

The role of norms, received support, and felt obligation for intergenerational support

Sabrina Sommer¹ & Heike M. Buhl²

Abstract

Objective: This contribution addresses the question of how social norms, felt obligation, and received support influence the support of adults for their mothers and fathers. In addition, the study examines whether perceived commitment has a mediating role to play here.

Background: The exchange of support between generations is described by the theory of intergenerational solidarity and aspects of social exchange theory. **Method:** The study focuses on families in which all members are not necessarily in need of support. 215 German adult children aged 22 to 51 years were questioned about their support exchanges at two measurement time points 12 months apart. A distinction is made between emotional and instrumental support. The analysis was performed using structural equation modeling (SEM).

Results: The study showed that social norms, support received by parents, and felt obligation influence adult support for their parents one year later. In addition, felt obligation mediated the positive association between social norms and given support. It also mediated the association between received support from parents and support given. Testing for differences as a function of parent gender revealed mediation in all dyads except for instrumental support in dyads with mothers. **Conclusion:** This study contributes to a better understanding of adults' giving of support to their parents and explicitly highlights the importance of felt obligation.

Keywords: adult children, emotional support, instrumental support, felt obligation, social norms

1 Educational-psychological assessment and intervention, University of Paderborn

2 Educational and Development Psychology, University of Paderborn

Corresponding Author:

Sabrina Sommer, Educational-psychological assessment and intervention, University of Paderborn, Warburger Str. 100, Paderborn, 33098, Germany.
Email: sabrina.sommer@upb.de

Introduction

In Western countries, adult children are important resources for parents when it comes to receiving advice, talking about personal problems, and having conversations about life in general (Schwarz et al., 2005), as well as for practical help such as chores in and around the house, housework or taking care of children (Bucx et al., 2012). In the period of life when children are grown up and parents are still healthy their relationship is characterized by high connectedness and a frequent exchange of support (Baltes & Silverberg, 1994). In this context, various aspects such as affection, closeness and received support influence intergenerational support (e.g., Klaus, 2009). This phase, however, is understudied and has been nearly disregarded in research in recent years. In particular, little attention has been paid to the importance of social norms (Silverstein et al., 2006) and felt obligations (Stein et al., 1998), although it is assumed that these components contribute to giving support (e.g., Hollstein & Bria, 1998).

The goal of this study is to point out the importance of social norms, received support by parents, and felt obligation as predictors of adults giving support to their parents. It focuses on felt obligation and examines its often-assumed mediating role.

Intergenerational support

In general, the support of adults to their parents takes several forms, including emotional support (e.g., expression of love, empathy, and comfort), instrumental support (e.g., counseling, provision of practical help in the home or garden, shopping or dealing with public authorities) or financial support (Cheng et al., 2013; Rossi & Rossi, 1990). Emotional support is the form which is most often exchanged between generations compared to other forms (Brandt et al., 2008). As financial support is exchanged in only about 15% of families (Isengard, 2018), only the regularly and frequently exchanged forms of emotional and instrumental support are considered below. It should also be mentioned that there are families in which no kind of support is exchanged (Isengard, 2018; Szydlik, 2016), which are not in focus here. Across all forms of support, parents provide more help than they receive from their adult children (Baltes & Silverberg, 1994; Fingerman & Birditt, 2011).

In Germany, as the country where this study was carried out, sons leave their parental home at an average age of 24.5, daughters at 22.9 (Eurostat, 2022). In general, only about 12% of adults live in the same house as their parents. The living distance between the two generations, however, is rather small (Isengard, 2018; Szydlik, 2016).

Support exchange in intergenerational relations - Intergenerational solidarity and reciprocity

The relationship and the exchange of support between adults and their parents is described by the established model of *intergenerational solidarity* (e.g., Bengtson et al., 2002; Roberts et al., 1991). To reflect cohesion and interactions in families, Bengtson and colleagues distinguish six dimensions (affective, associative, consensual, functional, normative, and structural solidarity). The giving and receiving of support are at the core of the dimension of functional solidarity, which includes frequency, forms, and reciprocity in this exchange (e.g., Bengtson & Roberts, 1991). As the dimensions can influence each other, normative, affective, associative, consensual and structural solidarity also affect functional solidarity. For example, functional, normative, and affective solidarity may influence each other (Hogerbrugge & Komter, 2012; Schwarz et al., 2005; Silverstein et al., 2006; Stein et al., 1998). Different aspects also operate within the individual dimensions. In functional solidarity, adults support their parents because of the support they have received, and vice versa (Klaus, 2009; Silverstein et al., 2006)

The description of functional solidarity is primarily limited to structural aspects, so social exchange theories referred to here in order to extend the ideas of Bengtson and his colleagues (e.g., 1991, 2002) and to better explain the processes behind exchange. Exchange theories describe the exchange of support based on a cost-benefit trade-off. In this framework, the concept of reciprocity is described, which generally means the mutual exchange of support. This implies that people offer support and that there is a corresponding *quid pro quo* associated with it. In addition to this real exchange, it is also understood from a normative perspective. Since this normative expectation is generally supported in society, reciprocity is understood as a norm of reciprocity that plays a role in family relationships (e.g., Brandt et al., 2008; Hollstein & Bria, 1998) and can be seen as part of the dimension of normative solidarity. This normative reciprocity implies that receiving something entails the expectation of giving something back (Gouldner, 1960). Thus, in order to achieve a balance between the two generations, the receiver of the support must give something back. While it must be an equivalent exchange, the support need not be returned in the same form, nor need this repayment be direct (Gouldner, 1960; Hollstein & Bria, 1998). Intergenerational relationships are not a one-time event, but are usually a continuous, reciprocal exchange. A distinction can be made between a long-term and a short-term perspective. Long-term reciprocity is understood as an indirect exchange over the course of life, as well as a duty to perform support to parents as a repayment for earlier assistance (e.g., Rossi & Rossi, 1990; Stuifbergen et al., 2010). Our study focuses on short-term mutual exchange, which was investigated and described much less frequently in terms of the parent-child relationship (Leopold & Raab, 2011) and refers to a shorter period from days to several months. Here, too, the exchange does not have to take place in the same

qualities (Hollstein & Bria, 1998; Leopold & Raab, 2011). In adulthood, intergenerational exchanges may be bidirectional with adults providing support if they also received support from their parents (e.g., Klaus, 2009; Leopold & Raab, 2011).

Social norms, received support, felt obligation, and given support and their relations

Social norms

Social norms are subsumed in the dimension of normative solidarity. They outline the common expectation for commitment to family responsibilities and family roles over the course of the relationship (Bengtson & Roberts, 1991). According to these norms, adults and parents should support each other, but not only in times of need (Herlofson et al., 2011).

