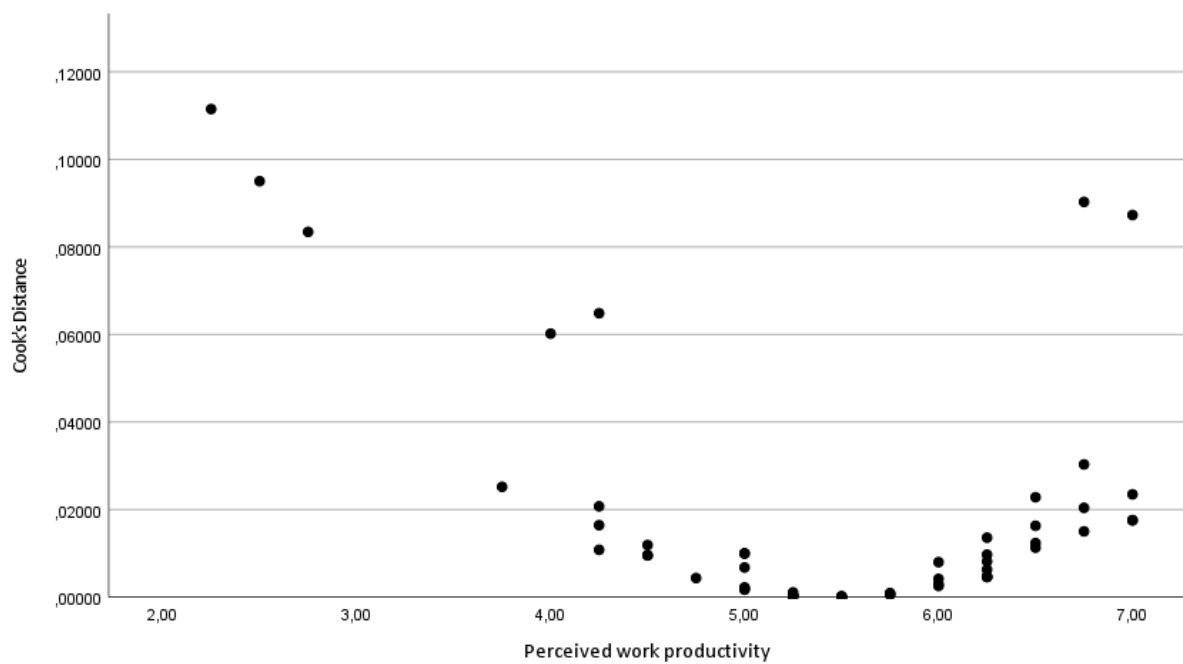


**Plot 7**

*Cook's distance outlier plot for life satisfaction*

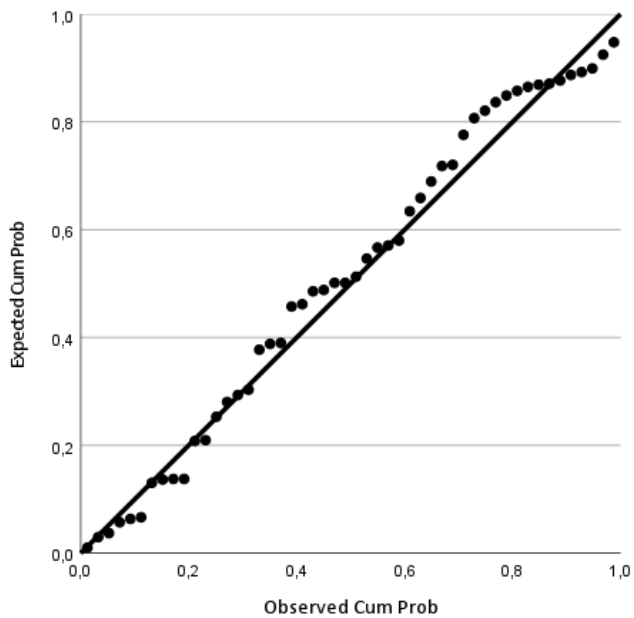
**Plot 8**

*Cook's distance outlier plot for perceived work productivity*

