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Conflict between Work and Life: The Case of Contract Workers in the German IT and Media Sectors**

Many studies examine issues of work-life conflict of employees. However, in research on work-life conflict little attention has been given to contract workers to date. This is rather surprising as there are indications that the specific working conditions of contract workers can have consequences for their work-life conflict. Therefore, the purpose of this paper is to reduce the existing research gap by presenting a study which analyzes the antecedents of the work-life conflict of contract workers in the IT and media sectors. Results show that the work-life conflict of contract workers is significantly influenced by working hours and income. Furthermore, the number of younger children has a significant impact on their work-life conflict when regarded in interaction with gender. All in all, this study contributes to a differentiated understanding of work-life conflict in the specific case of contract workers.

Key words: contract worker, quantitative study, work-life balance, work-life conflict (JEL: J24, M12, M13)

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1. Introduction

Similar to other industrialized countries, the German labor market has been undergoing significant changes in recent years, with atypical employment becoming increasingly relevant while permanent full-time employment has decreased (Storey et al., 2002; Ashford et al., 2007; Broschak et al., 2008). There is a particularly sharp rise in the number of self-employed, especially solo self-employed persons (self-employed people without employees) (Kelleter, 2009, p. 1204; Süß & Kleiner, 2010). Contract workers are included in this group of solo self-employed persons whose working conditions are highly flexible (Barley & Kunda, 2006; Bidwell & Briscoe, 2009).

Current discussions by academics and in the media highlight that the flexibilization of employment forms has effects not only at the company level, but also at the individual level due to the fact that flexible employees are confronted more quickly and more often with new workplaces, conditions and locations (e.g. Davis & Kalleberg, 2006; Kossek et al., 2006; Beutell, 2007; Henninger & Gottschall, 2007; Süß & Kleiner, 2007). This applies particularly to contract workers due to the specifics of their employment form. Linked to this is evidence that the specific working conditions of contract workers can have consequences for their perceived work-life balance, and in particular their work-life conflict (Henninger & Gottschall, 2007; Siebecke, 2010; Süß & Sayah, 2011). Self-employment, the project-based work and the discontinuous employment can lead to other and additional factors being the cause of conflicts compared to permanent employees. For instance, a study comparing the health condition of contract workers and permanent employees in the IT and media sectors revealed that the contract workers suffered comparatively more often from mental health problems and symptoms of burnout. Causes were seen in the specific working conditions, in particular the temporal intertwining of work and private life, leaving little time for regeneration and thus causing additional burdens (Siebecke, 2010, p. 22-24). In addition, the project-nature of work involves time pressure, stress and long working hours. However, despite some studies, which consider the health consequences of contract working (Ertel et al., 2005; Siebecke, 2010), questions concerning the work-life conflict of contract workers have not yet been tackled.

This research gap is surprising, because the discussion of work-life conflict is particularly relevant for contract workers due to its consequences for mental and physical health. Medical condition or illness can be particularly serious for contract workers who have a one-person business because they result in a direct loss in income, which can in turn endanger their livelihood. This research gap is particularly crucial due to the significance of work-life conflicts for contract workers both in personal and economic terms. Therefore, our research objective is to reduce this research gap by providing a differentiated analysis of the work-life conflict of contract workers. The focus on contract workers augments the extant literature on work-life conflict, which has mainly focused on permanent employment, by a further perspective. As the number of persons in flexible employment forms, such as contract working, is increasing and the factors influencing their work-life conflict might be different to permanent employees due to the specifics of their employment form, a differentiated analysis is

necessary and contributes to the understanding of work-life conflict in the light of flexible employment forms.

The paper is structured as follows: Section 2 considers the concept of work-life conflict and provides a description of the characteristics of contract workers. Building on this and drawing on studies on work-life conflict for other employment forms, in section 3 we formulate hypotheses regarding the relevant factors influencing the work-life conflict of contract workers. Section 4 provides an overview of the empirical investigation and then presents the results. The paper concludes by discussing the results, providing contributions, highlighting the limitations of the investigation, and pointing to areas where future research is required (section 5).

2 Conceptual background

2.1 *Work-life conflict*

The possible interactions between work and other areas of life have been intensively discussed in recent years by academics, politicians, and the public using various terms such as ‘work-life balance’, ‘work-home interference’, ‘work-family integration’, ‘work-family conflict’, ‘work-family enrichment’, or ‘work-family spillover’ (e.g., Carlson et al., 2006; Hughes & Parkes, 2007; Whitehead et al., 2008; Fisher et al., 2009; Kaiser & Ringlstetter, 2010; Feierabend et al., 2011; Ruysseveldt et al., 2011). Although these terms are not used identically, two main perspectives prevail in the relevant publications. It is argued on the one hand that conflicts can result from the interaction between work and private life (conflict perspective). On the other hand, it is assumed that this interaction can also result in positive effects (enrichment perspective).

This paper focuses on the conflict perspective. This perspective is suited to the selected group of contract workers firstly, because as explained above, their employment form is associated to represent a number of additional burdens. Therefore, conflicts between work and private life can be expected to be particularly relevant for contract workers. Secondly, conflicts between work and private life can have far reaching consequences at individual, organizational, and macro-economic levels, thus highlighting that their investigation is highly relevant:

- At an individual level, job and life satisfaction is affected by perceived conflicts between work and private life. In addition, work-life conflict can result in health problems (e.g. stress, depression, high blood pressure, and other psychosomatic symptoms) and even burnout (e.g. Kossek & Ozeki, 1998; Allen et al., 2000).
- Work-life conflict can have economic consequences for companies, such as reduced productivity, absenteeism, and even long-term loss of labor. The absence of qualified workers in organizations is particularly problematic against the light of intensifying skilled labor shortages.
- Macro-economic consequences arise in form of health costs which burden social security systems. Moreover, losses in productivity can at worst reduce the competitiveness, not only of companies but also of the whole economy.