In general, adults agree with social norms to support parents (Isengard, 2018; Rossi & Rossi, 1990). Moreover, adult sons and daughters aged 45 to 71 who strongly agreed with the norms provided increasingly more support to their mothers three years later than adults with lower agreement with the norms (Silverstein et al., 2006). A closer look at emotional support revealed no correlation between social norms and emotional support of adults aged 27–39 years (Sommer & Buhl, 2018).

Received support

Previous support received is the most important predictor of giving support (e.g., Klaus, 2009; Lowenstein & Daatland, 2006). Klaus (2009), in a cross-sectional study, comparatively tested several potential predictors in a single model and had shown the importance of direct exchanges between adult children aged 25 to 60 years and their parents. The strongest effect for support given by adult children, including emotional and instrumental predictors, was the received support from parents in the last six months. Thus, adults seemed to be motivated to return something that they had received recently. In addition, attachment, cohabitation, gender, and age of the parents were important predictors.

Felt obligation

Felt obligation is conceptualized as “a set of expectations for appropriate behavior within the context of specific personal relationships with kin across the life circle” (Stein, 1993, p. 85). It is understood as a personal feeling that someone should or ought to do something (e.g., *I should support my parents.*). Applied to the relationship between adults and their parents, this means that adults and parents have feelings of personal obligation and expectations

concerning their interaction, which affects interactions between adults and their parents (Stein, 1992, 2009; Stein et al., 1998).

Felt obligations develop against a background of social norms and cultural expectations of appropriate behavior (Hendrick, 1988). In the development of family relationships, the felt obligation emerges and can be influenced by several factors such as the characteristics of family relationships and social and individual aspects such as gender and age structure. Adults can decide to what extent they want to meet or ignore their relatives' expectations (Stein, 1992, 2009; Stein et al., 1998). Felt obligation is understood to be detached from practical dependencies and independent of the age of the family members. It is, thus, distinguished from filial responsibility, which refers primarily to older and needy parents (Stein, 1993, 2009). It refers to different domains of family relationships, such as self-sufficiency, personal sharing, avoidance of conflict, contact, and assistance (Stein, 1993). As the dimension of assistance in particular subsumes the exchange of support, it is in focus of further consideration.

Adults reported strong feelings of obligation toward parents (e.g., Del Corso & Lanz, 2013). Felt obligation, for example, functions as a predictor of support by adults toward mothers, but not toward fathers (Buhl, 2008). There is also a positive association between felt obligation and emotional as well as instrumental support being given by adults to their parents (Stein et al., 1998; Whitbeck et al., 1994).

The concept of social norms summarizes social expectations as well as perceptions and can influence felt obligations.

Relation between social norms and felt obligation

Social norms to support and individual felt obligation are not independent, but conceptually distinct from each other (Silverstein et al., 2006; Stein et al., 1998). Both concepts refer to family members' interaction in families with adult children, however, on different levels. Social norms can be understood as the attitude component. They are embedded in a broader social context. Social norms, thus, do not refer to one's own family, but to families in general (e.g., "*Adults should support their parents*"; Katz et al., 2003; Stein, 2009). Accordingly, general social norms about adults' responsibility to support provide little insight into the unfolding of obligation within the context of ongoing family relationships (Stein, 1993). This is where the concept of felt obligation comes in. It can be understood as a relational component that underlines personal preferences and reflects beliefs and intentions for kin duties and responsibilities in one's own family (Stein, 2009).

In the sense of socialization, social norms are internalized (Klaus, 2009; Stuifbergen et al., 2010) and do not always need to be apparent, but they can still affect felt obligations (Stuifbergen et al., 2010). In addition, commitment to social norms predicted the individual intention to provide support (Silverstein & Litwack, 1993). However, individual intention does not necessarily reflect a personal attitude or evaluation. An adult could endorse social norms to support parents, but feel no individual obligation to help their own parents (Herlofson et al., 2011). In general, social norms are important for mutual support, but adults must accept norms in the context of their own family (Stein, 2009).

Relations between received support and felt obligation

Hence, reciprocity is seen as a general norm for mutual support. In this context, the acceptance of the support offered generates a felt obligation as a basis for adult support of parents (Hollstein & Bria, 1998). In general, there is a positive relationship between the support received and provided by adults and their parents throughout the course of life (e.g., Rossi & Rossi, 1990). It can be noted that short-term and long-term reciprocity assume that receiving support or help may be associated with a felt obligation to give something back or to be grateful. A positive relationship between social support and felt obligation has been shown (Stein, 1992). Thus, there is a link between the concepts of social norms, support received, and felt obligation.

Relations of social norms, received support, felt obligation, and given support

The direct association between support giving from adults to their parents and commitment to social norms, as well as received support, was shown in a few different cross-sectional studies. For example, the OASIS study focused on helping behavior by adults toward their parents aged 75 years or older. A significant but weak positive association was shown between the commitment to social norms and help given to parents, and a strong association between help received and given to parents (Lowenstein & Daatland, 2006). Focusing only on relationships in which parents were active and able to give support to their children in older age, the importance of both constructs for support giving was also shown: In dyads where adults and parents agree with social norms of support, parents received more support. As the support given by parents is taken into consideration, the social norms showed no significance. Also, parents who had given support to their children had the expectation of receiving support from children in return (Klein Ikking et al., 1999). In addition to social norms and received support, felt obligation can motivate one to give support (e.g., Buhl, 2008; Schwarz et al., 2005; Stein et al., 1998).

Differences between mothers and fathers

In most studies, parents are considered together and not differentiated by gender. In the view studies that did consider gender differences, differences were shown between mothers and fathers in the amount and transferral pattern of support. In general, mothers receive and give more support than fathers (e.g., Bucx et al., 2012; Klaus, 2009). In addition, from the perspective of adults, there are also differences in the influencing factors among mothers and fathers. Adults feel higher obligations to mothers than to fathers (Stein, 1992; Stein et al., 1998).

Studies showed that social norms were not a predictor of adult support for mothers or fathers, but that received support was. Differences were found with regard to felt obligation. This were relevant to support mothers, but not in the dyads with fathers (Buhl, 2008). With a special focus on social norms, the more daughters agreed to social norms, the more they supported their mothers. In other dyads, social norms had no influence on the exchange of support (Schwarz et al., 2005; Silverstein et al., 2006).

Purpose of the present study

Only a few studies investigated the importance of different aspects of the helping behavior of adults, and outlined the significance of social norms, received support, and felt obligation. The current study examines how social norms, received support by parents and felt obligation are associated with support giving by adults to their parents. The three constructs and their associations with giving support rarely have been considered together. We assume that all three factors influence the giving of support.