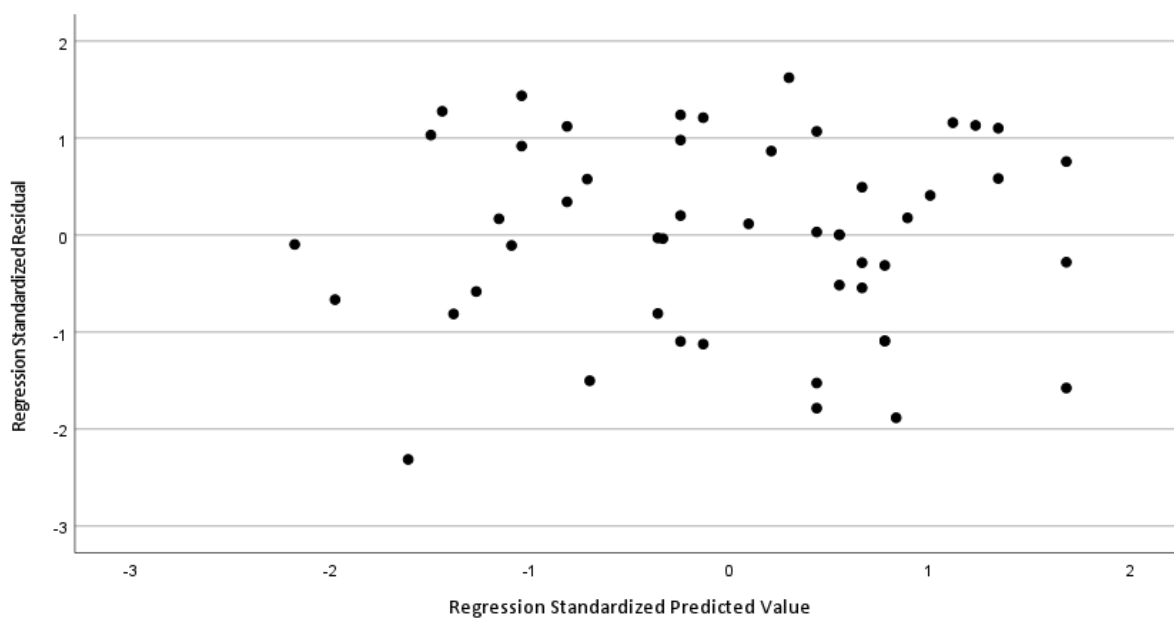


**Plot 9**

*PP plot Tobit assumptions life satisfaction*

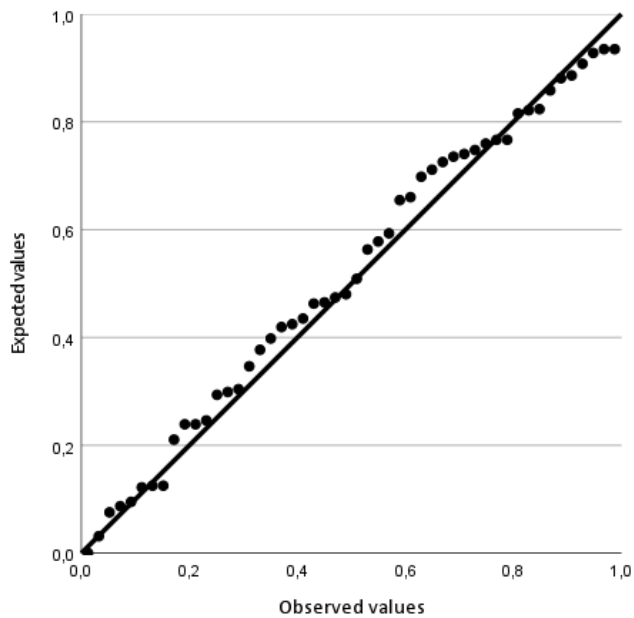
**Plot 10**

*Independence of residuals tobit assumptions for life satisfaction*