Studies adopting the conflict perspective draw primarily on role theory. They are based on the assumption that individuals (simultaneously) adopt multiple roles in their lives, for example as employee, manager, spouse, parent, friend, and citizen in society

(Duxbury & Higgins, 2001, p. 3). Within role theory it is argued that conflicts can emerge when an individual adopts multiple roles (simultaneously). Three conflict dimensions are discerned (Greenhaus & Beutell, 1985):

- Time-based conflict refers to the time available to an individual which has to be divided between the different (life) roles. The time needed for one role is not available for other roles. Temporal bottlenecks arise when individuals want to pursue diverse activities or have diverse responsibilities in different life roles, and these result in time-based conflicts.
- Aspects of one role which cause burdens for an individual make it more difficult for another role to be performed (strain-based conflict). Stress resulting from working life can for example mean that an individual is too exhausted to fulfill his obligations in his private life. Similarly, family conflicts or lack of support from a spouse can result in burdens which make it difficult to meet demands at work.
- Behavior-based conflicts emerge when the demands from the different life roles are not compatible. This is the case when different behavioral expectations are placed on an individual by the roles. Such conflicts can thus arise for example when objectivity and consequent goal orientation are demanded at work, while emotional and considerate behavior is expected in the family.

It is assumed that the potential for conflict can emerge in each area of life which can influence the other area of life (e.g. Frone et al., 1997), meaning that there is a bidirectional relationship (work-to-life conflict and life-to-work conflict). Work-to-life conflict and life-to-work conflict are two distinct, though related concepts (e.g., Byron, 2005). Therefore, when differentiating between these two directions and the above-mentioned three dimensions of conflict, six conflict constructs result for the investigation of work-life conflict.

Studies adopting the conflict perspective generally focus on the life areas work and family (work-family conflict) (e.g. Frone et al., 1997; Grzywacz & Marks, 2000; Allen & Armstrong, 2006; Matthews, 2010; Powell & Greenhaus, 2010; Michel et al., 2011). However, such a perspective is short-sighted because only aspects of family life are included, although other life roles adopted in private lives can create conflict potentials in their interaction with work (Fisher et al., 2009). Therefore, in this paper the perspective is extended to include conflicts between work and all activities undertaken by an individual outside working time (private life). Moreover, such a perspective enables conflicts between work and private life to be investigated, which people such as singles, who have no (or less) family obligations, experience. However, our conception of work-life conflict does follow research on ‘work-family conflict’ in the sense that findings from this research are drawn on. In order to reflect our extension of this perspective, we therefore refer to ‘private life’ rather than ‘family life’ and to ‘work-life conflict’.

2.2 Contract workers

Although, the term ‘contract worker’ (in Germany synonymous: freelancer) has not been clarified either legally or in business terms in Germany, it is usually attributed to persons according to the following features: Contract workers are self-employed,

whereby they do not have any employees, but work alone on a project-related basis for various clients – either parallel or in succession. The specifics of their work, their pay and other components of the assignment are not regulated in a contract of employment, but in a contract for work and services, or a service contract. A contract worker is therefore not paid a fixed monthly income, but is compensated exclusively on the basis of the service provided (Kunda et al., 2002, p. 238). As the work is not based on a contract of employment, the contract worker is not directly subject to directives from the client during the actual project and working conditions are agreed flexibly within the limits of the contract. The contract worker has leeway in terms of hours of work and location. However, in practice, arrangements concerning the deployment of contract workers often deviate from legal regulations, so that, for example, they are offered a workplace in the company and are integrated into the company's structures. Because projects are subject to time limits, contract workers have to acquire new customers during or at the end of their present project (Barley & Kunda, 2006, p. 48).

In Germany, a large number of contract workers is working in the IT and media sectors. In the IT sector the demand for contract workers has especially been evident in recent years because companies increasingly cooperate with contract workers to acquire external knowledge and to cope with rapidly changing market conditions. In contrast, contract working has a long tradition in the media sector, e.g. in journalism, and in design or artistic occupations.

Furthermore, contract workers in the IT and media sector are especially relevant for the investigation of work-life conflicts because these sectors have further characteristics, which, additionally to the above-mentioned challenges of self-employment and project work, might account for further burdens in the reconciliation of work and private life. For instance, the demands placed on contract workers in the IT sector in terms of skills and flexibility represent added burdens (Süß & Kleiner, 2010, p. 41). It is often necessary for them to work for clients on-site, which can mean several days' absence from home, thus leading to additional potential work-life conflicts (Süß & Sayah, 2011). Contract workers in the IT are usually paid a relatively high income (Süß & Kleiner, 2010), while those working in the media sector usually have a quite low income. Thus, contract workers in the media sector often experience an imbalance between intensive workload and low income. Therefore, economic pressure and job insecurity are the key burdens in this sector (Ertel et al., 2005, p. 297-298; Henninger & Gottschall, 2007). In spite of differences between these two sectors, they also have similarities, e.g. they comprise knowledge workers who are intensively using (new) information and communication technologies. Therefore, these two sectors are regarded conjointly when investigating working conditions of contract workers (e.g., Siebecke, 2010). Due to the above-mentioned reasons, contract workers in the IT and media sectors are relevant cases for the investigation of work-life conflict and are thus focused in this study.

3 Development of hypotheses

In empirical studies, hypotheses can either be developed on the basis of theories or from results of prior empirical studies where these concern related questions and can

be applied to the new object of study. Both approaches are appropriate here. Firstly, our argumentation and that of other relevant studies are based on role theory. Secondly, we draw on the results of prior studies to investigate the work-life conflict among contract workers because there is much research on other forms of employment, the results of which need to be tested for contract workers (Süß & Kleiner, 2010). For example, there are numerous studies which identify possible antecedents influencing work-life conflict, but which focus on employees generally and have therefore not been adapted to the specific features of contract working. However, their results, when tailored to the specific working conditions of contract workers, represent a starting point for formulating hypotheses for the empirical investigation of work-life conflict among contract workers.

Numerous studies have found correlations between work-life conflict and working time (e.g. Netemeyer et al., 1996; Ford et al., 2007; Kinnunen et al., 2004). Long weekly working hours can result in role conflicts between work and private life due to the restricted time and energy. It thus makes sense to include working hours in the present investigation, particularly as there are some work activities which have to be done by contract workers but which do not apply to employees. These include project acquisition, paperwork, and further training additionally to their regular project work. In contrast, employees are usually exempt from work to do some further training. It can therefore be assumed that contract workers work long hours (also) due to these extra work activities, thus leading to conflicts with other parts of their life. It is thus argued that perceived conflict between work and private life increases with increasing weekly working time. As conflicts between work and private life can be differentiated in six conflict constructs and the proposed effect is suggested for each of them, this results in six hypotheses, which are regarded separately in the following analyses. This approach is used for all hypotheses, resulting in six hypotheses (a-f) for each proposed antecedent (1-6).