Moreover, the importance of felt obligation in particular has been repeatedly theorized but not empirically tested (e.g., Hollstein & Bria, 1998; Stuifbergen et al., 2010). We therefore assume that felt obligation has a mediating role in the giving of support. It is assumed that social norms as well as received support, can generate felt obligation to give or pay something back. These associations do not have to lead to an immediate return, but can also come into play at a later point in time. Figure 1 showed this described relationship between social norms, received support, felt obligation and given support.

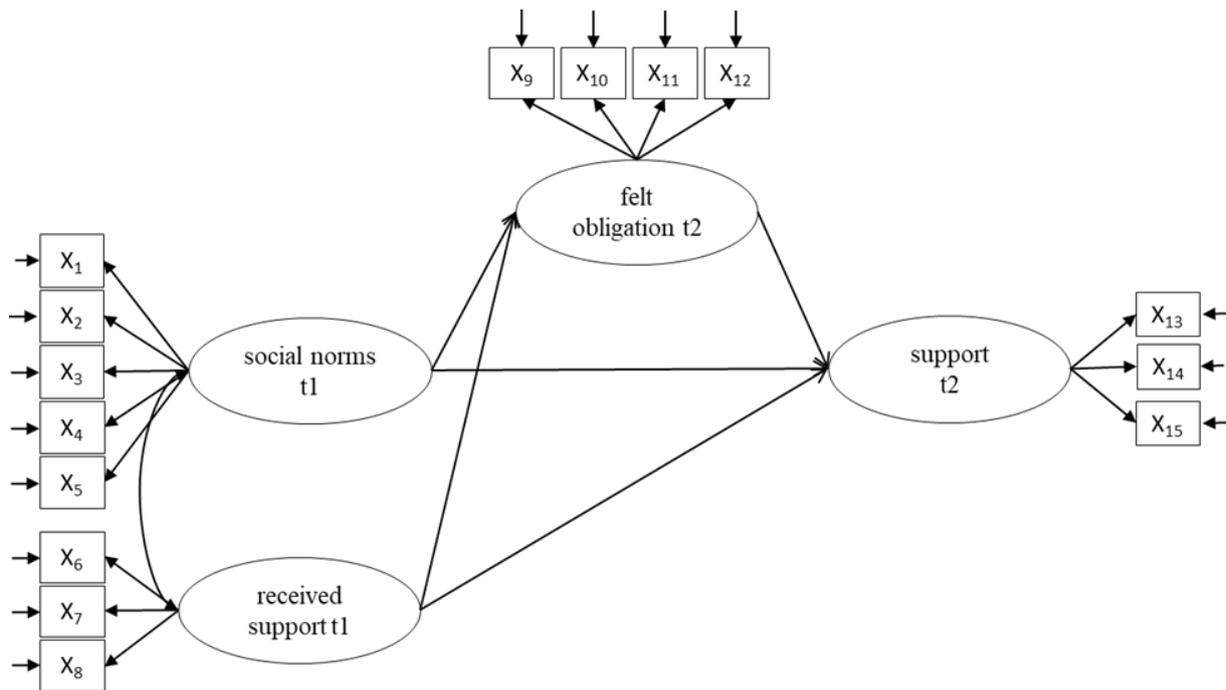


Figure 1. Conceptual model for predicting emotional and instrumental support by adults to mother and father over two measurement points.

The present study focuses on the prediction of the most frequent types of support -emotional and instrumental - given by adults to their parents. Many studies did not differentiate according to the form of support, so that emotional, informational, practical, and financial aspects were often examined together. However, a distinction seems to be useful because different determinants influence the exchange, depending on the forms of support. To get a detailed view, these aspects will be considered separately. Since exchanges in families are often delayed, this aspect is examined here using a longitudinal study.

Due to the inconsistent empirical basis of the previous results of the various forms of support, the hypotheses for emotional and instrumental support are formulated identically. Hence, the following hypotheses were formulated.

At first, it was assumed that social norms, received support by parents, and felt obligation predict support given by adults to their parents.

Hypothesis 1a: Social norms, received emotional support by parents, and felt obligation predict emotional support given by adults to their mothers or fathers.

Hypothesis 1b: Social norms, received instrumental support by parents, and felt obligation predict instrumental support given by adults to their mothers or fathers.

Furthermore, felt obligation was assumed to be a mediator between social norms and given support, as well as received support and given support, which means: Social norms and received support can generate an individual feeling of obligation to support one's own parents.

Hypothesis 2a: Felt obligation mediates the relationship between social norms and given emotional support, and between received emotional support by parents and given emotional support.

Hypothesis 2b: Felt obligation mediates the relationship between social norms and given instrumental support, and between received instrumental support by parents and given instrumental support.

Third, parents' gender was expected to moderate the relationship between social norms, received instrumental support by parents, felt obligation, and emotional support given to fathers and mothers (H3a) and instrumental support given to fathers and mothers (H3b).

Hypothesis 3a: Social norms, received emotional support by parents, and felt obligation have varying importance for support giving to mothers and to fathers.

Hypothesis 3b: Social norms, received instrumental support by parents, and felt obligation have varying importance for support giving to mothers and to fathers.

Method

Sample

The participants were recruited throughout Germany by advertisement such as posters, newspapers, and social media. Participants answered a standardized online questionnaire on the exchange relationship with their parents at two measurements point which were 12 months apart. As an incentive, three vouchers worth €50 were raffled off among all participants. A total of 215 adults aged 22 to 51 years ($M = 35.60$; $SD = 8.95$) responded at both measurement points. All in all, 184 adults answered considering their mother and their father. Six participants considered only their father and 19 only their mother. This was due to the fact that some parents had already passed away or the adults had no contact with them. A total of 172 (80.0%) participants were woman. Concerning their family situation, 175 (81.8%) lived with their partners, and 98 (56.0%) of these were married. In all, 97 participants (45.1%) had children. Concerning their occupational background, 142 (75.4%) had obtained a university degree, and 42 (19.6%) had finished vocational training. Of all participants, 20 (9.6%) cohabited with their

parents, and 98 (46.9%) lived more than one hour's distance away from their parents. Mothers were aged between 44 to 90 years ($M = 64.50$, $SD = 10.56$) and fathers were aged between 44 to 95 years ($M = 66.82$, $SD = 10.60$). Of all the parents, 154 (71.7%) were married and 22 (10.2%) were widowed. Regarding the frequency of contact, 35 (16.7%) had daily contact with their mother and 17 (9.1%) had daily contact with their father. Most of the participants had one or several face-to-face or phone contacts per week with either their mother (59.8%) or their father (48.4%).

Measures

Participants answered for mothers and fathers separately. Only the items for social norms were asked for both parents together.

