

## Influences of Work-Family Interface on Job and Life Satisfaction

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**Abstract** Research investigating the relationship between family and work domains, according to a reductionist approach, has traditionally focused on the negative aspects of the work-family relationship. However, over the past 15 years a number of studies have also focused on the positive aspects of family and work relationships and on the interactions between the work-family interface and outcomes such as job and life satisfaction. These research studies have made it possible to capture different facets of the relationship between family and working life, and to clarify the specific nature of these interactions. In the present study, we tested a model that included positive and negative interactions between work and family as predictors of job and life satisfaction. We also examined the role of some of the potential moderators (work engagement, organizational and family support) of these relationships, using a sample of 427 Italian employees working in public administration. In our analysis, we first tested the factorial structure of the work-family interface measure (Kinnunen et al. *Scandinavian Journal of Psychology*, 47, 149–162 2006). Factor analysis confirmed a four-factor model: negative work-to-family interface, negative family-to-work interface, positive work-to-family interface, and positive family-to-work interface. Secondly, we analyzed the relationship between the work-family interface, job satisfaction and life satisfaction. Path analysis showed that the factors involved in the work-family interface influenced directly and indirectly life satisfaction, job satisfaction and work engagement. This analysis also showed that work engagement had a direct strong effect on job satisfaction and a direct weaker effect on life satisfaction. This pattern of findings is consistent with a causal sequence in which the work-family interface (WIF) and family-work interface (FIW) can increase or reduce a satisfaction-specific domain. Our results highlight the importance of using a theoretical and empirical model that integrates

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and focuses on both the positive and negative aspects of the work-family relationship. Moreover, this pattern demonstrates the potential consequences of this influence on employees' working life and general well-being.

**Keywords** Work-family interface · Life satisfaction · Job satisfaction · Work engagement

## Introduction

In all European member states, women are more likely than men to be outside the labor force (Eurostat 2011), and indeed in Italy, women's participation in the labor force is one of the lowest in Europe (48.5 % vs 58.5 %) (ISTAT 2012). However, the gender gap is generally decreasing (Eurostat 2011). This means that, although women continue to perform the vast majority of household tasks (Aliaga 2006; Eurostat 2011; Knudsen and Waerness 2008), the number of dual-earner families has progressively increased and responsibilities for work, housework, and child care are no longer confined to traditional gender roles (Nicklin and McNall 2013).

These changes have led women and men to renegotiate their family and working roles, to identify new coping strategies, and to manage different roles (Major and Germano 2006). Problems and issues encountered by employees in balancing the work-family relationship have been studied by a great body of research on the intersection of individuals' work and family lives (e.g., Byron 2005; Mesmer-Magnus and Viswesvaran 2009; Riley and Bowen 2005; Treistman 2004), and on the effects of this intersection on individual health and well-being (e.g., Mullen et al. 2008), and on the general quality of people's lives (e.g., Zhang and Liu 2011).

The significant number of studies on these topics has also been subject to a large number of reviews and meta-analyses (e.g., Amstad et al. 2011; Zhang and Liu 2011<sup>1</sup>), which, in our opinion, reveals that research concerning the work-family relationship has been initially based on the reductionist scarcity of resources approach (Goode 1960). This approach postulates that individuals have a fixed amount of time and energy and that multiple roles can generate strain because they deplete physical and psychological resources. Based on this assumption, the work-family conflict perspectives consider the simultaneous participation in work and family domains as a cause of an inter-role conflict (Kahn et al. 1964) "in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role" (Greenhaus and Beutell 1985, p. 77). Work-family conflict has been increasingly recognized as consisting of two distinct, though related, concepts: work interference with family and family interference with work. The former occurs when work interferes with family life, the latter occurs when family life interferes with work (Frone 2003; Frone et al. 1997).

Although the benefits of multiple roles were already recognized in the 1970s (Marks 1977; Sieber 1974), work-family conflict perspectives have dominated work-family research and negative influences between the two domains have been particularly underlined. The hypothesis of negative outcomes deriving from work-family conflict

<sup>1</sup> See also Allen et al. 2000; Byron 2005; Ford et al. 2007; Hill 2005; Kossek and Ozeki 1998.

has been confirmed by several empirical studies, which revealed consequences on different dimensions (e.g., Amstad et al. 2011; Ford et al. 2007). Among the most studied outcomes we highlight work-related outcomes such as job satisfaction (e.g., Perrewe et al. 1999) and organizational commitment (e.g., Aryee et al. 2005), family-related outcomes such as marital satisfaction (e.g., Voydanoff 2005) and family satisfaction (e.g., Cardenas et al. 2004), and finally the so-called domain-unspecific outcomes such as life satisfaction (e.g., Aryee et al. 1999; Greenhaus et al. 2003) and psychological strain (e.g., Kelloway et al. 1999).

Studying the benefits of multiple roles has been neglected until recent years, when the positive effects of the work-family relationship began to gain growing attention (see e.g., Barnett 1998; Rothbard 2001; Ruderman et al. 2002). Nowadays, researchers analyze the partial and incomplete view that emerges when only the negative aspects of family and work relationships are considered (Nicklin and McNall 2013), and they point out the positive side of these relationships as well (Frone 2003; Geurts and Demerouti 2003; Greenhaus and Powell 2006).

Rather than the idea of inter-role conflict, several studies have introduced a perspective focused on the concept of enhancement, referring to the social and psychological resources acquired by participation in multiple life roles (Ruderman et al. 2002). This perspective suggests that participation in multiple roles provides a greater number of opportunities and resources to the individual that can be used to promote growth and better functioning in other life domains (Barnett 1998), and therefore will provide individuals with enriching experiences (Rothbard 2001). In the role enhancement perspective the positive consequences of work and family interactions were defined in different ways. Some reviews (Frone 2003; Geurts and Demerouti 2003) suggest that the relationships between work and family may also have positive consequences, more recently labeled “positive spillover” (Barnett 1998; Grzywacz and Marks 2000),<sup>2</sup> “enrichment” (Greenhaus and Powell 2006; Rothbard 2001),<sup>3</sup> and “facilitation” (Frone 2003; Grzywacz and Butler 2005; Hill 2005).<sup>4</sup> Although work-family research has been dominated by work-family conflict perspectives, over the past 15 years many studies have focused on the positive effects of the work-family relationship (e.g., Frone 2003; Grzywacz and Butler 2005; Hill 2005; Greenhaus and Powell 2006; Carlson et al. 2006). These research studies have made it possible to capture different facets of the positive relationships between family and working life.

<sup>2</sup> Positive spillover theory postulates a similarity between what occurs in the work environment and what occurs in the family environment (Staines 1980), such that happiness at work leads to happiness at home without boundaries. This theory focuses on moods, skills, values, and behaviors transferred from one role to another (Carlson et al. 2006).

<sup>3</sup> The theory of work-family enrichment (Greenhaus and Powell 2006) suggests that support and resources from one domain can enhance performances in other domains through instrumental and affective paths. In the instrumental path, resources, such as skills and money, are transferred from one role to the other; in the affective path, positive moods and emotions derived from role experiences are transferred to other domains.

<sup>4</sup> Work-family facilitation is the “extent to which participation at work (or home) is made easier by virtue of the experiences, skills, and opportunities gained or developed at home (or work)” (Frone 2003, p. 145). Work-family facilitation is a form of synergy where resources associated with one role make participation easier in the other role. This form of facilitation is rooted in previous studies (Marks 1977; Sieber 1974) that suggested that holding multiple roles can be advantageous. Specifically, participation in multiple roles provides access to resources and experiences that contribute to individual fulfillment (Grzywacz and Butler 2005).

We argue that using the expression “family-work interface” is more accurate and more adequate to describe a research field without precluding the possibility that the nature of the exchange between the two domains may be both positive and negative. Analyzing the vast literature on this topic, we find that, although the empirical data show a positive effect that can come from the family to the work context (or vice versa), in many cases the term “conflict” has been used as synonymous with “relationship.” In our opinion, the influence of the reductionist approach based on conflict theory, which characterized for many years the research concerning the work-family relationship, led researchers to consider participation in multiple life roles as a potential cause of conflict and to underestimate—or to neglect—what was revealed from the role enhancement perspective, that is, the possibility of a beneficial exchange between them.