- Hypothesis 1: The greater the number of working hours per week, the stronger is...
- (H1a) ...time-based work-to-life conflict.
 - (H1b) ...strain-based work-to-life conflict.
 - (H1c) ...behavior-based work-to life conflict.
 - (H1d) ...time-based life-to-work conflict.
 - (H1e) ...strain-based life-to-work conflict.
 - (H1f) ...behavior-based life-to-work conflict.

Income is also argued to influence work-life conflict. Byron's (2005) study shows that income correlates positively, if only slightly, with work-related conflicts (work-to-family conflict). In contrast, in relation to contract workers it can be argued that work-life conflict lessens with increasing income. This assumption is plausible because the self-employed and project-nature of contract working means that income is less stable and is subject to significant market fluctuations. It can thus be argued that low income leads to insecurity, which contract workers try to compensate by taking on further assignments, which can in turn lead to time-based and stress-based conflicts. It is equally likely that high income opens up possibilities which can lead to a reduction in these conflicts. Thus high income could enable contract workers to use external services

such as cleaning and child care, thereby reducing conflicts. We therefore argue that contract workers with a high income experience less conflict between work and their private lives.

Hypothesis 2: The greater the income of contract workers, the less is their perceived...

(H2a) ...time-based work-to-life conflict.

(H2b) ...strain-based work-to-life conflict.

(H2c) ...behavior-based work-to life conflict.

(H2d) ...time-based life-to-work conflict.

(H2e) ...strain-based life-to-work conflict.

(H2f) ...behavior-based life-to-work conflict.

Work-family border theory (Clark, 2000) and boundary theory (Ashforth et al., 2000) consider the interaction and the boundaries between different life roles which can be fixed or permeable. There are no conclusive results as to whether segmentation between or integration of work and private life improves the compatibility between these different areas of life. Moreover, this varies depending on the demands of the different life areas and individual preferences (Kreiner, 2006). However, it is argued in the literature that mixing these life areas can lead to conflicts because the potential for two-way disturbance is greater when a person has to fulfill several roles simultaneously.

The blurring of the boundaries between work and private life is enhanced through the use of information and communication technologies. While these technologies can aid in coordinating various tasks and can thus save time, the danger is that they can cause extra stress as on-call availability means that work impinges on private life (Chesley et al., 2003). These new technologies also make it easier to work from home. This can be advantageous because commuting to work can be avoided. On the other hand, working from home means that the boundaries between work and private life becomes less clear, which is why the literature focusing on home working generally recommends that these two areas be clearly separated, for example by clearly defining working time or having separate rooms for work and private life (Jackson, 2002). It is argued that a clear separation between these areas and thus a focus on the particular role enables disturbances and diversions through other life roles to be reduced, and makes it easier for individuals to mentally separate out the different role identities (Ashforth et al., 2000; Ashforth, 2001). Thus, such a segmentation of roles enables an individual to keep work stress out of private life (Powell & Greenhaus, 2010) and similarly to avoid nonwork-related conflicts affecting work.

Generally, media and IT contract workers use new information and communication technologies particularly intensively. Because of the nature of their work, these technologies enable some contract workers to work from home frequently. For others, it is necessary that they work on site for their clients. But even for them, work and private life may become intertwined, for example when further tasks which are necessary over and above the project-related work for clients are completed at home. Moreover, the project-nature of their work for clients means that they need to be available on-call. Thus, it can be argued that work and private life are less strictly divided for contract workers. Against this background, we argue that the more clearly

contract workers try to separate work and private life, the less likely are conflicts in these areas.

Hypothesis 3: The clearer the segmentation of the different roles of work and private life, the less is...

(H3a) ...time-based work-to-life conflict.

(H3b) ...strain-based work-to-life conflict.

(H3c) ...behavior-based work-to life conflict.

(H3d) ...time-based life-to-work conflict.

(H3e) ...strain-based life-to-work conflict.

(H3f) ...behavior-based life-to-work conflict.

Studies have also identified relationship status as having an influence on work-life conflict (e.g., Byron, 2005; Ford et al., 2007; Michel et al., 2011). Relationships result in obligations, thus potentially leading to conflicts. However, there are also positive aspects, for example when a partner is supportive and thus helps reduce possible conflicts between work and private life (family support; e.g., Halbesleben et al., 2010). Nevertheless, it will be assumed that relationships can potentially result in more conflicts because according to role theory, a further life role as partner has to be fulfilled, from which more conflicts can emerge (Grzywacz & Marks, 2000; Ford et al., 2007). This conflict potential is likely to apply in particular to contract workers because flexibility demands and the project nature of their work means that there is a greater need for coordination with their partner. Moreover, for IT contract workers in particular, it is often the case that due to their work, they have to travel frequently and are only at home with their families at weekends (Süß & Sayah, 2011), thus creating problems with reconciling work and private life. Against this background, we argue that contract workers in a relationship are more likely to perceive a stronger work-life conflict than those not in a relationship.

Hypothesis 4: Contract workers in a permanent relationship experience stronger...

(H4a) ...time-based work-to-life conflict than those without a partner.

(H4b) ...strain-based work-to-life conflict than those without a partner.

(H4c) ...behavior-based work-to life conflict than those without a partner.

(H4d) ...time-based life-to-work conflict than those without a partner.

(H4e) ...strain-based life-to-work conflict than those without a partner.

(H4f) ...behavior-based life-to-work conflict than those without a partner.