Support

We measured received support by parents as well as given support by adults by an adaption of two different instruments (Wilhelm et al., 2013; Winter, 2001) and self-developed items. Items asked for the frequency from *never/ rarely* (1) to *very often/ always* (5) for received and given support during the past 12 months. Items differentiated the type of support given in to be either emotional (three items; e.g., "Talk about worries and troubles") or instrumental (e.g., three items; "Give help to the following persons with shopping, housework, or yard work?"). Internal consistency for emotional and instrumental support ranged between $\alpha = .81$ and $\alpha = .95$ for mothers and between $\alpha = .77$ and $\alpha = .95$ for fathers for both measurement points.

Social norms

We assessed social norms by the Filial Responsibility Composite Index (Stein, 1992). This measurement asks for duties and responsibilities in the relationship between adults and parents in general. The participants rated ten items ranging from *absolutely not true* (1) to *absolutely true* (5), with higher scores indicating more responsibilities. For example, participants assessed their agreement with the statement "Children should feel responsible for their parents." A scale score for both parents together ($\alpha^{t1} = .81$; $\alpha^{t2} = .87$) represents the commitment to social norms.

Felt obligation

To acquire adults' obligation toward their parents, we used the subscale "providing assistance of the Felt Obligation Measure (Stein, 1992). Adults assessed their feelings of obligation toward their mother and father separately. Participants rated the frequency from

rarely/never (1) to *very often/always* (5) to how they “feel they need” or “should” support their parents in different ways in four items (e.g., “offer help or advice”). Internal reliability coefficients were for mothers ($\alpha^1 = .76$; $\alpha^2 = .81$) and fathers ($\alpha^1 = .82$; $\alpha^2 = .82$).

Analytic procedures

To test the hypotheses, we used structural equation modeling. Missing values were a minor problem (max = 1.5%). To cope with the missing data, we applied the Full-Information Maximum Likelihood Method. We built item parcels to reduce bias in estimation of structural parameters, increase reliability, and reduce the number of measured variables in the model. We used the method of item-to-construct balance (Little et al., 2009). This resulted in three parcels for both types of received and given support respectively, and five parcels for social norms (see figure 1).

Then we constructed and compared a series of multi-group models. To test for measurement invariance, we calculated multigroup confirmatory factor analysis (CFA). The groups were formed comparing mothers and fathers for emotional and instrumental support separately.

For group comparison between mothers and fathers, we followed a step-up procedure and added more restrictions to the model in each of overall steps. First, we tested configural invariance by comparing factorial structure. Second, metric invariance was tested by constrained the factor loadings to be equal across the groups (Steenkamp & Baumgartner 1998). To compare the paths between the constructs, afterwards, we tested structural invariance. In each step, data fit was tested for the more restrictive model, in comparison to the previous, more parsimonious model. We used multiple indices to assess model fit. Besides the chi-square (χ^2) test statistic, we determined the values that are sensitive to sample size by relying on standard cut-off recommendations of the comparative fit index (CFI; values $\geq .95$) and the root-mean-square error of approximation (RMSEA; values $\leq .05$, Chen, 2007). We tested the mediating effects of felt obligation using bias corrected bootstrapping procedures, with 2,000 samples to estimate a total mediation and to compute a 95% confidence interval for this effect (Preacher et al., 2007). For all the analyses described, we used the program AMOS version 26 (Arbuckle, 2019).

Results

Descriptive statistics

Table 1 presents the correlations, means, and standard deviations for felt obligation, and emotional and instrumental support, for mothers and fathers separately. In general, means for felt obligation and support given by adult children were on a moderate level. A comparison of the means of given emotional and instrumental support, as well as felt obligation, suggested differences between mothers and fathers (Pillai's Trace = .94, $F(6, 338) = 17.47, p = .00$). Mothers were more likely to have received emotional and instrumental support at measurement point one ($F^{\text{emotional}}(1, 394) = 18.88, p = .00$; $F^{\text{instrumental}}(1, 394) = 66.46, p = .00$) and two ($F^{\text{emotional}}(1, 394) = 11.45, p = .00$; $F^{\text{instrumental}}(1, 394) = 91.51, p = .00$) by their adult children compared to fathers. Adults reported higher levels of felt obligation for mothers than they did for fathers at both measurement points ($F^{t1}(1, 394) = 13.78, p = .00$; $F^{t2}(1, 394) = 21.63, p = .00$).

Correlations for the constructs social norms, received emotional and received instrumental support by parents showed high stability ($> .70$) across both measurement points.

Correlations between the two measurement points for felt obligation, given emotional support, and given instrumental support were at moderate levels ($> .50$).

Table 1. Descriptive Information and Correlations for Both Measurement Points

		Correlations ^b																	
		Mother				Father				Measurement point 1						Measurement point 2			
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	SN	FO	rEmo	rIns	Emo	Ins	SN	FO	rEmo	rIns	Emo	Ins		
1	SN ^a	2.78	0.61	2.78	0.60	-	.18*	.34*	.33*	.10	.18*	.75*	.25*	.28*	.30*	.15*	.15*		
	FO	2.74	0.87	2.34	0.92	.25*	-	.25*	.24*	.26*	.36*	.19*	.54*	.23*	.29*	.24*	.28*		
	rEmo	2.88	1.08	2.33	1.01	.31*	.34*	-	.50*	.60*	.27*	.26*	.27*	.75*	.45*	.51*	.28*		
	rIns	1.79	0.77	1.72	0.66	.31*	.27*	.38*	-	.32*	.51*	.33*	.23*	.37*	.70*	.33*	.58*		
	Emo	2.93	0.88	2.22	0.82	.15*	.44*	.58*	.38*	-	.36*	.13	.26*	.50*	.27*	.66*	.35*		
	Ins	2.02	0.81	1.72	0.72	.24*	.38*	.25*	.58*	.40*	-	.22*	.30*	.20*	.51*	.28*	.79*		
2	SN	2.86	0.70	2.82	0.64	.75*	.20*	.17*	.25*	.03	.16*	-	.28*	.30*	.35*	.20*	.25*		
	FO	2.69	0.87	2.39	0.90	.37*	.62*	.34*	.17*	.42*	.40*	.39*	-	.32*	.29*	.36*	.32*		
	rEmo	2.83	1.09	2.16	0.97	.22*	.29*	.74*	.34*	.41*	.16*	.20	.44*	-	.50*	.64*	.29*		
	rIns	1.72	0.74	1.64	0.72	.36*	.21*	.30*	.74*	.20*	.40*	.39*	.37*	.42*	-	.39*	.59*		
	Emo	2.93	0.99	2.06	0.80	.17*	.33*	.38*	.30*	.53*	.33*	.22*	.57*	.62*	.40*	-	.45*		
	Ins	2.00	0.86	1.67	0.75	.27*	.21*	.14	.45*	.21*	.68*	.33*	.44*	.21*	.55*	.49*	-		

Note. For descriptive purposes, descriptive information has been provided for mother and father separately except social norms. ^aSN = Social norms, FO = felt obligation, rEmo = received emotional support by parents, rIns = received instrumental support by parents, Emo = given emotional support, Ins = given instrumental support; ^bCorrelations for mother dyads ($n = 209$) are presented above the diagonal; the ones for father dyads ($n = 186$) are presented below the diagonal; * $p < .01$.