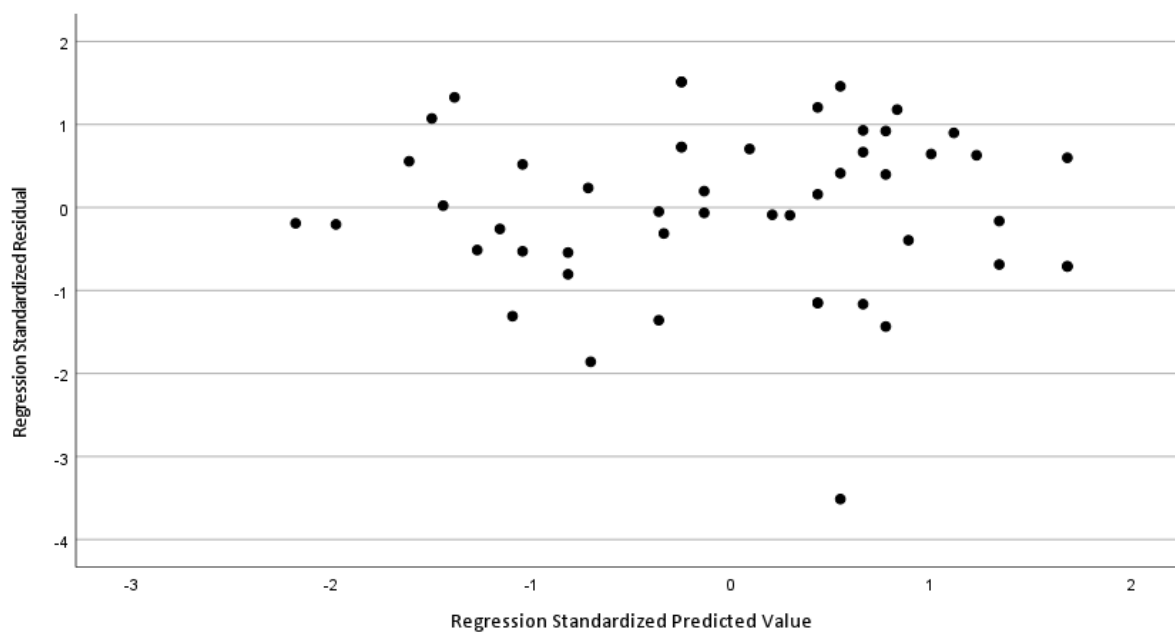


**Plot 11**

*PP Plot tobit assumptions perceived work productivity*

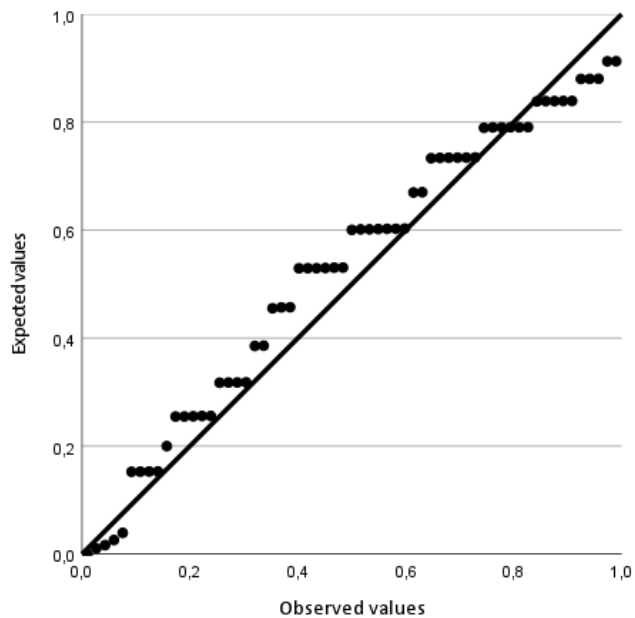
**Plot 12**

*Independence of residuals tobit assumptions perceived work productivity*