Furthermore, studies show that children can have an influence on work-life conflict because the presence of children requires a different life organization, and additional obligations as mother or father need to be fulfilled (e.g., Kinnunen et al., 2004; Ford et al., 2007). This influence is not only dependent on the number of children but also on their age: The younger the children, the more intensive are their care requirements, thus leading to greater obligations and conflict potential. To date, studies have employed various ways to measure this influence. Some ask about number of children, while others measure number of children in a household, and others still simply ask respondents whether they have children (Byron, 2005). It is therefore difficult to

compare these studies and draw conclusions from them. However, it can be argued that the number of children leads to greater conflicts between work and private life, but that the resulting work-life conflict lessens as children become older (Byron, 2005). We therefore suggest that the number and age of children have an influence on the perceived work-life conflict of contract workers. Contract working enables some contract workers to organize their working time and work place flexibly, thus simplifying child care. However, for others, it complicates child care due to clients' demands for flexibility and mobility (Süß & Sayah, 2011). As contract workers generally have to meet clients' demands, it can be assumed that they are not completely free to organize their working time flexibly, thus resulting in greater conflicts if they have children. We assume that work-life conflicts are particularly great when children are younger because of the intensive nature of their care requirements. In this study, younger children are defined as those less than seven years old. This threshold has been chosen because children in Germany generally start school between the age of 6 and 7. It can thus be assumed that care of children under seven is particularly intense, thus promoting conflicts between work and family.

Hypothesis 5: The greater the number of younger children, the stronger is...

(H5a) ...time-based work-to-life conflict.

(H5b) ...strain-based work-to-life conflict.

(H5c) ...behavior-based work-to life conflict.

(H5d) ...time-based life-to-work conflict.

(H5e) ...strain-based life-to-work conflict.

(H5f) ...behavior-based life-to-work conflict.

Over and above the direct influence of the independent variables on the dependent variable, we also assume that there will be an interaction effect regarding gender of the contract worker combined with the number of younger children. Such an interaction effect is included in multivariate statistical analyses when it is assumed that there is a simultaneous effect of two variables on the dependent variable (Aiken & West, 1991). Thus the interaction effect is used to consider the effect of one variable in interaction with another variable. We assume that the number of younger children has a gender-specific effect on work-life conflict. It can be assumed that the number of younger children has a particularly strong influence on the work-life conflict of women because, despite new life patterns, the involvement of men in child care, and the use of external child care facilities, responsibility for child care still lies primarily with women. Also Byron's (2005) meta-study showed that mothers tend to experience more conflicts between work and private life (in both directions) than fathers. Also other studies show that women with younger children experience more conflicts than women with older children and than men (e.g., Crouter, 1984; Higgins et al., 1994). Thus, there is likely to be an interaction effect in that women with younger children experience greater conflict between work and private life than men.

Hypothesis 6: A larger number of younger children results in stronger...

(H6a) ...time-based work-to-life conflict for female contract workers than for male contract workers.

- (H6b) ...strain-based work-to-life conflict for female contract workers than for male contract workers.
- (H6c) ...behavior-based work-to life conflict for female contract workers than for male contract workers.
- (H6d) ...time-based life-to-work conflict for female contract workers than for male contract workers.
- (H6e) ...strain-based life-to-work conflict for female contract workers than for male contract workers.
- (H6f) ...behavior-based life-to-work conflict for female contract workers than for male contract workers.

Empirical studies on work-life conflict commonly analyze the demographic characteristics of respondents, particularly the role of gender (Korabik et al., 2008). It is usually argued that different socialization patterns and typical role-perceptions of men and women have implications for work-life conflict (Voydanoff, 2002). However, empirical studies reveal different findings. On the one hand it is argued that perceptions of work-life conflict are gender-specific (e.g., Grzywacz & Marks, 2000; Voydanoff, 2002). On the other hand, Byron's (2005) meta-study showed that gender has no significant influence on the perceived work-life conflict. As it can be assumed that gender effects are similar for contract workers and employees, drawing on Byron's (2005) meta-analysis, we argue that there are no significant differences between male and female contract workers in terms of their overall perception of work-life conflicts. However, in our study, gender is included as a control variable to control for effects on work-life conflict. Furthermore, although we expect that there is no direct effect of gender, we assume that it has an effect in interaction with the number of younger children (hypotheses 6a-f).

Furthermore, to check possible effects on work-life conflict we control for age, tenure, sector, and whether individuals have worked in a permanent employment before becoming a contract worker.

4 Empirical analysis

4.1 Description of the study

Data was collected between February and April 2011 via an online questionnaire. As mentioned above, our study targeted contract workers of the IT and media sectors. They were informed of the survey and provided with the link to the survey through the newsletters of companies and associations, and adverts in journals. 143 contract workers took part in the questionnaire, of whom 61 were from the IT sector and 82 from the media sector. 11% of the IT contract workers were female and 89% male, while gender of the media contract workers was more uniformly distributed (54% female, 46% male). This gender distribution is approximately representative of the total population in the two sectors. The respondents belonged to different age groups: the median age for both sectors was approximately 44 years (standard deviation 8.66 years). The respondents had been contract workers for on average 10.66 years (standard deviation 7.04 years). Before becoming contract workers, 77.5% of them had been in permanent employment for an average of 7.19 years (see table 1).

Table 1: Descriptive data of the sample

	gender		age		tenure		permanent relationship		children	
	m	f	Mean	s.d.	Mean	s.d.	yes	no	yes	no
media (N = 82)	38	44	43,39	9,67	11,62	7,83	61	21	25	57
IT (N = 61)	54	7	44,89	7,06	9,36	5,60	52	9	38	23
total (N = 143)	92	51	44,03	8,66	10,66	7,04	113	30	63	80