Structural equation modeling

In line with the hypotheses, two models for emotional and instrumental support were constructed separately. Those two models are described below.

Emotional support

Configural and metric invariance. To be able to interpret differences in the prediction between mothers and fathers, it is necessary to test the comparability of constructs. Therefore, we tested configural and metric invariance. Performing CFA for testing the models of mothers and fathers separately, we achieved a good model fit for both models separately and simultaneously (configural invariance). Table 2 gives an overview of all tested models. Results of the multi-group analysis testing showed an equivalent pattern of factor loadings across mothers and fathers, as indicated by a nonsignificant chi-square difference test ($\Delta\chi^2 = 11.71$, $p > .05$) and stable CFI values from model 2a to model 2b. Therefore, metric invariance is supported.

Table 2. Goodness of Fit Statistics for Measurement Invariance in the Model for Emotional and Instrumental Support

	Models	χ^2	df	$\Delta\chi^2$	Δdf	TLI	CFI	RMSEA
Emo	1 Single group							
	1a Mother	110.91	84	-	-	.980	.984	.039
	1b Father	124.81	84	-	-	.966	.973	.051
	2 Measurement group invariances							
	2a Configural	235.72	168	-	-	.974	.979	.032
	2b Metric	247.43	179	11.71	11	.975	.979	.031
	3 Structural invariances	251.3	184	3.60	5	.976	.979	.030
Ins	1 Single group							
	1a Mother	110.05	84	-	-	.972	.977	.039
	1b Father	114.01	84	-	-	.965	.972	.044
	2 Measurement group invariances							
	2a Configural	224.06	168	-	-	.975	.968	.029
	2b Metric	230.19	179	6.122	11	.977	.973	.027
	3 Structural invariances	236.01	184	11.947	5	.973	.977	.027

Note. Emo = emotional support, Ins = instrumental support; Following a common classification of types of invariance (Steenkamp & Baumgartner, 1998) different parameters were restricted:

configural: non; metric: loadings; structural: loadings and paths; * Significant difference between models at $p < 0.5$.

Structural model and invariance. In order to examine differences in the effect of the influencing factors between mothers and fathers, we tested the structural invariance. The results from the analysis of structural equation models for emotional support are presented in Table 3. Hypothesis 1, which assumes that social norms, support from parents, and felt obligation predict adult support, is partially confirmed. Regarding mothers and fathers, all associations between the four constructs were significant, except social norms and emotional support in the model for mothers. A negative effect of social norms and emotional support was significant in the model for fathers. This negative value can be explained by a suppressor effect, which is interpreted in the discussion section. Also, correlations between both predictors to the first measurement point were significant.

To test the third hypothesis, and when considering differences between mothers and fathers in the prediction, we used a comparison by multi-group analyses between the baseline models. Therefore, all factor loadings were set to be equal, and the paths were free estimated for mothers and fathers. Where the paths were set equal, the constrained model demonstrated structural invariance ($\Delta\chi^2 = 15.30$, $p > .05$; Steenkamp & Baumgartner, 1998). This implied that there were no differences in the associations in the models for mothers and fathers.

Table 3. Unstandardized and Standardized Estimates for Model in Figure 1 (Standard Errors in Parentheses; $N_{\text{mother}} = 209$; $N_{\text{father}} = 186$)

Parameter Estimate	Emotional support				Instrumental support			
	Mother		Father		Mother		Father	
	<i>B</i> (<i>SE</i>)	β						
Measurement model								
SN → X1	1.00	0.67 ^{na}	1.00	0.69 ^{na}	1.00	0.68 ^{na}	1.00	0.69 ^{na}
SN → X2	1.32(.17)	0.67**	1.32(.18)	0.66**	1.29(.16)	0.67**	1.31(.17)	0.66**
SN → X3	0.91(.12)	0.65**	0.90(.12)	0.66**	0.88(.12)	0.63**	0.88(.12)	0.64**
SN → X4	1.22(.16)	0.66**	1.17(.16)	0.66**	1.17(.15)	0.65**	1.15(.15)	0.65**
SN → X5	1.14(.14)	0.69**	1.14(.15)	0.69**	1.14(.14)	0.71**	1.17(.15)	0.71**
rSup → X6	1.00	0.87 ^{na}	1.00	0.91 ^{na}	1.00	0.78 ^{na}	1.00	0.70 ^{na}
rSup → X7	1.03(.05)	0.92**	0.89(.04)	0.92**	1.16(.11)	0.78**	1.13(.14)	0.75**
rSup → X8	1.06(.05)	0.94**	0.93(.04)	0.93**	0.86(.09)	0.78**	0.92(.11)	0.75**
FO → X9	1.00	0.66 ^{na}	1.00	0.70 ^{na}	1.00	0.65 ^{na}	1.00	0.68 ^{na}
FO → X10	0.93(.12)	0.67**	1.07(.13)	0.72**	0.95(.12)	0.68**	1.12(.13)	0.73**
FO → X11	1.00(.12)	0.75**	0.93(.12)	0.66**	1.02(.12)	0.76**	1.00(.13)	0.69**
FO → X12	1.18(.14)	0.78**	1.33(.14)	0.85**	1.18(.14)	0.78**	1.36(.15)	0.84
Sup → X13	1.00	0.89 ^{na}	1.00	0.88 ^{na}	1.00	0.83 ^{na}	1.00	0.86 ^{na}
Sup → X14	0.98(.05)	0.89**	1.08(.08)	0.88**	0.94(.08)	0.74**	1.03(.08)	0.82**
Sup → X15	0.96(.05)	0.91**	0.81(.06)	0.79**	1.08(.08)	0.87**	0.94(.08)	0.82**
Covariance SN and rSup	0.19(.04)	0.40**	.17(.05)	0.35**	0.14(.03)	0.41**	0.11(.03)	0.39**
Structural model								
SN → FO	0.38(.15)	0.24*	0.63(.15)	0.40**	0.38(.15)	0.25*	0.63(.16)	0.42**
SN → Sup	-0.27(.16)	- 0.13	-0.33(.15)	- 0.20*	-0.22(.14)	- 0.13	-0.04(.14)	- 0.03
rSup → FO	0.17(.07)	0.22*	0.19(.06)	0.26**	0.21(.10)	0.20*	0.35(.09)	0.19*
rSup → Sup	0.48(.07)	0.50**	0.43(.06)	0.56**	0.72(.11)	0.63**	0.56(.12)	0.45**
FO → Sup	0.38(.10)	0.30**	0.36(.10)	0.33**	0.24(.08)	0.23**	0.24(.12)	0.36**

Note. ^{na}not available; Model fits see Table 2; * $p < .05$; ** $p < .01$.