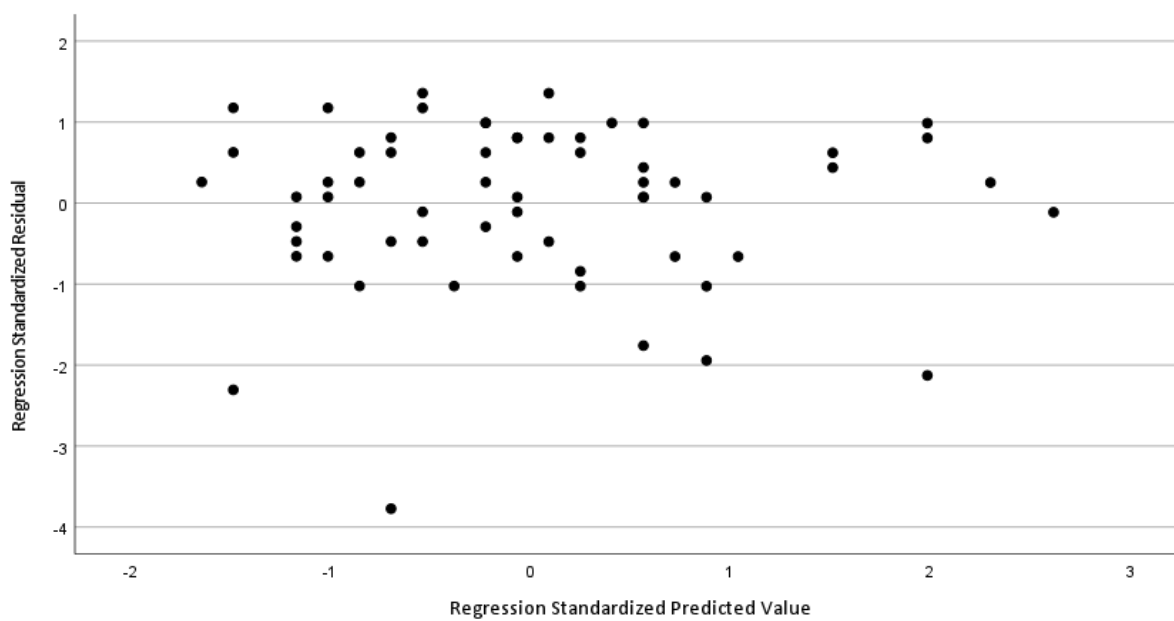


**Plot 13**

*PP plot exploratory analysis for life satisfaction*

**Plot 14**

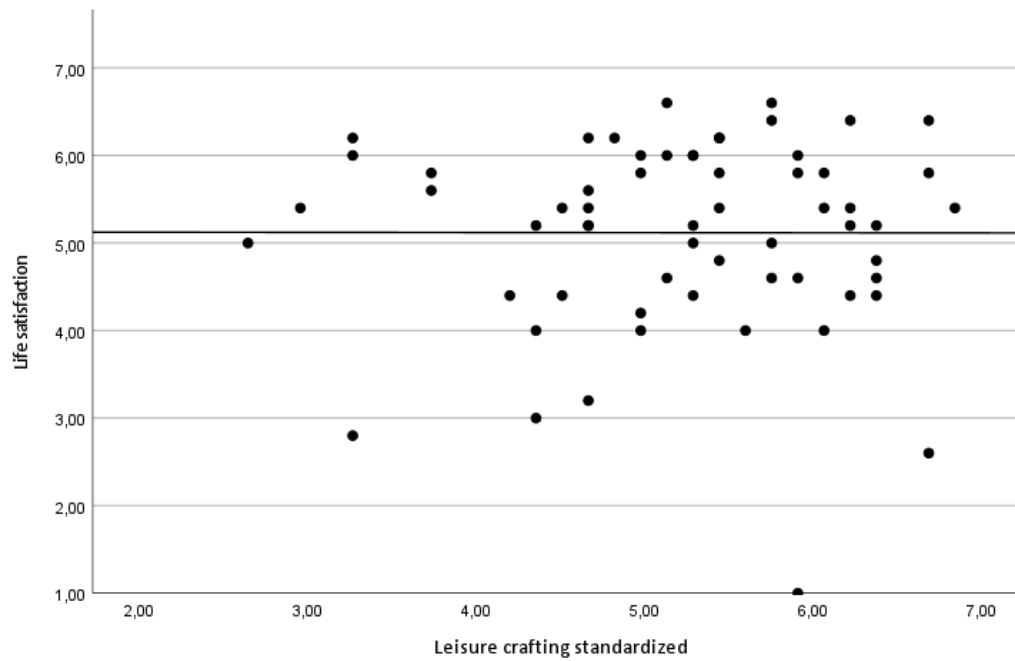
*Independence of residuals exploratory analysis for life satisfaction*