The questionnaire contained the following items: the dependent variable ‘work-life conflict’ was measured using a recognized scale from the work-family conflict literature. A number of scales have been developed to measure work-family conflict (e.g. Bohlen & Viveros-Long, 1981; Kopelman et al., 1983; Gutek et al., 1991; Frone et al., 1992; Netemeyer et al., 1996). However, a common criticism of these scales is that they either do not reflect the bi-directionality of the concept or do not consider all three dimensions of conflict (Allen et al., 2000; Matthews et al., 2010). The scale developed by Carlson et al. (2000) solves these problems and is regarded ‘as one of the most theoretically and psychometrically sound measures of work-family conflict available to researchers today’ (Matthews et al., 2010, p. 76). It has been used and has proved reliable in many other studies (see for example Bruck et al., 2002; O’Driscoll et al., 2003; Allen & Armstrong, 2006; Hughes & Parkes, 2007; Spector et al., 2007). In the present investigation, work-life conflict was therefore also measured using Carlson et al.’s (2000) six conflict constructs, each comprising a specific conflict dimension with regard to one direction of conflict (time-based, strain-based, and behavior-based conflict for work-to-life conflicts as well as life-to-work conflicts). The scale of Carlson et al. (2000) consists of three items for each conflict construct, resulting in 18 items. The items were translated into German with the help of German and English native speakers. Where necessary, they were modified to refer to private life rather than family in order to reflect the connotation of work-life conflict adopted in this paper. The items were also adapted to the specifics of work contracting where necessary. The 18 items contained statements; the respondents could provide their answers using a 5 point Likert scale to indicate the extent to which they agreed with the statements (1 = completely disagree, 5 = completely agree). We conducted confirmatory factor analyses to check whether the items provided by the Carlson’s scale load on the six conflict constructs. The results suggest that the three conflict constructs for each direction of the work-life conflict model fit the data well (work-to-life conflict: TLI = .98; CFI = .99; RMSEA = .04; and life-to-work conflict: TLI = .95; CFI = .96; RMSEA = .05) (selection of indexes according to Schreiber et al. 2006). The reliabilities of the six conflict scales are on a good level (Cronbach’s α ranging from .77 to .87) with exception of the time-based life-to-work conflict which is on a lower level (Cronbach’s α = .58).

The independent variables and the control variables were measured either by using demographic variables (e.g. age, gender, family status) or by using further scales. Elements of the ‘boundary management strategy’ scale developed by Kossek et al. (2006) were used to measure whether contract workers draw a boundary between the

roles of their work and private life (segmentation) or integrate them. The pretests revealed that some items such as 'I only take care of personal needs at work when I am "on Break" or during my lunch hour' or 'It would be rare for me to read non-work related materials at work' are difficult to answer for contract workers because they do not have a clear assignment of 'being at work'. Therefore, we restricted ourselves to use four items that proved to be reliable in our pretests: 'I prefer to not talk about my family issues with most people I work with', 'I tend to not talk about work issues with my family', 'I actively strive to keep my family and work-life separate', and 'I tend to integrate work and family roles through the work day'. The reliability of the scale is satisfactory (Cronbach's $\alpha = 0.68$) and is close to the reliability measured in the original investigation ($\alpha = 0.70$). This scale was also translated into German, modified to refer to private life rather than family life, and operationalized using a 5 point Likert scale (1 = completely disagree, 5 = completely agree). Higher values reflect attempts to segment work and private life.

Income levels were measured by asking contract workers to provide their average annual gross income. The scale ranged from 1 = less than 20,000€, 2 = 20,000-40,000€, 3 = 40,000-60,000€, and so on until 8 = over 140,000€.

The contract workers were also asked to indicate their relationship status (0 = single; 1 = in a permanent relationship). In case of children, respondents were asked about the number and their age. The respondents were also asked to indicate their average weekly working hours, the length of time they had been contract workers, and if applicable the length of time in permanent employment before they became contract workers. Moreover, they were asked to indicate which sector they were working in (0 = IT, 1 = media).

Further data were collected in order to gain a more comprehensive picture of the work-life conflict of the contract workers. For example they were asked to indicate the extent to which individual parts of their private life (e.g. relationship, friends, and social commitments) conflicted with their work. They were also asked where they primarily conducted their work (e.g. home office, office on the client's premises).

Hierarchical linear regression analysis was used to analyze the data and to test the hypotheses. Thereby the strength and the direction of influence of the variables on work-life conflict could be analyzed, and thus the hypotheses tested. As we conducted separate analyses for each conflict construct, six regression models were computed. A hierarchical procedure is appropriate in order to measure the explanatory power which additional variables have for the model (Cohen & Cohen, 1983). Thus, after the control variables (age, sector, tenure, employment before contract working, and gender) had been included in the first step of the regression analysis, the independent variables (working hours per week, income, segmentation of work and private life, relationship status, and number of younger children) were included in a second step. Finally the interaction effect (gender*number of younger children) was included in the analysis in a third step. Following recommendations in the literature, the continuous variable (number of younger children) was mean-centered before inclusion (Aiken & West, 1991).

4.2 Results

Mean values, standard deviations, variance-inflation factors, and correlations of the control variables and independent variables are shown in Table 2. We find weak to moderate correlations between the variables in our analyses. However, variance inflation factors are well-below critical values mentioned in the literature (O'Brien, 2007).

Table 2: Means, standard deviations, variance inflation factors (VIF) and intercorrelations among study variables

variables	mean	s.d.	VIF	1.	2.	3.	4.	5.	6.
1. time-based work-to-life conflict	3.09	1.00		1					
2. strain-based work-to-life conflict	2.72	1.05		.651***	1				
3. behavior-based work-to-life conflict	2.51	1.00		.350***	.314***	1			
4. time-based life-to-work conflict	2.14	0.80		.330***	.240**	.273***	1		
5. strain-based life-to-work conflict	2.18	0.83		.195**	.331**	.278***	.401***	1	
6. behavior-based life-to-work conflict	2.35	0.93		.280***	.283***	.654***	.323***	.273***	1
7. age	44.03	8.66	1.71	-.026	-.158	-.042	-.079	-.088	-.030
8. tenure	10.66	7.04	1.86	-.087	-.194*	-.113	-.051	-.059	-.127
9. employed in permanent job before	1.76	0.43	1.30	.063	.112	.032	.070	-.089	.077
10. sector	0.57	0.50	2.05	-.035	-.091	-.043	-.002	.123	-.103
11. gender	0.36	0.48	1.40	.054	.032	-.115	-.108	-.071	-.180*
12. working hours per week	47.56	12.06	1.05	.401***	.289***	.165*	-.099	-.074	.058
13. income	3.63	2.26	2.01	-.050	-.064	-.066	-.052	-.187*	-.087
14. segmentation of work and private life	2.67	0.81	1.14	.112	.177**	.196*	.012	-.088	.202*
15. relationship status	0.79	0.41	1.15	-.102	-.116	.070	-.078	.032	-.075
16. younger children	0.18	0.50	1.24	.089	-.001	.094	.168*	.021	.068

variables	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. time-based work-to-life conflict										
2. strain-based work-to-life conflict										
3. behavior-based work-to-life conflict										
4. time-based life-to-work conflict										
5. strain-based life-to-work conflict										
6. behavior-based life-to-work conflict										
7. age	1									
8. tenure	.523***	1								
9. employed in permanent job before	.160	-.216**	1							
10. sector	-.086	.160	-.195*	1						
11. gender	-.104	.074	-.153	.436***	1					
12. working hours per week	.108	.050	.018	-.052	-.010	1				
13. income	.172*	.098	.261**	-.632***	-.410***	.064	1			
14. segmentation of work and private life	-.050	-.112	.004	-.207*	.011	.146	.069	1		
15. relationship status	.151	.124	.106	-.132	-.154	.068	.190*	-.173*	1	
16. younger children	-.117	.040	.012	-.140	-.184*	-.015	.186*	.015	.189*	1

Note: $n \leq 143$; * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$; two-tailed tests.