Mediation. The mediation path tested the second hypothesis that social norms and received support by parents would be associated with given support, and mediated by felt obligation. Table 4 presents an overview of all mediation analyses tested. The expected indirect effect for social norms for given emotional support mediated by felt obligation was significant in the model for mothers ($\beta = .07, p < .05$) as well as fathers ($\beta = .13, p < .01$), and showed total mediation effects. Partial mediation effects were considered for both parents ($\beta^{\text{mothers}} = .07, p < .05; \beta^{\text{fathers}} = .09, p < .01$) for the mediated path of received emotional support by parents, felt obligation, and given emotional support. Thus, the expected mediated function of felt obligation was supported.

Table 4. Direct and Indirect Effects for Felt Obligation and Given Support

Independ Variable	Depend Variable	Mother				Father			
		Direct Effect	Indirect Effect	95% CI		Direct Effect	Indirect Effect	95% CI	
				lower	upper			lower	upper
SN	Emo	.16*	.07*	.07	.16	.17*	.13**	.05	.26
rEmo		.54**	.07*	.01	.18	.63**	.09**	.03	.20
SN	Ins	.20*	.06*	.01	.15	.33**	.15**	.06	.29
rIns		.57**	.05	.01	.13	.57**	.07*	.01	.20

Note. SN = social norms, rEmo = received emotional support by parents, rIns = received instrumental support by parents, Emo = given emotional support by adults, Ins = given instrumental support by adults. All effects are standardized. Significances of indirect effects were tested using a bootstrapping method. * $p < .05$; ** $p < .01$.

Instrumental support

Configural and metric invariance. The CFA also obtained a good model fit for the models for mothers and fathers, with instrumental support also for both simultaneously (Table 2). Configural invariance was shown. Testing metric invariance showed that the restricted model fit the data well because of the nonsignificant change in the chi-square value ($\Delta\chi^2 = 6.12, p > .05$) and a better CFI value ($\Delta\text{CFI} = .005$).

Structural model and invariance. Table 2 represents the path coefficients for mothers and fathers. Paths for social norms to instrumental support were not significant in both models for parents. The following multi-group analyses showed no differences in testing structural invariance ($\Delta\chi^2 = 11.95, p > .05$). Hence, differences in the prediction of given instrumental support between mothers and fathers were not shown. Hypothesis 3 was not supported.

Mediation. In Hypothesis 2, the expected mediation function of felt obligation was also tested for social norms as well as for received instrumental support (Table 4). In line with the

hypothesis, the indirect effect of felt obligation for social norms was significant ($\beta^{\text{mothers}} = .06, p < .05$; $\beta^{\text{fathers}} = .15, p < .01$). Thus, total mediation effects were seen. We estimated the indirect effect of felt obligation by received instrumental support to given instrumental support to be significant for fathers ($\beta = .07, p < .05$), but not for mothers ($\beta = .05, p > .05$). This indicated a partial mediation effect for fathers.

Discussion

The present study examined the importance of social norms, received support by parents, and felt obligation as predictors of adults giving support to their parents. In particular, the often assumed mediating role of perceived commitment was examined. For this purpose, 215 adults were questioned about their relationship with their parents at two points in time, with an interval of 12 months.

In general, the well-known, more frequent exchange of emotional and instrumental support from adults to mothers compared to fathers was replicated (e.g., Klaus, 2009; Klein Ikking et al., 1999). In line with other studies, adults expressed higher felt obligation toward their mothers compared to toward their fathers (e.g., Stein, 1992, 1998).

Due to the small differences in the prediction for emotional and instrumental support, the present results for both forms of support are discussed together below. The first step of the analysis examined the measurement model of the constructs of social norms, support measures for both emotional and instrumental support, and felt obligation. The measurement models did not differ between mothers and fathers. It can therefore be assumed that these constructs are understood by adults in the same way. This is important because the results for mothers and fathers can be compared, and a moderation effect for the gender of the parents can be tested.

Relation of social norms, received support, felt obligation, and given support

In partial accordance with the first hypothesis, received support from parents and felt obligation were positively associated with given support by adults to their parents one year later. This applied to both emotional and instrumental support. The strongest effect of emotional and instrumental support, and for mothers in all four models, was shown to be between received support from parents and given support by adults. This result is consistent with previous research results, which showed that receiving support has the strongest effect (e.g., Klaus, 2009; Klein Ikking et al., 1999). This reciprocity is an important issue for explaining actual support giving. In addition to received support, felt obligation had a significant effect on

given support, and confirmed the results by Stein et al. (1998) and Whitbeck et al. (1994). Contrary to the hypothesis, social norms did not have an effect on given emotional or instrumental support to mothers, and instrumental support to father. For given emotional support to fathers, there was a direct negative effect. This effect occurred when all three predictors were considered together. Thus, the direct effect of social norms was negative, but the indirect effect mediated by felt obligation was positive. If the signs of the direct and indirect effect are different, this is called suppressor effect or inconsistent mediation (MacKinnon et al., 2001). According to Burkholder and Harlow (2003), this is not a serious problem, but should be reflected in the interpretation. In the present case, felt obligation had a positive effect on given support. Due to the total mediation of social norms by felt obligation, it is possible that only the variance shares in the direct relationship between social norms and given support remain, which have a negative association. So, the effect of social norms for given emotional support to fathers will not be analysed further.

The observation that social norms were not relevant may be due to the fact that social norms are more likely to be relevant in situations that indicate actual needs, such as parents in need of care, or sons and daughters in childhood and adolescence (Silverstein et al., 2006; Stein, 1992; Stein et al., 1998). In this sense, social norms could play only a smaller role in the daily exchange of support in the given sample because there are no substantial needs.

The overall amount of variance on given support by adults is highest in the model for instrumental support to mothers, and lowest for emotional support to mothers. These differences between emotional and instrumental support are not considered in support giving toward fathers. Maybe other aspects are additionally or more important for the prediction of emotional support exchange with mothers, such as affection or closeness (e.g., Klaus, 2009).