We assume it is necessary to integrate the approaches in order to articulate a multidimensional model of work-family relationships that considers both negative and positive influences (Frone 2003). We consider these premises more adequate to reveal the complexity of the interaction between work and family roles and, in our opinion, it should be the framework of new studies that clarify the specific nature of these interactions.

Our research is conducted within this theoretical framework and, in accordance with other researchers (e.g., Frone 2003; Geurts et al. 2003; Grzywacz and Marks 2000; Kinnunen et al. 2006), we have defined relationships between work and family as “interface” and we have analyzed both positive and negative influences of work on family (WIF) and both positive and negative influences of family on work (FIW).

The main theoretical and empirical contribution of our paper is to study a complex model of the work-family interface in relation to the important dimension of the individual quality of life in terms of job and life satisfaction.

The aims of our research are to analyze the structure of the work-family interface measure (Kinnunen et al. 2006) and to analyze the relationships between the work-family interface and job and life satisfaction.

First, we test the structure of the work-family interface measure developed by Kinnunen et al. (2006), which was intended to take into account both the positive and negative relationships between work and family demands in both directions. The confirmation of a four-factor model would demonstrate the existence of both the positive and negative aspects of the work-family and family-work interaction, and would support the use of a complex model in studying this topic (Frone 2003; Geurts and Demerouti 2003; Wagena and Geurts 2000).

Starting from these premises we formulated the following hypothesis:

H1: That the measure developed by Kinnunen et al. (2006) confirms the factorial structure.

Second, since some studies have revealed that positive outcomes of the family-work relationship have been underestimated, we verify the hypothesis that positive outcomes are associated with a positive interface, with the mediation of the same crucial dimensions. We test this hypothesis in relation to two of the main variables taken into account by research on the work-family relationship, which are job satisfaction and life satisfaction.

In the following theoretical sections we critically examine the literature on the relationship between the work-family interface, job and life satisfaction and we clarify

the role of some potential moderators (work engagement and organizational and family support).

In order to verify the first hypothesis and the others illustrated in the following sections, we conducted a research study, which involved all 427 Italian employees working in a public administration organization. Results clarify the relationships between the work-family interface, job and life satisfaction and some correlated variables. In the last part of the paper we examine theoretical and practical evidence-based considerations regarding the consequences of work-family relationships on individual well-being.

### Work-Family Relationship and Job Satisfaction

As discussed above, research has typically focused on the negative aspects of the work-family relationship, and since the construct of work-family conflict was introduced, a large body of literature has revealed its negative effects on individuals and their organizations (e.g., Amstad et al. 2011; Ford et al. 2007).

Among the different work-related outcomes, job satisfaction<sup>5</sup> is the variable that has attracted the most research, which has frequently been related to work-family conflict (see the meta-analyses by Allen et al. 2000; Kossek and Ozeki 1998). Despite the fact that some studies have not found any relationship between job satisfaction and work-family conflict (e.g., Aryee et al. 1999), there is agreement that work-family conflict is related to job satisfaction (e.g., Bruck et al. 2002), and the majority of studies have reported a significant relationship between work-family conflict and job satisfaction with diverse samples (e.g., Allen et al. 2000). However, there is debate about how the two directions of work-family conflict—work-to-family (WIF) and family-to-work (FIW)—predict job satisfaction (Grandey et al. 2005).

Several studies have revealed that outcomes associated with excessive work-to-family conflict include job dissatisfaction (e.g., Carlson and Kacmar 2000; Rode et al. 2007), and that when work-to-family conflict increases, job satisfaction decreases (Allen et al. 2000; Boles et al. 2003). Some meta-analyses (e.g., Kossek and Ozeki 1998) showed a consistent negative relationship between negative work-to-family/family-to-work conflict and job satisfaction, but the relationship was slightly stronger for job satisfaction and work-to-family conflict than for job satisfaction and family-to-work conflict. Some studies have also found that work-to-family conflict predicts job attitudes and family-to-work conflict has a comparatively minor role (e.g., Borovsky 1999), while others have shown inverse results (e.g., Frone et al. 1997). Other studies report that work-to-family conflict, but not family-to-work conflict, is negatively related to job satisfaction (e.g., Anafarta 2011<sup>6</sup>). Research has shown that both family-to-work conflict and work-to-family conflict can have a negative relationship with work outcomes, such as job satisfaction (e.g., Carlson et al. 2010; Perrewe et al. 1999). Finally, other authors have found that family-to-work conflict issues were related to higher job satisfaction (Boles et al. 2003).

<sup>5</sup> The construct of job satisfaction has been defined in different ways (e.g., Judge et al. 1998; Spector 1997). However, the main definition of job satisfaction in organizational research is Locke's definition (1976), which described this dimension as a pleasant or positive emotional state resulting from appraisal of one's job experience.

<sup>6</sup> See also Lambert et al. 2002; Noor 2002.

In spite of the large number of studies conducted on the negative relationship between family and work, few studies have considered the positive influences of family and work on job satisfaction. Among them, some researchers found that work-to-family facilitation was positively related to job satisfaction (Boyar and Mosley 2007; Hill 2005), and that both work-to-family and family-to-work facilitation were significantly related to job satisfaction (Balmforth and Gardner 2006). Moreover, other authors identified that family-to-work conflict and family-to-work facilitation are proximal predictors of job satisfaction, whereas work-to-family conflict and work-to-family enrichment are proximal predictors of family satisfaction (Sim and Bujang 2012).

In order to analyze the complexity of the interaction between work and family roles, we affirm that the positive influences between the two domains should be taken into account.

According to a nonreductionist model, we are able to reveal the complexity of the interaction between work and family roles. One aim of the present study was to examine the relationship between the work-to-family interface (positive and negative) and the family-to-work interface (positive and negative) and job satisfaction. According to this premise, our hypotheses were:

H2: That negative WIF and FIW are negatively related to employees' job satisfaction;

H3: That positive WIF and FIW are positively related to employees' job satisfaction.

### Work-Family Relationship and Life Satisfaction

A great body of research has examined the various psychological outcomes of negative influences of work on family and of family on work (e.g., Allen et al. 2000; Frone 2003), for example stress (Kelloway et al. 1999), general psychological strain (Grzywacz and Marks 2000), somatic/physical symptoms (Burke and Greenglass 1999), burnout and depression (Allen et al. 2000), and life dissatisfaction (e.g., Netemeyer et al. 1996<sup>7</sup>). Literature on the family-work relationship generally refers to these dimensions as “domain-unspecific outcomes” in order to distinguish them from outcomes on work or family life, which are considered “domain-specific outcomes” (e.g., Amstad et al. 2011).

In general, authors have found that employees who perceive their work-family interaction as negative experience psychological health symptoms at a higher level than employees who perceive their work-family interaction as positive (Geurts et al. 2003). The relationship between positive aspects of the work-family interface and individual outcomes has not been empirically investigated to any great extent (Demerouti and Geurts 2004; Geurts et al. 2003), but it seems that interaction between work and family, if positive, offers a better quality of life (e.g., Burke and El-Kot 2010<sup>8</sup>).

Among the “domain-specific outcomes,” life satisfaction is the variable that is most often associated with the work-family relationship (e.g., Hill 2005<sup>9</sup>), and it has been the object of many empirical studies.

<sup>7</sup> See also Adams et al. 1996; Frone et al. 1992a, b; Thomas and Ganster 1995

<sup>8</sup> See also Anafarta and Irmak 2009; Demerouti and Geurts 2004; Mullen et al. 2008

<sup>9</sup> See also Brotheridge and Lee 2005; Demerouti and Geurts 2004; Greenhaus et al. 2003

A first group of studies (e.g., Googins and Burden 1987) has focused on work-family conflict, which has been conceptualized as a global one-dimensional construct. These studies assessed the work-family conflict as the extent to which current job demands have an impact on family life (e.g., Bedeian et al. 1988). The results of these studies were discordant. On the one hand, some studies did not find a positive relationship between inter-role conflict and life dissatisfaction (Cooke and Rousseau 1984); on the other, some studies found a moderator role for gender and indicated that women experience lower levels of well-being than men (Googins and Burden 1987).