Therefore, we argue that multicollinearity does not seriously affect our analyses. There are no strong correlations between the control and independent variables; the variables income and sector correlate most strongly which can be explained by the relatively low income levels in the media sector, compared to the higher income levels which are typical of the IT sector. Furthermore, tenure and age correlate with each other, which is plausible because tenure increases with age. Similarly, the correlations between gender and sector can be explained by the fact that in the present sample (and the total population) women are rare in the IT sector, while there is a uniform distribution between men and women in the media sector. The correlations between working hours per week and time-based, as well as strain-based work-to-life conflict is plausible as these conflict dimensions are supposed to rise with increasing working hours.

Six hierarchical regression analyses were conducted to test our hypotheses. The results are summarized in table 3 (dimensions of work-to-life conflict) and table 4 (dimensions of life-to-work conflict).

Table 3: Results of the regression analyses for work-to-life conflicts

	time-based work-to-life conflict		strain-based work-to-life conflict		behavior-based work-to-life conflict	
	β	standard error	β	standard error	β	standard error
<i>Model 1: control variables</i>						
age	0,00	0,10	-0,18 +	0,10	-0,02	0,11
tenure	-0,05	0,11	-0,01	0,11	-0,06	0,11
employed in permanent job before	0,09	0,09	0,17 +	0,09	0,05	0,09
sector	-0,10	0,11	-0,18 +	0,11	-0,01	0,12
gender	0,05	0,09	0,00	0,09	-0,18 +	0,10
ΔR^2 (corrected)	-0,02		0,03		-0,01	
<i>Model 2: independent variables</i>						
working hours per week	0,42 ***	0,08	0,31 ***	0,08	0,15 +	0,08
income	-0,12	0,11	-0,17	0,11	-0,18	0,12
segmentation between work and life	0,01	0,08	0,08	0,08	0,20 *	0,09
relationship status	-0,14 +	0,08	-0,11	0,08	0,08	0,09
younger children	0,12	0,09	-0,03	0,09	0,04	0,09
ΔR^2 (corrected)	0,18 ***		0,10 **		0,06 *	
<i>Model 3: interaction variable</i>						
gender*younger children	0,09	0,08	0,16 +	0,08	0,16 +	0,09
ΔR^2 (corrected)	0,00		0,01 +		0,01 +	
R^2 (corrected)	0,16		0,14		0,06	
F	3,42 ***		3,14 ***		1,85 *	

Note: n = 143 +p ≤ ,10 *p ≤ ,05 **p ≤ ,01 ***p ≤ ,001; two-tailed tests.

Standardized regression coefficients and standard errors are shown

The following presentation of the results and testing of the hypotheses will be based on Model 3 which contains all variables. When regarding the three conflict dimensions for work-to-life, the regression analysis for time-based conflict is highly significant ($F = 3.42$; $p < .001$) and provides an explanatory power of 16%. The regression analysis for strain-based work-to-life conflict is also highly significant ($F = 3.14$; $p \leq .001$) and explains 14% of variance. The regression analysis for behavior-based work-to-life conflict is significant ($F = 1.85$; $p \leq .05$) and provides an explanatory power of 6%.

Table 4: Results of the regression analyses for life-to-work conflicts

	time-based life-to-work conflict		strain-based life-to-work conflict		behavior-based life-to-work conflict	
	β	standard error	β	standard error	β	standard error
<i>Model 1: control variables</i>						
age	-0,09	0,11	-0,07	0,11	-0,02	0,10
tenure	0,07	0,11	-0,01	0,11	0,00	0,11
employed in permanent job before	0,15	0,09	-0,03	0,09	0,12	0,09
sector	-0,03	0,12	0,05	0,12	-0,14	0,11
gender	-0,19 *	0,10	-0,23 *	0,10	-0,27 **	0,09
ΔR^2 (corrected)	-0,01		0,02		0,01	
<i>Model 2: independent variables</i>						
working hours per week	-0,07	0,08	-0,03	0,08	0,06	0,08
income	-0,14	0,12	-0,19 *	0,12	-0,30 **	0,11
segmentation between work and life	0,02	0,09	-0,04	0,09	0,18 *	0,09
relationship status	-0,12	0,09	0,04	0,09	-0,08	0,09
younger children	0,11	0,09	-0,05	0,09	0,02	0,09
ΔR^2 (corrected)	0,02		-0,01		0,06 *	
<i>Model 3: interaction variable</i>						
gender*younger children	0,23 *	0,09	0,25 **	0,09	0,20 *	0,09
ΔR^2 (corrected)	0,04 *		0,04 **		0,03 *	
R^2 (corrected)	0,05		0,05		0,10	
F	1,64 *		1,74 *		2,40 **	

Note: $n = 143$ * $p \leq ,10$ * $p \leq ,05$ ** $p \leq ,01$ *** $p \leq ,001$; two-tailed tests.

Standardized regression coefficients and standard errors are shown

When regarding the three regression analyses for the life-to-work conflict constructs, it has to be stated that only the regression model for behavior-based conflict is significant ($F = 2.4$; $p \leq .01$) and provides a corrected R^2 of 10%. The regression models for time-based ($F = 1.6$; $p = .1$) and strain based ($F = 1.7$; $p = .07$) life-to-work conflicts do not achieve the required level of significance ($p \leq .05$; Backhaus et al., 2010) and are therefore excluded from further analyses.