Felt obligation as mediator

The assumption of a mediator effect for felt obligation, which was made in the third hypothesis, was actually shown. In general, social norms and received support by parents had a positive effect on felt obligation. Hence, the assumed link between commitment to social norms and received help on a felt obligation was found. Therefore, both aspects can elicit an individual felt obligation to support parents or to give something in return. A total mediation could be considered for social norms. Accordingly, the direct effect of social norms disappeared when considering felt obligation. Stuifbergen et al. (2010) explained this total effect: General norms of obligation or expectations of other people to support elderly parents were not shared by adult children, but the adults emphasized supporting their parents based on an individual obligation. Otherwise, some adults committed to social norms stressed the importance of other factors. Therefore, it can be assumed that social norms were internalized

in cases of socialization, and generated individual feelings of obligation (Klaus, 2009; Stuijbergen et al., 2010). Additionally, felt obligation mediated the impact of received support on given support. This partial mediation indicates that received support and felt obligation have an effect on the frequency and amount of support given by adults. Thus, received support contributed to an individual feeling of obligation to support, but a direct effect also remained.

Beside the often-assumed link of individual felt obligation to support, other aspects are important. Literature also describes other forms of obligation in response to received help. Received help does not automatically mean an obligation to give something back in the form of support, but at least to be thankful (Hollstein & Bria, 1998).

Parents' gender as moderator

The third hypothesis assumed differences in the prediction of given support between mothers and fathers. In contrast to this moderator-hypothesis, there were no differences in the effects of received support, social norms, and felt obligation on given support between mothers and fathers. However, recent studies found fewer differences between men and women in both the adult children and the parent generation (e.g., Buhl, 2008; Fingerman et al., 2007; Schwarz et al., 2005; Sommer & Buhl, 2018). This can be explained by the fact that gender roles have changed in recent decades. There has been a clear convergence, and men are more involved in family life (Fingerman & Birditt, 2011).

In summary, the results indicate support for the importance of felt obligation in the associations of support giving in the relationship between adults and their parents.

The importance of social norms, received support, and felt obligation for support giving by adults to their parents, and the mediation effect, was shown. Differences in significance depending on the type of support could be observed. Interestingly, no differences between mothers and fathers were found.

Limitations and outlook

Although the study results are convincing, there are also preliminary and methodological limitations which are now discussed. Primarily, the generalization of the findings is limited because of a study sample with a high number of female participants and participants with a university degree. Furthermore, the interval between the two survey dates was 12 months. A smaller or larger interval would possibly reflect other aspects of the exchange. A combination with regard to the long-term perspective would also be useful because there may be differences depending on the age of the adult children.

The present study focused on a special sequence of the association between social norms and reciprocity, and outlined the mediating effect of felt obligation. It is known that the support exchange between adults and their parents is determined by different aspects. For a better understanding of transfers motivated by received support, a comparison with both types of support in one model is useful. In that case, a greater sample size is required to detect effects (Westland, 2010). For a comprehensive understanding, it is necessary to consider more aspects together in one model. The importance of aspects of relationships, such as affection (e.g., Cheng et al., 2013; Rossi & Rossi, 1990) or conflicts (e.g., van Gaalen & Dykstra, 2006), have been shown several times. A model that tests multiple aspects in a comparative way would be useful. It is also possible that associations of other predictors with support given by adults are mediated by felt obligation. Moderate associations between social norms, received support, and felt obligation to the first measurement point may indicate a higher order construct for family relations in general, such as shared values or family climate (Albert et al., 2013). These assumptions have to be tested in future studies. A comparative view of the four dyads for adults and parents was not possible because of the small number of male participants. Future studies should differentiate between sons and daughters to test gender-specific aspects in the child generation. For a comprehensive understanding, it is also necessary to include parents of adults, and examine family triads. Testing mediation effects with two measurement points is a good abbreviated strategy. However, three measurement points are useful to correct the common problem of bias effects, such as in cross sectional data (Cole & Maxwell, 2003).

Conclusion

Taken together, and besides limitations, the results of this study are an important contribution for a better understanding of the support behavior by adults to their healthy and independent parents. This is especially in consideration of the role of felt obligation extended to prior research.

Data availability statement

The research data is not publicly available.

References

- Albert, I., Ferring, D., & Michels, T. (2013). Intergenerational family relations in Luxembourg: Family values and intergenerational solidarity in Portuguese immigrant and Luxembourgish families. *European Psychologist, 18*, 59-69. <https://doi.org/10.1027/1016-9040/a000125>
- Arbuckle, J. L. (2019). Amos (Version 26.0) [Computer Program]. Chicago: IBM SPSS.
- Baltes, M. M., & Silverberg, S. B. (1994). The dynamics between dependency and autonomy: Illustrations across the life span. In D. L. Featherman, R. M. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior* (pp. 41-90). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.
- Bengtson, V. L., & Roberts, R. E. L. (1991). Intergenerational solidarity in aging families: An example of formal theory construction. *Journal of Marriage and Family, 53*, 856–870. <https://doi.org/10.2307/352993>
- Bengtson, V., Giarrusso, R., Mabry, J. B., & Silverstein, M. (2002). Solidarity, Conflict, and Ambivalence: Complementary or Competing Perspectives on Intergenerational Relationships? *Journal of Marriage and Family, 64*(3), 568–576. <http://www.jstor.org/stable/3599924>
- Brandt, M., Deindl, C., Haberkern, K., & Szydlik, M. (2008). Reziprozität zwischen erwachsenen Generationen: Familiäre Transfers im Lebenslauf [Reciprocity between adult generations: Family transfers over the life course]. *Zeitschrift für Gerontologie und Geriatrie, 41*, 374–381. <https://doi.org/10.1007/s00391-008-0003-7>
- Buhl, H. M. (2008). Ein erweitertes individuierungstheoretisches Modell zur Vorhersage der aktuellen und geplanten Unterstützung Erwachsener für ihre Eltern. [An advanced individuation model predicting actual and planned support for parents provided by their adult children.] In E. J. Brunner (Ed.), *Intergenerationelle Transferleistungen in Familien*. [Intergenerational Familial Transfers] (pp. 79–99.) Jena: IKS Garamond.

Burkholder, G. J., & Harlow, L. L. (2003). An illustration of a longitudinal cross-lagged design for larger structural equation models. *Structural Equation Modeling, 10*, 465–486.

https://doi.org/10.1207/S15328007SEM1003_8

Bucx, F., van Wel, F., & Knijn, T. (2012). Life course status and exchange of support between young adults and parents. *Journal of Marriage and Family, 74*, 101-115.

<https://doi.org/10.1111/j.1741-3737.2011.00883.x>

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling, 14*, 464–504.

<https://doi.org/10.1080/10705510701301834>

Cheng, Y. P., Birditt, K. S., Zarit, S. H., & Fingerman, K. L. (2013). Young adults' provision of support to middle-aged parents. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 70*, 407–416.