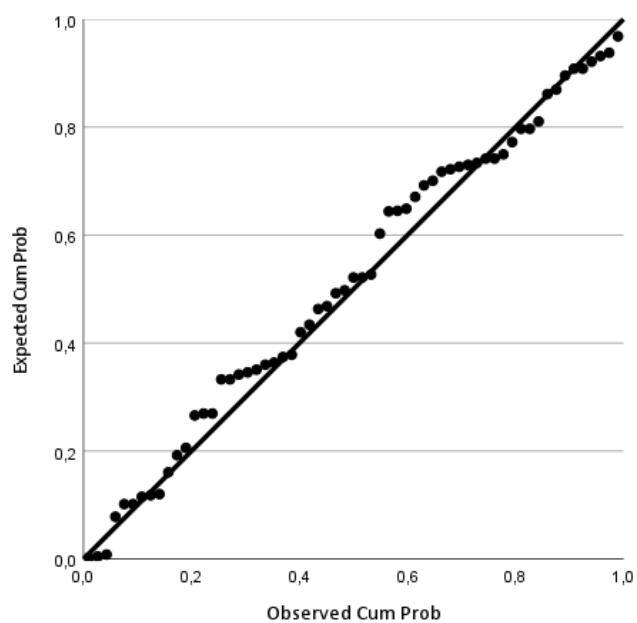


**Plot 15**

*Scatterplot to estimate outliers in exploratory analysis for life satisfaction*

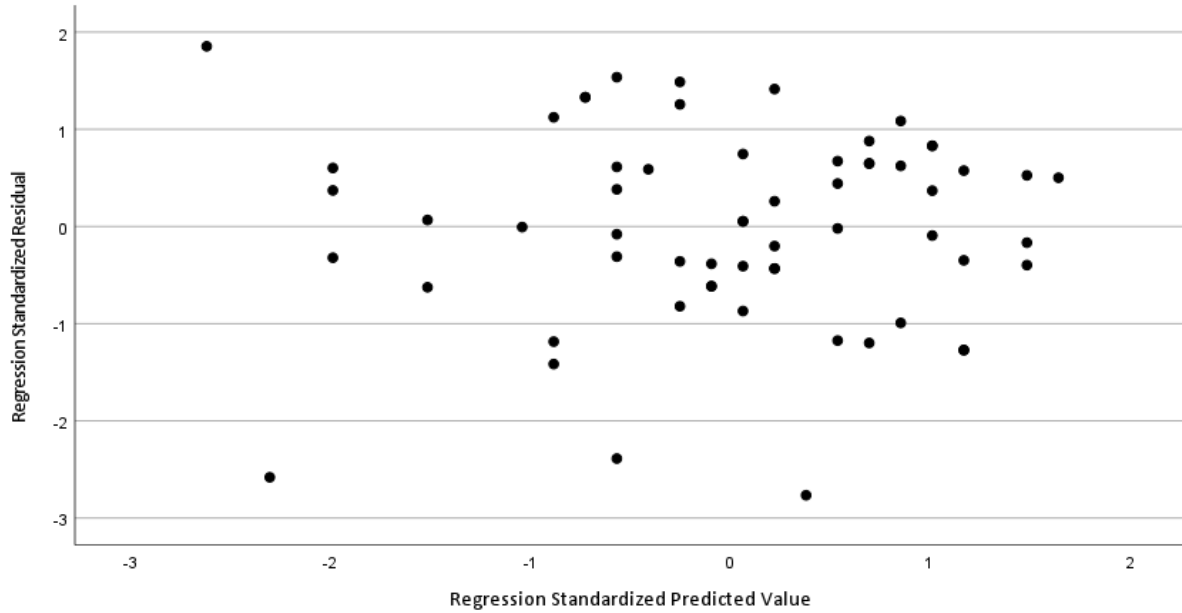
**Plot 16**

*PP plot exploratory analysis for perceived work productivity*