Hypotheses 1a-f stated that the number of working hours has an effect on the different work-life conflict constructs. The analyses for time-based (H1a) and strain-based (H1b) work-to-life conflicts reveal that the number of working hours has a highly significant ($p < .001$) and strong positive effect (tb: $\beta = .42$; sb: $.31$). It also slightly influences behavior-based work-to-life conflicts (H1c) ($\beta = .15$; $p < .1$). Therefore, hypotheses 1a-c can be confirmed. However no effects could be found for life-to-work conflicts. Thus, hypotheses 1d-f have to be rejected.

Higher income was supposed to reduce work-life conflicts (H2a-f). An influence of income can be detected for behavior-based life-to-work conflicts (H2f; $\beta = -.30$; $p \leq .01$) but not for the other conflict constructs (H2a-e). Thus, hypothesis H2f can be confirmed, but hypotheses 2a-e have to be rejected.

In hypotheses 3a-f we assumed that contract workers who attempt to separate between work and private life will experience less work-to-life conflict. Contrary to our hypotheses, contract workers who separate between work and private life, experience higher behavior-based conflicts in both directions (work-to-life: $\beta = .20$; $p < .05$; life-to-work: $\beta = .18$; $p < .05$) than those who integrate these two spheres. Thus, hypotheses 3a-f have to be rejected.

Hypotheses 4a-f postulated that contract workers in a permanent relationship would experience stronger work-life conflicts than those without a partner. All hypotheses with regard to permanent relationship have to be rejected as there is a slight, but negative, effect of the relationship status on time-based work-to-life conflict ($\beta = -.14$; $p < .1$), and no significant effects can be detected for the other conflict constructs.

Furthermore, we assumed that the number of younger children has an effect on work-life conflicts (H5a-f). These hypotheses cannot be confirmed as no direct effect of younger children can be detected in our regression analyses. However, as postulated in hypothesis 6a-f the interaction term of gender and younger children has a significant and positive effect for the following conflict constructs: Strain-based (H6b) and behavior-based work-to-life conflicts (H6c; $\beta = .16$; $p < .1$ for both constructs), as well as for behavior-based life-to-work conflict (H6f; $\beta = .20$; $p < .05$). In order to facilitate its interpretation, this interaction is depicted in figure 1 adopting the usual form (Aiken & West, 1991).

The interaction term has similar effects on the three presented conflict constructs. While work-life conflict among men only increases slightly when the number of younger children (up to 7 years old) rises, the increase of conflicts is very steep for women, rising almost to the top of the scale. These results therefore confirm hypotheses 6b, 6c, and 6f. Furthermore, surprisingly, where there are a low number of younger children, the perceived work-life conflict is even slightly lower among women than men (except for time-based work-to-life conflict), thus emphasizing the strong effect which younger children have on the perceived work-life conflict of women.

5. Conclusion

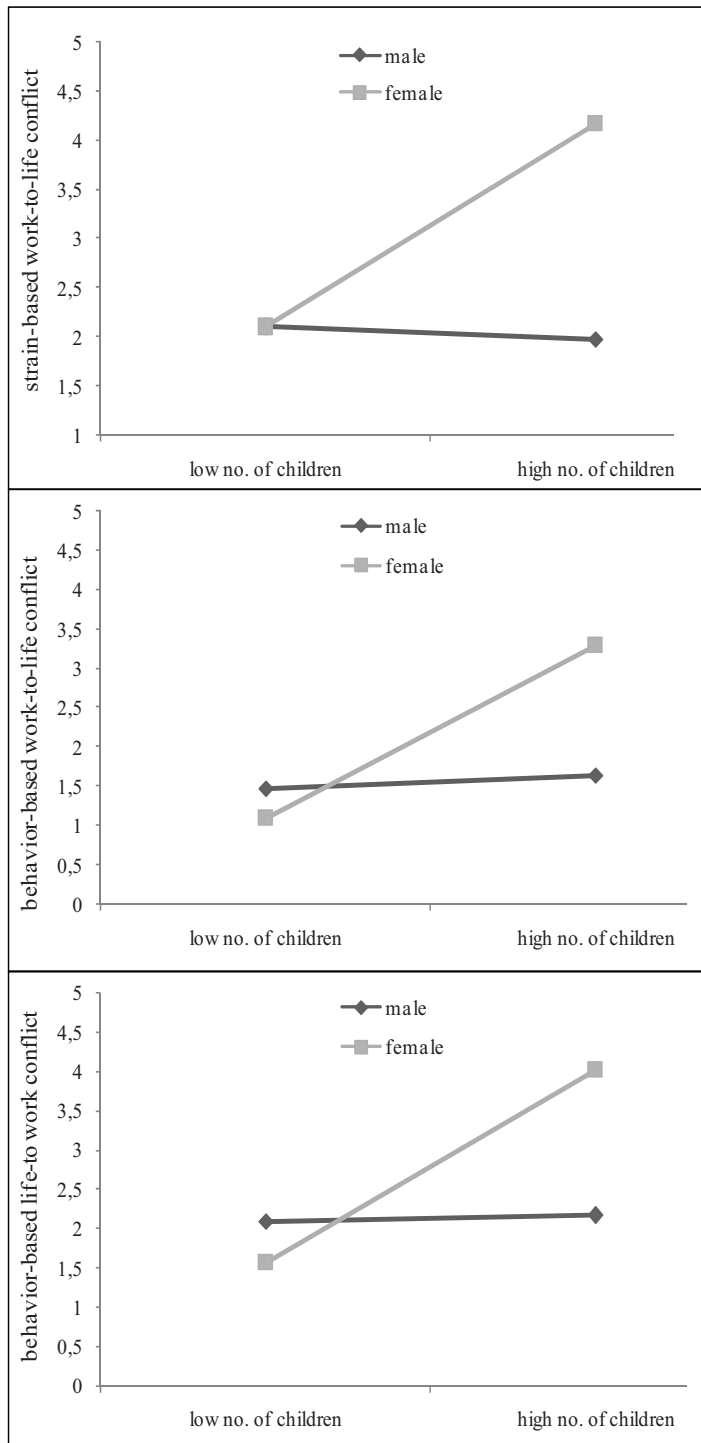
5.1 *Discussion of the results*

Our research objective was to investigate the antecedents of contract workers' work-life conflict and thus to make a contribution to empirical research on this topic, as the literature on work-life conflict has mainly focused on permanent employees. Therefore, little is known yet about the factors influencing the experienced conflicts for contract workers.