A second area of studies conceptualized work-family conflict as two distinct constructs: work-to-family and family-to-work conflict (e.g., Netemeyer et al. 1996; Perrewe et al. 1999). These studies predicted that family-to-work conflict and work-to-family conflict are negatively related to life satisfaction, and they revealed that when people experience an increasing conflict between their roles and responsibilities in both work and family domains, their life satisfaction decreases (Treistman 2004).

The positive interaction between the work-family relationship and life satisfaction has not been sufficiently studied. The few studies that have been conducted found that work-to-family facilitation is positively related to life satisfaction, and negatively related to individual stress; moreover, family-to-work facilitation is positively related to life satisfaction (Ford et al. 2007; Hill 2005).

Moreover, some studies have revealed a possible direct effect of the work-family relationship on indicators of well-being and quality of life (matching hypothesis) or a possible indirect effect mediated by other variables (cross-domain effects). For example, some authors (Kossek and Ozeki 1998) in their meta-analysis investigated the relationship of work-family and family-work conflict with life and job satisfaction, and they found that these dimensions are directly related to life satisfaction slightly more than to job satisfaction (matching hypothesis). Other authors (Warr 2007), on the other hand, postulated that there are direct effects of work stress on work-related well-being/strain and indirect effects on more general indicators of well-being/strain (cross-domain effects).

In summary, all these studies showed a strong relationship between work and family interactions and domain-unspecific outcomes. In our opinion, this is the reason why research on the work-family interface should include not only domain-specific outcomes but also domain-unspecific outcomes, e.g., general well-being indicators, life satisfaction, etc.

Consistent with these assumptions, the present study aims to examine the relationship between the work-family interface (positive and negative) and the family-work interface (positive and negative) and life satisfaction.<sup>10</sup>

According to these premises, our hypotheses were:

- H4: That negative WIF and FIW are negatively related to employees' life satisfaction;  
H5: That positive WIF and FIW are positively related to employees' life satisfaction.

<sup>10</sup> In our study, life satisfaction is defined as a judgmental process in which individuals assess the quality of their lives on the basis of their own unique set of criteria (Shin and Johnson 1978). It is based on the cognitive evaluation of the quality of one's experiences that span an individual's entire life (e.g., Treistman 2004).

## The Correlates of the Work-Family Relationship: The Role of Work Engagement and Support

As underlined in the section above, research conducted within the work-family conflict perspective has found that sometimes the relationship between the two domains does not cause negative consequences. Specifically, some studies considered a more complex framework regarding the relationship between family and work, revealing the role that some variables play in the interactions between the two domains.

Among these variables, family and organizational support have been shown to be significant factors that intervene in the work-family relationship (e.g., Carlson and Perrewe 1999<sup>11</sup>). Social support reduces strain and the effects of stressors (Viswesvaran et al. 1999) and reduces the likelihood that work (family) domains will be perceived as stressful, reducing work-family conflict (Carlson and Perrewe 1999). Employee perceptions of a family-friendly culture reduce work-family conflict (e.g., Shockley and Allen 2007<sup>12</sup>). Moreover, perceived social support is a potential moderator of the relationship between work-family conflict and domain-specific satisfactions (Mullen et al. 2008).

Since these results demonstrate a potential positive interaction between the two domains, in our opinion, the role of the family and organizational support should be taken into account in order to analyze the relationship between family and work.

Positive relationships between family and work have also been highlighted by research conducted within the role enhancement perspective. For example, some authors (McNall et al. 2010) linked work-family enrichment to job satisfaction, and other authors (Nicklin and McNall 2013) examined the mediating role of work-family enrichment via support and satisfaction.

However, despite support being seen as a key resource in the theory of work-family enrichment (Greenhaus and Powell 2006), there are still few studies that have examined the relationship between family and work support and work-family enrichment/positive spillover/facilitation (Nicklin and McNall 2013). Thus, in the present study, perceived family and organizational support were also examined as potential moderators of the relationship between work-family negative and positive aspects and satisfaction domains.

According to the “positive psychology” movement (Seligman and Csikszentmihalyi 2000), organizational research has recently applied the perspective of positive organizational behavior to study important research questions. The construct of work engagement, which has generated considerable interest, has been defined as a type of functional work involvement wherein employees work hard because they enjoy doing so (Schaufeli and Bakker 2001), or as a positive work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al. 2002).

Research has shown that work engagement promotes job satisfaction (e.g., Alarcon and Edwards 2010<sup>13</sup>). Recent studies have also investigated the crossover of work engagement and life satisfaction (Bakker et al. 2005; Demerouti et al. 2005). In this area some authors found that work engagement has a positive effect on life satisfaction (Hakanen and Schaufeli 2012). Other authors (Wells 2009; Wilcock 2001) found that

<sup>11</sup> See also Greenhaus and Beutell 1985; Thomas and Ganster 1995

<sup>12</sup> See also Mesmer-Magnus and Viswesvaran 2005a, b; Premeaux et al. 2007

<sup>13</sup> See also Saks 2006; Simpson 2009

the consequence of being engaged towards work can be an essential shaping factor in one's life satisfaction in general.

Some studies examined the relationship between work engagement and work-family interactions (e.g., Halbesleben et al. 2009<sup>14</sup>), but they are based on cross-sectional designs that limit conclusions regarding the causal nature of the relationships between variables (Culbertson et al. 2012). Other studies have considered work engagement a more proximal factor in predicting work-family enrichment (e.g., Hakanen et al. 2011<sup>15</sup>).

Although this positive role of work engagement has emerged, there is still a paucity of empirical studies that consider the concept of the work-family interface and its relationships with work engagement.

Thus, in the present study, work engagement was also examined as a potential moderator of the relationship between work-family negative and positive aspects and satisfaction domains.

In summary, one purpose of this paper is to examine also the positive side of the work-family relationship. For this reason, in our analysis, we focused on these moderators, social support and work engagement. We have analyzed social support because it has mainly been examined in work-family conflict research, and because few studies have analyzed it within a positive perspective. We have analyzed work engagement because it is considered a key resource in the "positive psychology" movement.

In our opinion, information about these potential moderators of the work-family relationship can clarify the negative and positive impact of the work-family and family-work interface on job and life satisfaction.

Regarding the role of family and organizational support and work engagement, our hypothesis is:

H6: That work engagement and organizational and family support are able to mediate the relationship between WIF/FIW and job/life satisfaction.

## Research Model

In summary, the aims of our research are to analyze the structure of the work-family interface measure and to analyze the relationships between the work-family interface and job and life satisfaction. The research model includes the hypothesized relationship between variables shown in Fig. 1.

Exogenous variables are:

*Positive work-family interface.* Positive influences of work on family life

*Negative work-family interface.* Negative influences of work on family life

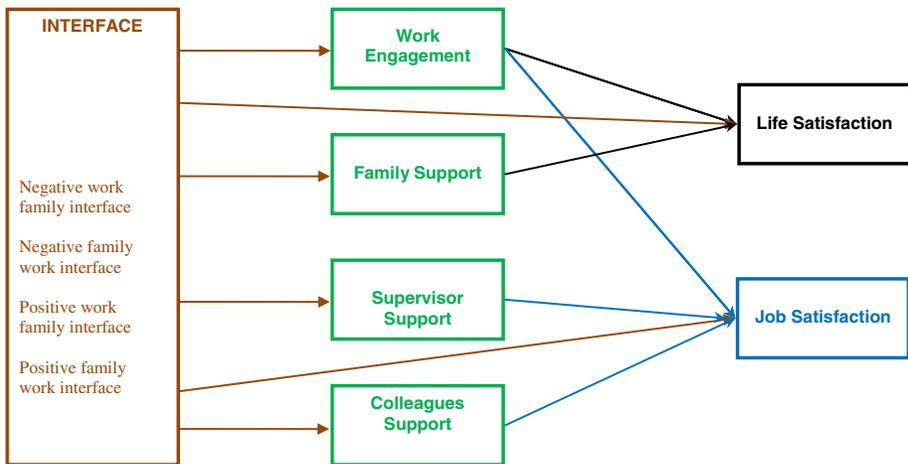
*Positive family-work interface.* Positive influences of family on work life

*Negative family-work interface.* Negative influences of family on work life

We have decided to consider the four dimensions of interface construct as exogenous variables because, in accord with analyzed researches, we think that both positive and

<sup>14</sup> See also Montgomery et al. 2003; Rothbard 2001

<sup>15</sup> See also Halbesleben et al. 2009; Siu et al. 2010



**Fig. 1** Hypotized model

negative influences family to work and work to family have significant effects on variables closely related to the quality of people's lives.