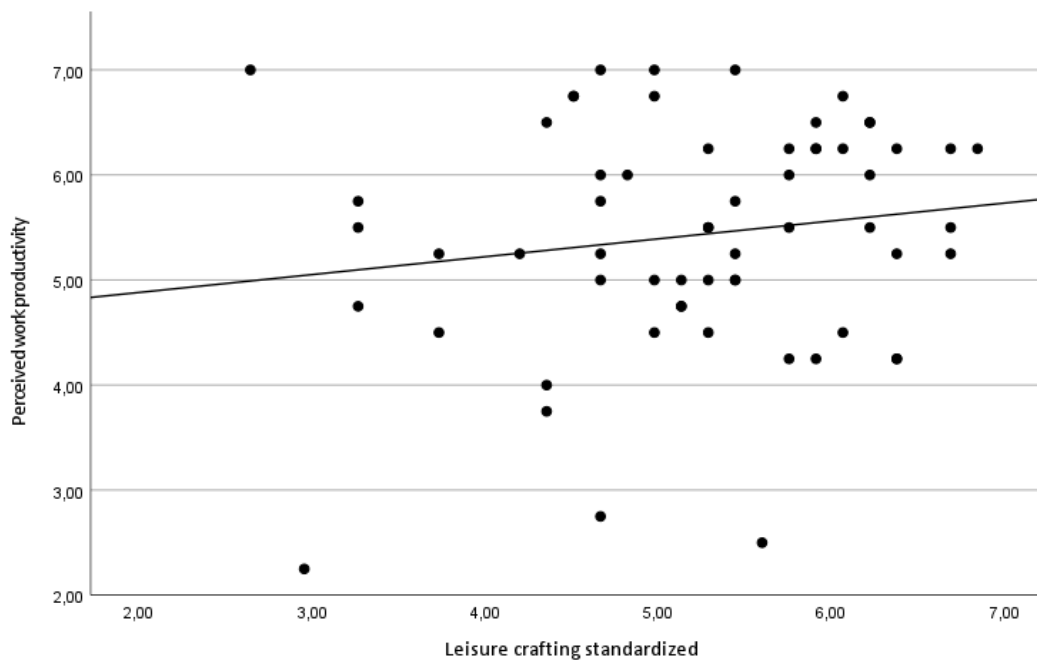
### Plot 17

*Independence of residuals exploratory analysis for perceived work productivity*



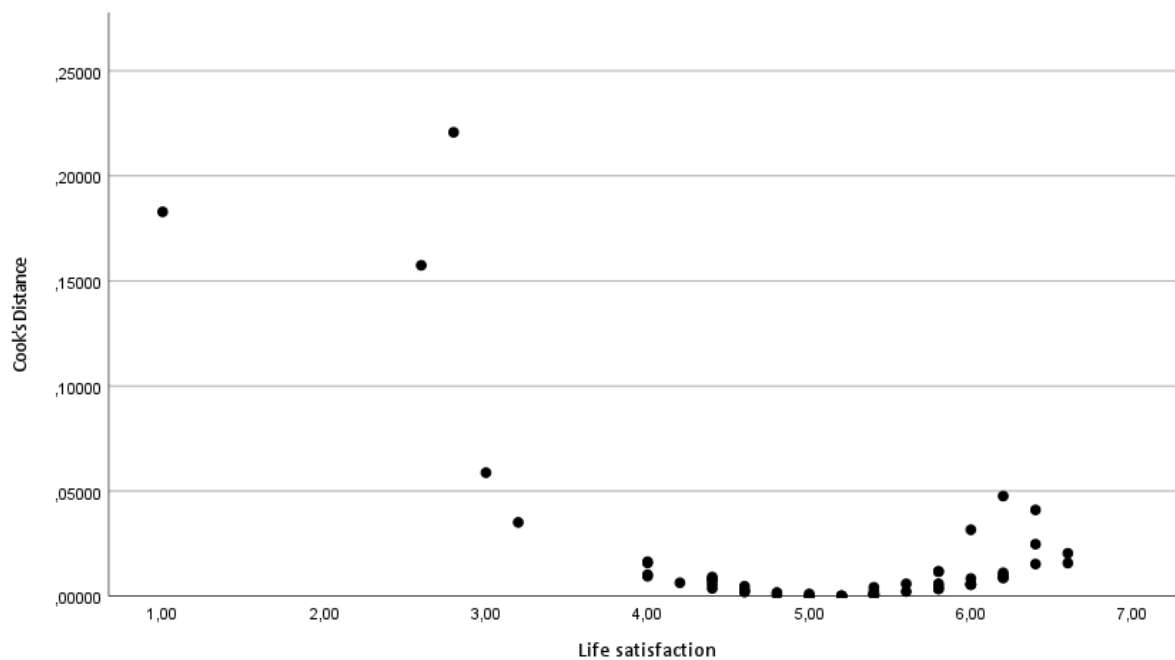
### Plot 18

*Scatterplot for estimation of outliers in exploratory analysis for perceived work productivity*