Our results show that in terms of working conditions, the number of working hours has a significant effect on all three dimensions of work-to-life conflicts (H1a-c). Strong and highly significant effect can be seen with regard to time-based and strain-based conflicts. It is quite plausible that long working hours have a particular effect on these conflict dimensions due to the limited amount of time and energy which has to be divided between the different life roles of work and private life. Furthermore, it is not surprising that long working hours influence conflicts that result from working life and not vice-versa.

As proposed in hypothesis 2f, our study shows an influence of income on behavior-based life-to-work conflicts (as the time-based and strain-based regression models were not significant, this is only discussed for behavior-based life-to-work conflicts). While other studies, focusing on employees, found that income correlates positively with work-life conflict (see for example Byron, 2005), there are several reasons as to why higher income can lead to a reduction of conflicts between work and life with regard to contract workers. This can be explained particularly by the specifics of contract working, such as the project-based and self-employed nature of the work, thus meaning that income is subject to market fluctuations. High income provides a backup, thus lessening the need to take on extra work. As our study reveals that life-to-work conflicts are reduced, it is plausible that contract workers with a higher income use external services to help with private life responsibilities (e.g. home helpers and child care services), thus lessening the burden on them and in turn, reducing conflicts between work and private life.

Contrary to hypotheses 3a-f, preferences of contract workers to separate work and private life lead to an increase of behavior-based conflicts in both directions. As literature focusing on employees usually states that clear segmentation helps to reduce conflict (e.g. Jackson, 2002; Powell & Greenhaus, 2010), it might be that the reverse finding of our study is particular for contract workers. Thus, we suggest that due to their self-employment, a blurring of the boundaries between work and private life is normal and unproblematic, for example, if they regard it as a feature of their work that they are constantly on-call. Therefore, these conditions can lead to more conflicts for those contract workers who prefer to separate these two spheres. Research in this area is relatively recent (e.g. Ashforth et al., 2000; Clark, 2000; Kossek et al., 2006) and our findings advocate that more focus needs to be put on investigating perceptions of boundaries and the conditions under which they become burdens for the individual.

Figure 1: Interaction variable gender*younger children

With regard to hypotheses 4a-f, one explanation as to why, contrary to our expectations, relationship status reduces time-based work-to-life conflicts (H4a), could be that relationships do not mean that an additional life role with extra responsibilities has to be fulfilled. Rather, a partner can be supportive (e.g. Halbesleben et al., 2010), thus reducing experienced conflicts. For example, private life responsibilities can be divided and thus result in less time-based conflicts.

A direct effect of the number of younger children, as assumed in hypotheses 5a-f could not be confirmed. However, it is interesting that the number of younger children has an effect on various conflict constructs when regarded in interaction with gender (hypotheses 6b,c,f). Within contract workers with younger children, women experience much stronger conflicts than men. This interaction effect highlights that the perceived work-life conflict of women is strongly influenced by the number of younger children, while work-life conflict among men is hardly affected at all. Presumably, women still hold the main caring responsibilities for younger children. This might be particularly difficult for female contract workers when they need to meet clients' demands for flexibility. If however one regards the influence of the number of younger children without interaction with gender (H5a-f), it has no significant influence on perceptions of work-life conflict. This could be due to the fact that this effect is particularly relevant for female contract workers and that, due to gender distribution in the IT sector, the majority of the contract workers in our sample are male.

All in all, our study shows that the hypotheses which we derived from the extant literature on permanent employees were only partly confirmed. For example, similar to employees, our study showed that the number of working hours has a strong influence on the work-life conflict of contract workers. In contrast, our findings suggest that the income of contract workers reduces work-life conflict and therefore has an opposite influence than supposed for employees (as assumed in hypothesis 2f). Furthermore, we found an opposite influence of the segmentation of work and private life on work-life conflict. Moreover, for female contract workers, the number of younger children had a considerable effect on their work-life conflict. In contrast, the number of younger children, when its interaction with gender was not considered, did not have an effect on work-life conflict. Our study makes a contribution to the literature in showing that contract working has different implications for the perceived work-life conflict. This suggests that findings on the factors that influence the work-life conflict of employees should be extended by further studies to explain the work-life conflict of contract workers. Thus, future research is needed as outlined in the next section.

5.2 Limitations and need for further research

Our study is not without limitations. Firstly, the results are based on the self-perceptions of contract workers and are therefore subjective. Moreover, we focused on contract workers in the IT and media sectors, which limits the generalizability of our results for contract workers in other sectors, even though our analysis showed that sector had no relevant influence on perceptions of work-life conflict. However, this may be due to the similar characteristics of contract workers in the IT and media sectors, who are highly skilled and carry out knowledge-based work. The applicability

of our results to contract workers in other sectors and with other skills levels is therefore difficult. Studies of contract workers in other sectors are thus necessary in order to determine whether the results generated in this study also apply to contract workers in other sectors or are specific to contract workers in the IT and media sectors.

The antecedents in our conflict models explain between 10% and 16%, and therefore a relatively small amount of the variance of work-life conflict among the contract workers. Moreover, some factors, which other investigations found to be relevant in explaining work-life conflict among employees, had no relevant influence in our study. This suggests that further influencing factors need to be integrated into future studies on work-life conflict among contract workers in order to gain a more comprehensive picture of the relevant factors influencing their work-life conflict. For example the autonomy of freelancers could be considered. It seems plausible that, whether contract workers can determine their working hours and place of work flexibly, or are subject to concrete demands on the part of their clients, could have an influence on work-life conflict. Moreover, future studies need also to take personal skills (e.g. coping style and skills) into consideration, in order to generate additional explanatory power.

As this study focuses on contract workers, it is not possible to directly compare their perceptions of work-life conflict with people in other employment forms. A more comprehensive analysis, which includes people with different employment forms, could for example reveal whether the different characteristics of these employment forms influence the degree of work-life conflict. In this context, the effect of job insecurity could for example be investigated, as this varies depending on employment form and it can be assumed that it has implications for work-life conflict.

Further research on work-life conflict among contract workers is particularly relevant in the light of the increasing number of contract workers. This should include not only the conflict perspective but also positive aspects of the interaction between work and private life (e.g. enrichment) in order to gain a comprehensive picture of work-life balance among contract workers.

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