Endogenous variables are:

*Job satisfaction.* Positive emotional state resulting from the appraisal of one's job experience.

*Life satisfaction.* Cognitive evaluation of the quality of one's experiences that span an individual's entire life.

We have decided to consider job and life satisfaction as endogenous variables because, in accord with analyzed researches, we think that these variables, which contribute in an important way to the perception of subjective well-being, are influenced by the work-family interface.

Moderators are:

*Family support.* Perception of the family emotional closeness and of the instrumental help offered by family members in household labor.

*Organizational support.* Perceived support from colleagues and supervisors in the management of family tasks.

*Work engagement.* A type of functional work involvement wherein employees work hard because they enjoy doing so (positive work-related state of mind that is characterized by vigor, dedication, and absorption).

We have decided to consider organizational and family support and work engagement as moderators because, in accord with analyzed researches, we think that these variables can have a central role in determining the intensity of the interface effects on job and life satisfaction.

The positive effects of family life on job life, for example, can influence job and life satisfaction more when workers perceive themselves to be engaged and supported by their family, colleagues and supervisor.

In summary, as specified in our hypothesis, we expect that negative WIF and FIW will be negatively related to employees' job satisfaction and life satisfaction and

positive WIF and FIW will be positively related to employees' job satisfaction and life satisfaction through the mediator role of family support, organizational support and work engagement.

## Method

### Procedure and Participants

The participants in our study were all employees from an Italian public service organization, which deals with a broad range of administrative tasks as well as services in the field of agriculture and rural development. The analyzed organization promotes the integrated development of rural areas and the environmental compatibility of agricultural activities through the support of organizational multifunctionality, territorial specificity, quality productions and competitiveness in the markets. To this purpose it is interested in the diffusion, the increase and the formation of agricultural, zoo-technical and fish sectors; it coordinates the integration of activity in the agricultural branches and in the fish sector, in the agro-industrial and rural districts; it promotes the increase of agro-industrial produce, of regional biodiversity and of typical products; it acts as an intermediary between the productive system and research to favor an effective transfer into the territory of process and product innovations. This organization is divided into four departments that are administrated by a departmental manager; the departments are divided into 12 overall services. All services are directed by two middle managers; manual workers, administrative workers and specialists work in every service.

This research is the result of a collaboration between our research group and the organization. Specifically, the staff team of this organization asked the researchers for a specific collaboration regarding a survey about the organizational well-being and the employees' quality of life, in order to plan developmental actions. Our research is a specific part of this wider project.

The managers of the organization were informed about the study and, after they agreed to participate, all employees were informed about the study through a number of specific meetings with the researchers and the management. We explained the procedures of the study and assured them that their responses would be confidential. Survey materials were distributed to all the respondents, who were asked to answer the questions anonymously. Survey materials included an information letter, a questionnaire, and a stamped addressed envelope. The aim of the information letter was to introduce the study as a research investigation and to emphasize its voluntary nature, as well as the anonymity and confidentiality of responses. In order to encourage participation, organization-specific feedback about the variables under study was promised and was later presented to the organization. Finally, we sent a reminder survey to all employees to reinforce the deadline for data collection. We received the completed surveys 4 weeks after the meetings. Respondents did not receive any kind of reward for participating.

In summary, we collected data from managers (departmental managers and middle managers) and manual workers, administrative workers and specialists working in an important public organization in southern Italy. The questionnaire was distributed to all 600 employees and 73 % of the questionnaires were returned, resulting in 427 usable

questionnaires. The data analysis was conducted only on those participants who had answered in full the survey questions regarding their work and family lives ( $n=427$ ). The characteristics of those interviewed are tabulated in Table 1.

## Measures

*Family Support* The support perceived in their own family was measured through two items (adapted from the study of King et al. 1995). Two items specifically assessed emotional and concrete support: The items are scored on a five-point asymmetrical rating scale ranging from 0 ('never') to 5 ('always').

*Organizational support* Study participants reported on the extent of perceived organizational support in their own workplace. Organizational support was measured with two items (adapted from the study of Clark 2001) in which respondents were asked whether their supervisor and their colleagues understand their family demands. The items are scored on a five-point asymmetrical rating scale ranging from 0 ('never') to 5 ('always').

*Job Satisfaction* Satisfaction with work was measured using the Brief Overall Job Satisfaction measure II (Judge et al. 1998). Job satisfaction was measured with five items. The respondents evaluated their perceptions of satisfaction concerning their current job on a response scale from 1 to 7 (1 = strongly disagree, 7 = strongly agree).

*Work Engagement*<sup>16</sup> The level of work engagement that leads employees to put more effort into their working activities was assessed by the UWES (Utrecht Work Engagement Scale), developed by Schaufeli et al. (2002), and which was recently validated in Italy (see Balducci et al. 2010) (UWES-9). Previous research has demonstrated that the UWES has satisfactory internal consistencies (Hakanen et al. 2006). All items (9 items) are scored on a seven-point asymmetrical rating scale ranging from 0 ('never') to 6 ('daily').

*Work-Family Interface* Work and family dimensions were assessed by 14 items measuring four different theoretical dimensions: the negative influence of work on family, the negative influence of family on work, the positive influence of work on family, and the positive influence of family on work (Kinnunen et al. 2006).

The eight items related to the negative influence of work on the family and the family on work have been adapted from the work of Frone and colleagues (1992a), and Netemeyer and colleagues (1996). In these items, either time or strain is the mechanism by which spillover from one domain to another occurs.

Positive spillover from both work to family and from family to work was measured through six items on the basis of Nijmegen's Work-Home Interaction Survey (SWING; Wagena and Geurts 2000). The spillover mechanism, on which these items are based, can involve positive mood, skills or behavior.

Response categories for all of the items ranged from 1 ('never') to 5 ('very often').

<sup>16</sup> Through the use of confirmatory factor analysis we achieved good fit indices for the monofactorial scale of the Work Engagement Scale ( $\chi^2=77.123$ ;  $df=35$ ;  $p<.01$ ; NNFI=.95; CFI=.96; GFI=.92; AGFI=.86; RMSEA=.07).

**Table 1** Characteristics of the interviewed ( $n=427$ )

Gender	215 men (50.35 %)	212 women (49.65 %)
Age	average 43.25 years (SD=12.04).	
Professional position	manual workers	44.45 %
	administrative workers	18.7 %
	specialist	31 %
	first/mid level officials and managers	5.85 %
Level of education	high school diploma	76.3 %
	university degree	23.7 %
Organizational seniority	average 19 years (SD=6.99)	
Working hours	90 % worked a 40 h week (Average = 35.83, SD=8.35)	
Family structure	spouse/partner employed	54.1 %
	children under of 18 years living at home	53.7 %
	average number of children living at home	1,96 (SD=1.34, range 1–4)
	average age of the children	10,9 (SD=4.72)

SD standard deviation

*Life Satisfaction* Satisfaction with life was assessed through the single item developed by Lance et al. (1989). Participants were requested to indicate their life satisfaction on a 10-point rating scale ranging from ‘very dissatisfied’ (1) to ‘very satisfied’ (10). (see Table 2)

Finally, respondents were asked to provide information commonly associated with the work-family interface:

*demographic information*: including gender, age, level of education;

*family information*: number and relationships of family members currently living in their household; number and age of children, and whether they live at home; whether their partner is employed (single- or dual-earner family);

*work information*: job title, years of service, working hours (FT vs. PT).