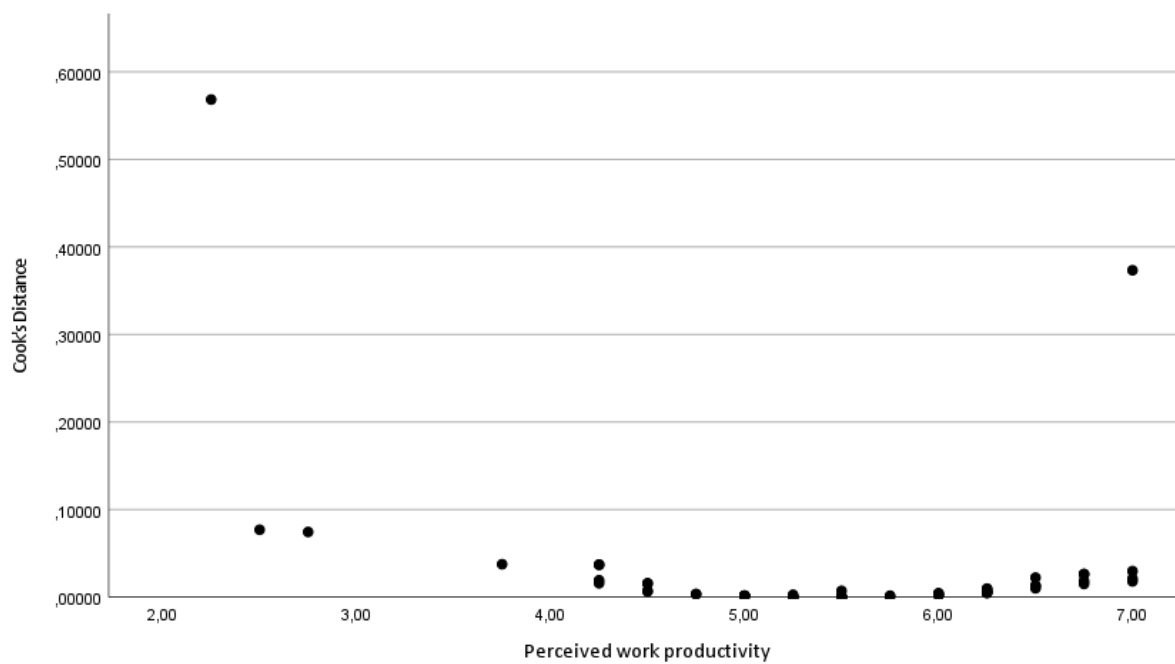


**Plot 19**

*Cook's distance outlier plot for life satisfaction*

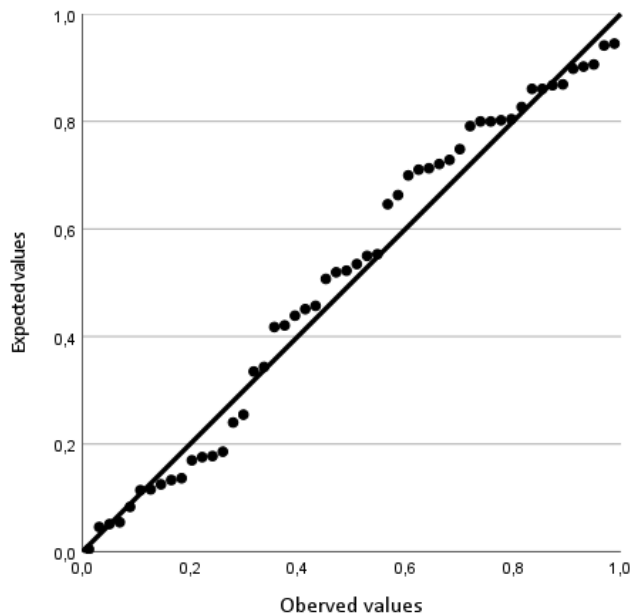
**Plot 20**

*Cook's distance outlier plot for work productivity*

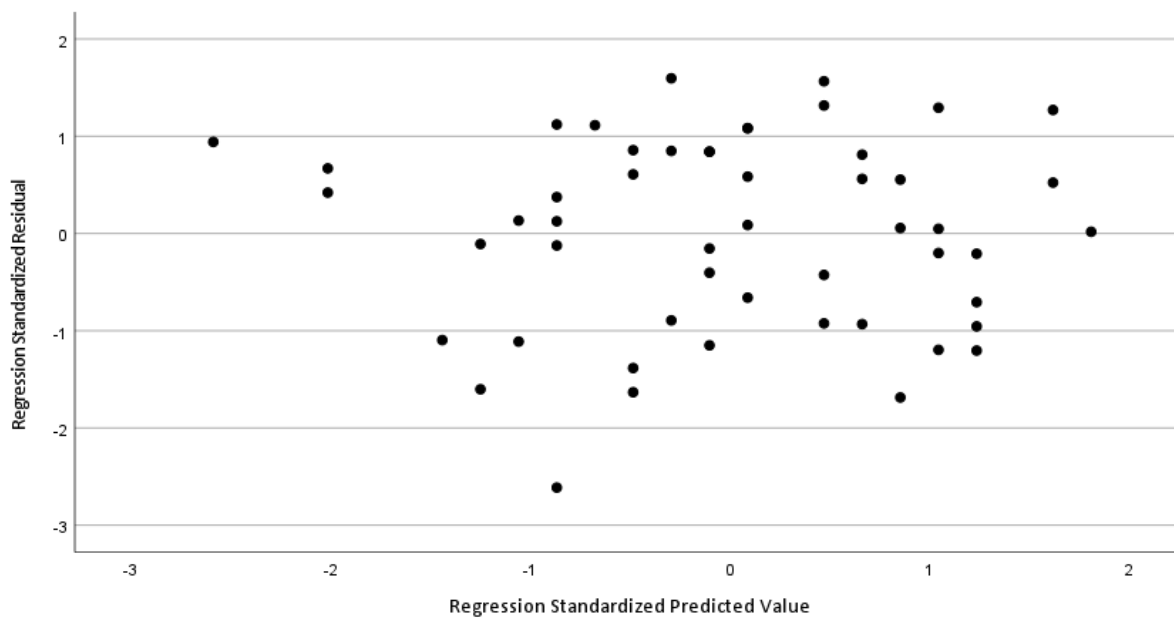


**Plot 21**

*PP plot Tobit assumptions life satisfaction*