We have also verified the internal consistency of each scale, with the Cronbach’s alpha index, as shown in Table 3.

The questionnaire was administered in Italian. The instruments without Italian validation (family support, organizational support, job satisfaction, life satisfaction and work-family interface) were translated into Italian, and were also subjected to a back translation by an independent translator. Back translation is a very helpful tool for controlling translation problems across cultures.

## Data Analysis

In order to confirm our hypotheses, we conducted an exploratory factor analysis (EFA) using SPSS software, and a confirmatory factor Analysis (CFA) and path analysis using EQS software (Bentler 1995).

**Table 2** The questionnaire

Measures	Items
Family support	When something at work is bothering me, members of my family show that they understand how I'm feeling When I'm having a difficult week at my job, my family members try to do more of the work around the house
Organizational support	My supervisor understands my family demands My colleagues understand my family demands
Job satisfaction	I feel fairly well satisfied with my present job On most days I am enthusiastic about my work Each day of work seems like it will never end I really enjoy my work I consider my job rather unpleasant
Work engagement	At my work, I feel bursting with energy At my job, I feel strong and vigorous I am enthusiastic about my job My job inspires me When I get up in the morning, I feel like going to work I feel happy when I am working intensely I am proud of the work that I do I am immersed in my job I get carried away when I am working
Work-family interface	Does your job or your career interfere with your responsibilities at home, such as cooking, shopping, child care, yard work and house repairs? Do the demands of your job interfere with your private life? Does your job or your career keep you from spending the time that you'd wish with your family? Does your job produce strain that makes it difficult to fulfil your family duties? Your home life interferes with your responsibilities at work, such as getting to work on time, accomplishing daily tasks or working overtime? The demands of your family or spouse/partner interfere with your work-related activities? Your home life prevents you from spending the desired amount of time on job- or career-related activities? Family related strain interferes with your ability to perform job-related duties? You come home cheerfully after a successful day at work, positively affecting the atmosphere at home? You fulfill your domestic obligations better because of the things you learned in your job? You manage your time at home more efficiently as a result of the way you do your job? After spending time with your spouse/family, you go to work in a good mood, positively affecting the atmosphere at work?

**Table 2** (continued)

Measures	Items
	You take your responsibilities at work more seriously because you are required to do the same at home?
	You manage your time at work more efficiently because at home you have to do that as well?
Life satisfaction	How satisfied are you with your life in general?

Our sample of 427 participants was divided into three subsamples of subjects randomly selected. We used the first subsample to conduct the exploratory factor analysis ( $N=113$ ), the second subsample to conduct the confirmatory factor analysis and the third subsample ( $N=120$ ) to conduct the path analysis and the correlation analysis ( $N=194$ ).

We first conducted a series of EFAs to evaluate the dimensionality of the scales. EFA is a method for explaining the correlations among variables in terms of more fundamental entities called factors (Cudeck 2000). We used the principal components extraction method for EFA with the oblique rotation because the dimensions are theoretically correlated with one another (Cudeck 2000).

In order to confirm our hypotheses, we conducted the confirmatory factor analyses, one for each scale. Finally, we estimated a path analysis where we connected the observed variables to the most adequate measurement model of the work-family interface scale. CFA and path analysis have been conducted using structural equation modelling (SEM) with the maximum likelihood estimation method.

For the study to be accepted, using the SEM, the sample size should not be smaller than 100 cases (Boomsma and Hoogland 2001). In this research, each of the factors to be measured had two to five indicators, i.e., four to ten parameters. Applying Bentler and Chou's 10:1 rule of thumb, a sample size of 40 to 100 was required (Bentler and Chou 1987). Applying Flynn and Percy's (2001) rule of thumb, a sample size of 20 to 50 would suffice. Thus, in terms of sample size, the study met these requirements.

To establish fit, the following indexes were used for all tests: the  $\chi^2$  goodness-of-fit statistic, the comparative fit index (CFI; Bentler 1989, 1990), the non-normed fit index (NNFI; Bentler and Bonett 1980; Tucker and Lewis 1973), and the root mean square error of approximation (RMSEA; Steiger 1989). The fit can be considered acceptable when the CFI and NNFI are greater than .90 and the RMSEA is equal to or smaller than .08 (Bentler 1990; Steiger 1990). Nevertheless, Hu and Bentler (1999) suggest more stringent criteria, and propose accepting a model when the NNFI and the CFI are equal to or greater than .95 and the RMSEA is less than .06. We have also considered the goodness-of-fit index (GFI)

**Table 3** The goodness-of-fit statistics for the alternative measurement models in constructing work-family interface scales

Measurement model	$\chi^2$ (df)	<i>p</i> -value	$\chi^2$ /df	CFI	RMSEA	NNFI	GFI	AGFI
$M_{4\#14item}$	107.438 (71)	.003	1.51	.94	.07	.93	.89	.83
$M_{end}$	81.662 (59)	.027	1.38	.97	.05	.95	.91	.86

and the adjusted goodness-of-fit index (AGFI; Bentler 1989, 1990). These fit indexes are considered accepted when GFI is greater than .90 and smaller than 1.00, and when AGFI is greater than .85 and smaller than 1.00 (Bentler 1989, 1990).

The internal consistency of each scale is measured through Cronbach's alpha. The correlation between variables was calculated using the  $r$  Pearson coefficient.

### Confirmatory Factor Analysis of the Work-Family Interface

We tested our four-factor model of the work-family interface scale.

In the first step (M4f/14item), we saw that item 9 ("How often does it happen that after spending time with your spouse/family, you go to work in a good mood, positively affecting the atmosphere at work?") showed a low saturation (0.08) and a residual error of 1.00, consequently, the GFI and AGFI indexes showed values below the threshold of acceptance. In the second step, we removed item 9 and we obtained a four-factor model with excellent fit indices (see  $M_{end}$  in Table 4).

The structure of the measures is illustrated in Fig. 2.

We have also verified the internal consistency of each scale, with the Cronbach's alpha index, as shown in Table 2.

### Pearson Correlation Analysis

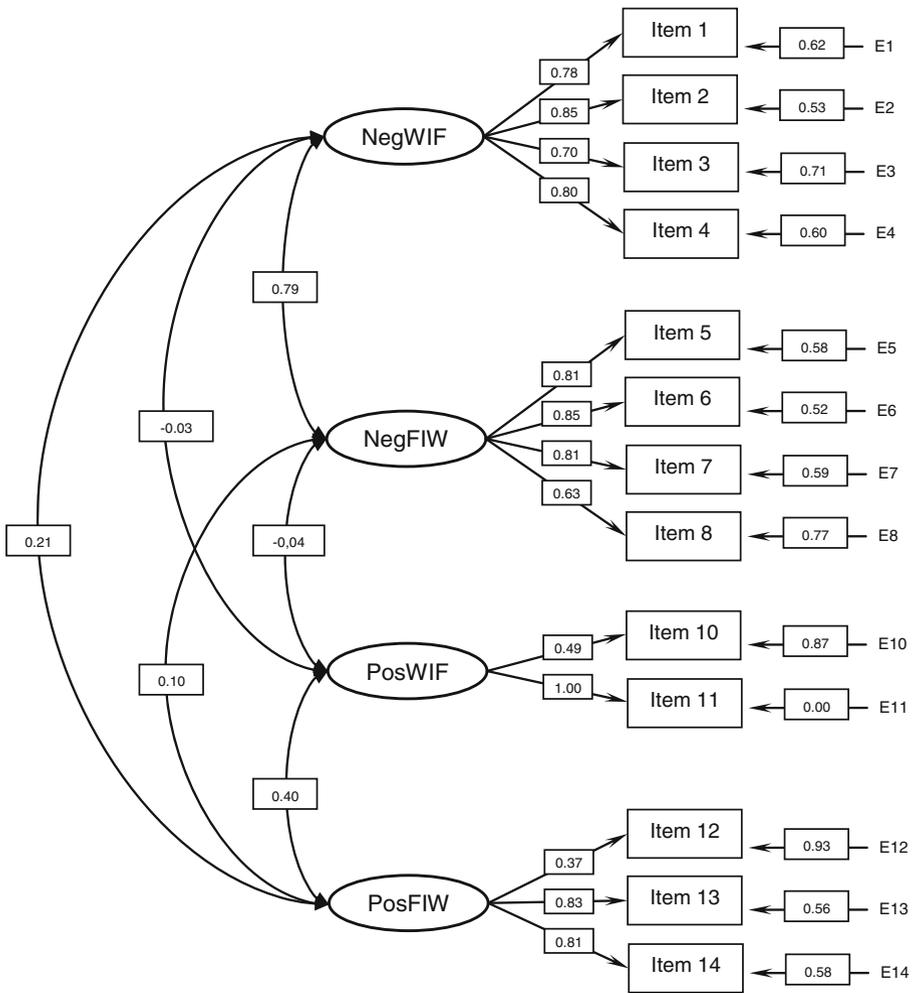
We conducted a correlational analysis using the  $r$  Pearson coefficient to clarify the relationships among the main variables of our study. Table 5 shows the results along with the descriptive statistics of the variables observed.

We found that the correlation between engagement and job satisfaction, and the one between engagement and life satisfaction, were both significant. It is also possible to note a significant correlation between life satisfaction and family support and between positive WIF/FIW, engagement and job satisfaction. In addition, we found positive correlations between family support and organizational support (supervisor and colleagues), between family support and life satisfaction, between organizational support (supervisor and colleagues) and work engagement, and between organizational support (supervisor and colleagues) and job satisfaction. Finally, we found positive relationships between positive interface (PosWIF, PosFIW), organizational support (supervisor and colleagues) and job satisfaction.

Regarding the different scales of interface measures, we can see that there is a significant relationship between elements of the same sign of influence (Positive WIF

**Table 4** Internal consistency of scales

Scales	Cronbach's alpha
Family support	.61
Work engagement	.95
Job satisfaction	.83
NegWIF	.86
NegFIW	.85
PosWIF	.69
PosFIW	.73



**Fig. 2** The final four-factor structure ( $M_{\text{end}}$ ) of the work-family interface scale

and FIW, Negative WIF and FIW). We also found a weak but significant correlation between PosWIF and NegWIF and between PosFIW and NegFIW. The latter result is counterintuitive, but, in Kinnunen et al.’s study (2006), similar values were found ( $r=.17$ ,  $p<.05$ ). To clarify this result, we conducted a Pearson correlation analysis for each item that saturates these two factors. We found that family commitments and the time spent on household duties significantly correlate with efficient management of work time. For these reasons, the positive correlation between PosFIW and NegFIW should not be attributed to the factor name but to the meaning of the single items that compose it.

**Path Analysis**

In the final step of our analysis, we tested our hypothetical model (Fig. 1). In order to do that, we conducted a path analysis to test different models (see Table 6).

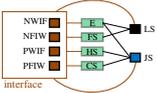
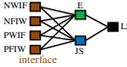
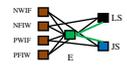
**Table 5** Descriptive and Pearson correlations of variable observed

	M	SD	1	2	3	4	5	6	7	8	9	10
			FS	CS	HS	WE	LS	JS	NegWIF	NegFIW	PosWIF	PosFIW
1. Family Support	3.82	1.01	1									
2. Colleagues Support	3.62	1.17	.291***	1								
3. Supervisor Support	3.57	1.19	.525***	.616***	1							
4. Work Engagement	4.76	1.24	.140	.191**	.353***	1						
5. Life Satisfaction	5.27	1.14	.195**	.048	.054	.247**	1					
6. Job Satisfaction	4.80	1.19	.083	.162*	.396***	.840***	.176*	1				
7. NegWIF	2.39	.82	-.117	-.110	-.087	-.197*	-.119	-.207**	1			
8. NegFIW	1.86	.68	-.204**	-.050	-.008	-.156*	-.183*	-.140	.579***	1		
9. PosWIF	2.52	1.06	.128	.297***	.224***	.448***	.087	.403***	-.160*	.064	1	
10. PosFIW	3.17	1.08	.074	.270***	.293***	.406***	.093	.350***	-.053	.169*	.503***	1

M mean; SD standard deviation

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 6** Alternative models of path analysis

Measurement Model	Diagram's path	$\chi^2$ (df)	<i>P</i> -value	$\chi^2$ /df	NFI	NNFI	CFI	GFI	AGFI	RMSEA
The hypothesized model		120.710 (18)	.00	6.71	.821	.521	.836	.898	.689	.173
Alternative model 1		194.500 (5)	.00	9.26	.594	-.739	.586	.842	.117	.445
Alternative model 2		325.998 (9)	.00	36.22	.319	-.616	.307	.729	.158	.429
Final model		.244 (4)	.99	.061	.99	1.0	1.0	1.0	.99	.001

*NWIF* negative work to family interface; *NFIW* negative family to work interface, *PWIF* positive work to family interface; *PFIW* positive family to work interface; *E* work engagement; *JS* job satisfaction; *LS* life satisfaction; *FS* family support; *HS* supervisor support; *CS* colleagues support

The hypothesized model and the alternative models (1 and 2) of path analysis were characterized by a bad fit index, which for economy of space we have not reported here. From these results, it appears that the network of influences posited in the final model is the one that best fits the data. It represents a better balance between goodness of fit and explanatory power when compared to the relationships hypothesized in the alternative models. The best model is shown in Fig. 3.

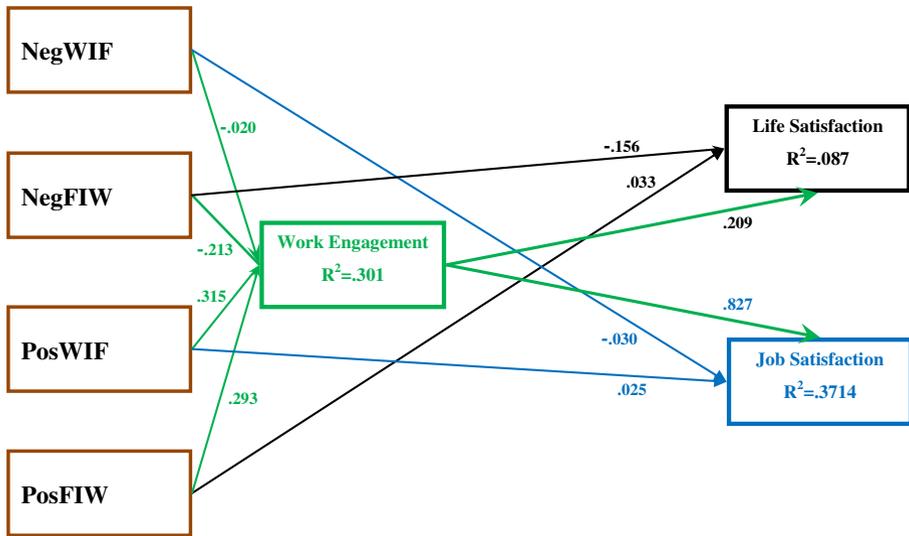
The four dimensions of interface (NegWIF, NegFIW, PosWIF, PosFIW) directly influence work engagement. These influences explain 30 % of the work engagement's variance ( $R^2 = .301$ ). The variables NegWIF ( $\beta = -.020$ ) and NegFIW ( $\beta = -.213$ ) negatively affect work engagement. These data reveal that aspects of family life that influence work negatively have a decreasing effect on work engagement more than how working life aspects can adversely affect family life. The variables PosWIF ( $\beta = .315$ ) and PosFIW ( $\beta = .293$ ) positively affect work engagement. These data reveal that aspects of working life that positively influence family life increase work engagement more than how aspects of family life can positively affect working life.

Work engagement, in turn, influences life satisfaction weakly ( $\beta = .209$ ), and job satisfaction strongly ( $\beta = .827$ ).

The variables NegWIF ( $\beta = -.030$ ) and PosWIF ( $\beta = .025$ ) affect job satisfaction. The influence of these variables explains 71.4 % of the variance ( $R^2 = .714$ ).