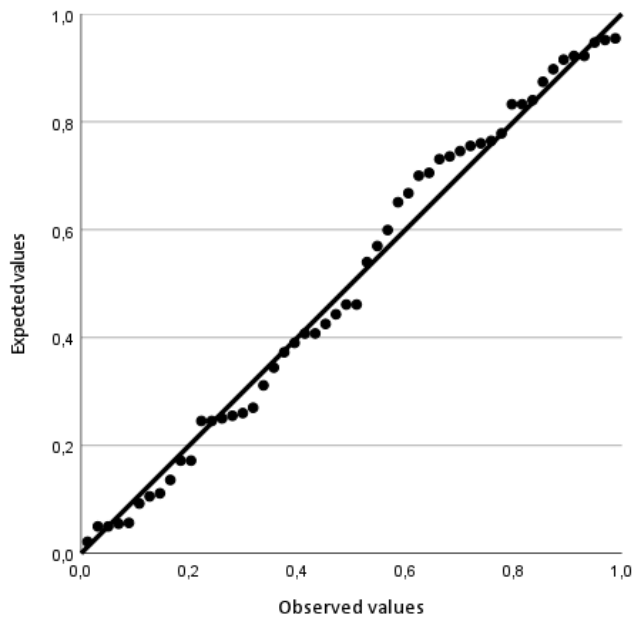
**Plot 22**

*Independence of residuals tobit assumptions for life satisfaction*



**Plot 23**

*PP Plot tobit assumptions perceived work productivity*

**Plot 24**

*Independence of residuals tobit assumptions perceived work productivity*