The variables NegFIW ( $\beta = -.156$ ) and PosFIW ( $\beta = .033$ ) affect life satisfaction. The influence of these variables explains 8.3 % of the variance ( $R^2 = .083$ ).

We used the Sobel Test (Sobel 1982) to verify the moderator role of work engagement. We found that work engagement moderates for PosFIW on life satisfaction ( $z = 3.05$ ;  $p < .05$ ), for NegWIF on job satisfaction ( $z = 2.76$ ;  $p < .001$ ) and for PosWIF on job satisfaction ( $z = 6.61$ ;  $p < .001$ ). The level of work engagement does not moderate the effect of NegFIW on life satisfaction.



NegWIF = Negative work family interface  
 NegFIW = Negative family work interface  
 PosWIF = Positive work family interface  
 PosFIW = Positive family work interface

**Fig. 3** Final diagram's path

## Discussion

Our research was conducted within a theoretical framework that analyzed the complexity of the interaction between work and family roles. We have studied the effects of the negative and positive work-family/family-work interface on the general quality of people's work and life in public administration.

First, this study examined the structure of the work-family interface measure and evaluated the relationship between the work-family interface and two specific domains of satisfaction: job and life. In addition, we hypothesized that some variables (family support, organizational support, work engagement) can be moderators in the relationship between WIF or FIW and both job and life satisfaction.

The first aim of the present study was to test the structure of the work-family interface measure (Kinnunen et al. 2006). In accordance with previous studies (Frone 2003; Geurts et al. 2003; Grzywacz and Marks 2000; Kinnunen et al. 2006), the confirmatory factor analyses supported a four-factor model: negative work-to-family and family-to-work interface and positive work-to-family and family-to-work interface. Thus, the hypothesized four-factor model demonstrated the best fit for the data. Our results support the need to distinguish between four different dimensions underlying work-family relationships, and they show the importance of using a multidimensional construct and complex models in studying this topic (Frone 2003; Geurts and Demerouti 2003; Wagena and Geurts 2000). Research investigating the relationship between family and work domains has traditionally focused on the negative aspects of work-family conflict (e.g.,

Bellavia and Frone 2005; Greenhaus and Beutell 1985),<sup>17</sup> focusing on the reductionist model, centered on the scarcity of resources approach (Goode 1960).<sup>18</sup> However, over the past 15 years, a number of studies have also focused on positive family and work relationships (Carlson et al. 2006; Frone 2003; Greenhaus and Powell 2006; Grzywacz and Butler 2005; Hill 2005), according to the role enhancement perspective (Ruderman et al. 2002).<sup>19</sup> Our results highlight the importance of using a theoretical and empirical model that integrates and focuses on both the positive and negative aspects of work-family interaction (e.g., Barnett 1998; Rothbard 2001; Ruderman et al. 2002). Multidimensional models limit the risk of developing erroneous and incomplete conclusions regarding the interplay of these two domains.

Theory and research also suggest that the four factors we used in our model may have different outcomes (e.g., Frone et al. 1992a, b; Kelloway et al. 1999). The outcomes that have attracted the most research are job satisfaction (e.g., Allen et al. 2000; Kossek and Ozeki 1998) and life satisfaction (e.g., Adams et al. 1996; Frone et al. 1992a, b). The second, third, fourth and fifth hypotheses were partially confirmed, that is, that negative WIF and FIW were negatively related to employees' job and life satisfaction, while positive WIF and FIW were positively related to the same dimensions. Our data showed a model in which the positive and negative WIF had a direct effect on job satisfaction and the positive and negative FIW had a direct effect on life satisfaction. In particular: when WIF is positive, the level of job satisfaction increases; when WIF is negative, the level of job satisfaction decreases; when FIW is positive, life satisfaction increases; and when FIW is negative, life satisfaction decreases. This pattern of findings is consistent with a causal sequence in which WIF and FIW, in their positive and negative direction, increase or reduce a satisfaction-specific domain, and it demonstrates the potential consequences of these influences for public employees and their individual working lives and general well-being.

Another important topic of work-family interaction research is the role of work engagement (e.g., Halbesleben et al. 2009; Rothbard 2001) and organizational and family support (e.g., Carlson and Perrewé 1999; Mullen et al. 2008).

The sixth hypothesis, which considered the role of some variables (work engagement and organizational and family support) as possible moderators of the relationship between the work and family interface and job and life satisfaction, has been partially confirmed. Although our model did not confirm the moderator role of organizational and family support in relation to these variables, it showed the central role of work engagement. Within our model, work engagement unexpectedly mediates (but does not moderate) the relationship between the work and family interface and job and life satisfaction. Specifically, work engagement mediates the relationship between positive/negative work-to-family interface and job satisfaction, and the relationship

<sup>17</sup> The work-family conflict perspective postulates that the simultaneous participation in work and family domains causes an inter-role conflict in which the role pressures from these domains are mutually incompatible in some respect.

<sup>18</sup> The scarcity of resources approach postulates that individuals have a fixed amount of time and energy and that involvement in multiple roles can generate strain.

<sup>19</sup> The role enhancement perspective postulates that participation in multiple roles provides a greater number of opportunities and resources to the individual and can promote growth and better functioning in other life domains.

between positive family-to-work interface and life satisfaction, but does not mediate the relationship between negative family-to-work interface and life satisfaction. We could not find any study that emphasized the mediator role of work engagement in the relationship between the work and family interface and job and life satisfaction.

In summary, we found that the four factors that explain interface can influence both directly and indirectly the following: life satisfaction, job satisfaction and work engagement; and that work engagement has a stronger influence on job satisfaction than on life satisfaction.

Our model confirms the results of a large number of studies that have reported a negative correlation between negative aspects of the work–family relationship and job satisfaction (e.g., Allen et al. 2000; Carlson and Kacmar 2000; Frone et al. 1992a; Kossek and Ozeki 1998), and a positive correlation between positive aspects of the work–family relationship and job satisfaction (e.g., Balmforth and Gardner 2006; Boyar and Mosley 2007; Hill 2005).

The absence of a significant correlation between FIW and job satisfaction in our study is also confirmed by some studies, according to which work–family conflict, but not family–work conflict, is negatively related to job satisfaction (e.g., Anafarta 2011; Lambert et al. 2002; Noor 2002).

However, the literature is not clear about the existing relationship between FIW and job satisfaction. Perrewe and colleagues (1999), for example, found that both WIF and FIW have a negative influence on job satisfaction. Kossek and Ozeki (1998), on the other hand, revealed that this correlation is stronger for job satisfaction and WIF than for job satisfaction and FIW. Boles and colleagues (2003) found that work-to-family conflict issues were related to low levels of job satisfaction. They also found, quite unexpectedly, that family-to-work conflict was related to higher levels of job satisfaction.

Our model partially confirms the “matching hypothesis,” according to which WIF and FIW directly affect indicators of well-being and quality of life (e.g., Kossek and Ozeki 1998), and partially the “cross-domain effects,” according to which WIF and FIW have indirect effects, mediated by other variables (Warr 2007). In fact, our results showed coherence with other studies (Ford et al. 2007; Hill 2005), which found a direct correlation between FIW and life satisfaction, and they confirm the matching hypothesis. In addition, our model, unexpectedly, does not include any direct relationship between WIF and life satisfaction. This relationship is weakly mediated by work engagement. In this respect our model is more congruent with the cross-domain effects theory, which suggests the presence of an indirect effect, mediated by other variables of WIF and FIW, on life satisfaction.

The role of engagement is central in our model. The construct of work engagement is one area of research that has generated considerable interest. This psychological construct measures positive work-related state of mind (Bakker et al. 2008) and it is a type of functional work involvement that leads employees to put more effort into their working activities because they enjoy them (Schaufeli and Bakker 2001). Work engagement is characterized by the desire to invest energy in one’s work, and includes feelings of pride, inspiration, and enthusiasm regarding one’s work, as well as a sense of being engrossed in one’s work whereby such immersion creates a feeling of time passing quickly (Schaufeli et al. 2002). All four interface dimensions directly influence work engagement. Negative interface (NegWIF and NegFIW) influences negatively the

level of work engagement, while positive interface (PosWIF and PosFIW) influences positively the level of work engagement. In particular, positive interface affects work engagement strongly. In addition, a high level of work engagement, in turn, is beneficial for life satisfaction, and, in particular, for job satisfaction. We found that both WIF and FIW influence the level of work engagement. In particular, the relationship between positive interface and work engagement is positive, while the relationship between negative interface and work engagement is negative. These results are not supported by previous empirical research.

Our study also showed that work engagement may play an important role in promoting the job satisfaction of public employees, and this finding is in line with a large number of research studies that reveal the same relationship (e.g., Alarcon and Edwards 2010; Saks 2006; Simpson 2009). Recent studies have shown the importance of investigating the crossover of work engagement (Bakker et al. 2005) and life satisfaction (Demerouti et al. 2005). We have analyzed this relationship and, consistent with recent studies, we found that work engagement had a positive effect on life satisfaction (Hakanen and Schaufeli 2012). The consequence of being engaged does not only apply to attitude or feelings towards work, but can also be an essential shaping factor in one's life satisfaction in general (Wells 2009; Wilcock 2001). We can affirm that work engagement may have positive organizational effects as well as positive individual effects because it implies an active and energetic psychological state, which fosters the mobilization of resources even in mentally challenging jobs (Hakanen and Schaufeli 2012).

In summary, our results confirm the importance of using a complex empirical and theoretical model that includes negative and positive aspects of family and work relationships. We also underline the importance of focusing attention, in particular, on positive interface and the general quality of people's work and life relationship. In line with the "positive psychology" movement (Seligman and Csikszentmihalyi 2000),<sup>20</sup> we have also found that work engagement is a key organizational and personal resource that moderates positive and negative work-family relationships and job and life satisfaction.

## Limitations and Future Research

We would like to point out some methodological limitations of this study and also some areas for further research development. Our results offer some suggestions for future research and other studies can extend the present study in several ways. Firstly, the use of bidirectional measures of the work-family interface is supported by our study, and it suggests that researchers should use measures that distinguish between WIF and FIW, and between the positive and negative influence that one domain can have on the other. The present study could be replicated using different samples and compare, for example, employees in different public or private organizations, managers and employees, men and women, single-earner and dual-earner families. Our study, in fact, involved employees in a public administration in a particular sector (agriculture). This

<sup>20</sup> Positive psychology uses the psychological theory, research and intervention techniques to understand the positive and adaptive aspects of human behavior and to improve personal resources and potentiality.

sample cannot be considered representative of a national situation and consequently our findings cannot be generalized. For example, public employees in the agricultural sector could perceive relations in a different way from public employees in other sectors or private employees.

Another limitation of the present study is the use of a cross-sectional design. A similar study could be conducted using longitudinal data. Longitudinal data, in fact, have two potential advantages over cross-sectional data: first, they allow stronger inferences concerning cause and effect than do cross-sectional data; secondly, they are more appropriate than cross-sectional data for estimating the magnitude of causal effects.

Our data indicate that FIW influences life satisfaction to a lesser extent than WIF influences job satisfaction. Therefore, future research could examine more specifically the effect of FIW on quality of life, for example through the analysis of the mediation role of family variables, such as the perception of fairness, family involvement and family satisfaction.

In the present study, the relationship between job and life satisfaction was not considered. Future research could examine the relationship between these central variables. Job satisfaction is, in fact, related to many indicators of mental health as well as of physical health (Faragher et al. 2005), and it can be considered a main aspect of an individual's well-being (Warr 2007). From this perspective, future studies could also clarify the type of relationship that exists between job and life satisfaction. This interaction has been studied from three main perspectives (Iverson and Maguire 2000; Judge and Watanabe 1994): the spillover, and the theories of compensation and segmentation (Loscocco and Roschelle 1991). The spillover perspective identified a direct, bidirectional influence between job satisfaction and life satisfaction. In other words, when employees are satisfied at work, they are also happier in nonwork activities and vice versa, and when they are not satisfied at work, they are also less happy in nonwork activities and vice versa (Adams et al. 1996; Judge et al. 1998). The compensation model (Loscocco 1989; Schmitt and Mellon 1980), on the other hand, hypothesized that when employees are dissatisfied in one area (work or nonwork activities), they tend to engage themselves in satisfying activities in the other area. Finally, the segmentation model does not hypothesize any correlation between job and life satisfaction. Although there has been a preponderance of empirical support for the spillover model, the relationship between job and life satisfaction is still not clear (Iverson and Maguire 2000).

Another possible further direction of our research would be to examine both WIF and FIW with respect to a broader set of: *work outcome variables*, such as organizational commitment (e.g., Aryee et al. 2005), intention to quit (e.g., Shaffer et al. 2001), burnout (e.g., Peeters et al. 2005), absenteeism (e.g., Kirchmeyer and Cohen 1999), work-related strain and organizational citizen behavior (e.g., Netemeyer et al. 2005); *family outcome variables*, such as marital satisfaction (e.g., Voydanoff 2005), family satisfaction (e.g., Cardenas et al. 2004), and family-related strain (e.g., Swanson and Power 1999); *domain-unspecific variables* such as psychological strain (e.g., Kelloway et al. 1999), somatic complaints (e.g., Peeters et al. 2004), depression (e.g., Vinokur et al. 1999), and substance use or abuse (e.g., Grzywacz and Bass 2003).

The next direction of our research is to examine the predictive role of specific antecedents of the work-family interface, for example: work domain variables such as

stress at work, and levels of commitment and involvement; family domain variables such as marital conflict, family adaptability and cohesion; family satisfaction; demographic and individual variables such as personality, coping style, and locus of control.

Finally, another limitation of our study is that, similarly to the vast majority of studies that have investigated the link between WIF/FIW, job satisfaction and life satisfaction, we evaluated these dimensions only through self-report measures completed by the employees. We accept that the participants' answers, due to the nature of the questions, could be affected by cognitive bias such as denial, idealization, and social desirability. According to this, further research could also investigate some of these variables through some qualitative investigation, for example interviews or direct observation.

## Conclusion and Practical Implications

Overall, our results indicate that workplace programs designed to improve the balance between work and family domains, or which increase work engagement, may have positive impacts on job and life satisfaction, and can also have positive consequences for employees' well-being amongst public employees in the agriculture sector. Research on potential moderators of relationships between the work and family interface, and job and life satisfaction, can help professionals to intervene in order to prevent or alleviate the negative impact of work-family conflict on family and work satisfaction and, eventually, on general life satisfaction. Those organizations and managers who are interested in healthy employees should therefore include attempts to minimize conflicts between work and family life in their considerations. Moreover, a conflict originating in the work environment (i.e., WIF) is strongly related to work engagement and to job satisfaction. Thus, organizations should be motivated to create a family-friendly working environment. In particular, managers' behavior is important regarding this point, as they should be encouraged and supported in their attempts to convey a family-friendly climate (Allen 2001; Hammer et al. 2009).

In our study, the level of work engagement had a central mediation role. According to our results, interventions that increase the level of work engagement indirectly increase the level of job satisfaction as well, and slightly improve life satisfaction. Interventions designed to improve work engagement can be classified in terms of organizational, job, and individual interventions. Some combination of interventions across different levels will probably be needed to develop, embed, and sustain engagement in organizational environments. Interventions to promote engagement require a sustained effort and should provide systematic group sessions that follow organizational development principles (Bakker et al. 2011).

From the perspective of organizations, policies that reduce conflict and promote balance between work and personal life are needed for employees. In practice, workplace interventions may also extend their influence beyond work to foster work engagement and promote general well-being among employees (Sirgy et al. 2008).

The interface between work and family has received broad attention during the past 20 years. Research that has been interested in this topic is associated with changes in societal structure, especially with the rising number of dual-earner couples and the continuous changes in family and working life. These considerations may suggest that

the intersection between work and family will continue to constitute a challenge during the upcoming years. Therefore, it will be important to further analyze the work-family interface, in terms of both negative and positive aspects, and its antecedents as well as its consequences. This could facilitate the development of better measures of research, prevention and intervention.

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