<https://doi:10.1093/geronb/gbt108>

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558–577.

<https://doi.org/10.1037/0021-843X.112.4.558>

Del Corso, A. R., & Lanz, M. (2013). Felt obligation and the family life cycle: A study on intergenerational relationships. *International Journal of Psychology, 48*, 1196–1200.

<https://doi.org/10.1080/00207594.2012.725131>

Eurostat. (n.d.). Durchschnittsalter junger Menschen* beim Verlassen des elterlichen Haushalts nach Geschlecht der EU im Jahr 2020. [Average age of young people* leaving parental household by gender in European countries in 2020]. In Statista - Das Statistik-Portal.

<https://de.statista.com/statistik/daten/studie/73631/umfrage/durchschnittliches-alter-beim-auszug-aus-dem-elternhaus/> [Retrieved Mai 22, 2023]

Fingerman, K. L., Hay, E. L., Kamp Dush, C. M., Cichy, K. E., & Hosterman, S. J. (2007). Parents' and offspring's perceptions of change and continuity when parents

experience the transition to old age. *Advances in life course research*, 12, 275–306.

[https://doi.org/10.1016/S1040-2608\(07\)12010-4](https://doi.org/10.1016/S1040-2608(07)12010-4)

Fingerman, K. L., & Birditt, K. S. (2011). Relationships between adults and their aging parents. In K. W. Schaie & S. L. Willis (Eds.), *Handbook of the psychology of aging* (7th ed., pp. 219-232). San Diego, CA, US: Elsevier Academic Press.

<https://doi.org/10.1016/B978-0-12-380882-0.00014-0>

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25, 161–78.

Hendrick, C. (1988). Roles and Gender in Relationships. In S. W. Duck (Ed.) *Handbook of personal relationships* (pp. 429-448). New York: Wiley.

Herlofson, K., Hagestad, G., Slagsvold, B., & Sørensen, A.- M. (2011). Intergenerational family responsibility and solidarity in Europe. Retrieved from Research on multilinks-project website:

https://www.researchgate.net/publication/268276807_Intergenerational_family_responsibility_and_solidarity_in_Europe [Retrieved Mai 22, 2023]

Hogerbrugge, M. J. A., & Komter, A. E. (2012). Solidarity and Ambivalence: Comparing Two Perspectives on Intergenerational Relations Using Longitudinal Panel Data. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 67, 372–383. <https://doi:10.1093/geronb/gbr157>

Hollstein, B., & Bria, G. (1998). Reziprozität in Eltern-Kind-Beziehungen? Theoretische Überlegungen und empirische Evidenz [Reciprocity in parents-child relationships? Theoretical considerations and empirical evidence]. *Berliner Journal für Soziologie*, 8, 7-22.

Isengard, B. (2018). *Nähe und Distanz? Verbundenheit von Familiengenerationen in Europa*. [Proximity and distance? Connectedness of family generations in Europe.]. Opladen: Budrich UniPress.

- Katz, R., et. al. (2003). Family norms and preferences in intergenerational relations. In V.L. Bengtson & A. Lowenstein (Eds.) *Global aging and challenges to families* (pp. 305-326). New York: Routledge.
- Klaus, D. (2009). Why do adult children support their parents? *Journal of Comparative Family Studies*, 40, 227–241.
- Klein Ikking, K., van Tilburg, T., & Knipscheer, K. C. P. M. (1999). Perceived instrumental support exchanges in relationships between elderly parents and their adult children: Normative and structural explanations. *Journal of Marriage and Family*, 61, 831–844. <https://doi.org/10.2307/354006>
- Leopold, T., & Raab, M. (2011). Short-term reciprocity in late parent-child relationships. *Journal of Marriage and Family*, 73, 105-119. <https://doi.org/10.1111/j.1741-3737.2010.00792.x>
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2009). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151–173. https://doi.org/10.1207/S15328007SEM0902_1
- Lowenstein, A., & Daatland, S. O. (2006). Filial norms and family support in a comparative cross-national context: Evidence from the OASIS study. *Ageing & Society*, 26, 203–223. <https://doi.org/10.1017/S0144686X05004502>
- Mackinnon, D. P., Krull, J. L., & Lockwood C. M. (2001). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, 1, 173-81. <https://doi.org/10.1023/A:1026595011371>
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185–227. <https://doi.org/10.1080/00273170701341316>
- Roberts, R. E. L., Richards, L. N., & Bengtson, V. (1991). Intergenerational Solidarity in Families, *Marriage & Family Review*, 16, 11-46. https://doi.org/10.1300/J002v16n01_02
- Rossi, A. S., & Rossi, P. H. (1990). *Of human bonding: Parent-child relations across the life*

- course. Hawthorne: Aldine de Gruyter.
- Schwarz, B., Trommsdorff, G., Albert, I., & Mayer, B. (2005). Adult parent-child relationships: Quality, support, and reciprocity. *Applied Psychology: An International Review*, *54*, 396–417. <https://doi.org/10.1111/j.1464-0597.2005.00217.x>
- Silverstein, M., Conroy, S. J., Wang, H., Giarrusso, R., & Bengtson, V. L. (2002). Reciprocity in parent–child relations over the adult life course. *The Journals of Gerontology*, *57*, 3–13. <https://doi.org/10.1093/geronb/57.1.S3>
- Silverstein, M., Gans, D., & Yang, F. M. (2006). Intergenerational support to aging parents: The role of norms and needs. *Journal of Family Issues*, *27*, 1068–1084. <https://doi.org/10.1177/0192513X06288120>
- Silverstein, M., & Litwack, E. (1993). A task-specific typology of intergenerational family structure in later life. *The Gerontologist*, *33*, 258-264. <https://doi.org/10.1093/geront/33.2.258>
- Sommer, S. & Buhl, H. (2018). Intergenerational transfers: Predicting adult children’s emotional support of their parents. *Journal of Adult Development*, *25*, 286-296. <https://doi.org/10.1007/s10804-018-9296-y>
- Steenkamp, J.-B. E. M., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, *25*, 78–90. <https://doi.org/10.1086/209528>
- Stein, C. H. (1992). Ties that bind: Three studies of obligation in adult relationships with family. *Journal of Social and Personal Relationships*, *9*, 535–547. <https://doi.org/10.1177/0265407592094004>
- Stein, C. H. (1993). Felt obligation in adult family relationships. In S. Duck (Ed.), *Social context and relationships* (pp. 78-99). Newbury Park, CA: Sage.
- Stein, C. H. (2009). “I owe it to them”: Understanding felt obligation towards parents in adulthood. In K. Shifren (Ed.), *How caregiving affects development: Psychological implications for child, adolescent, and adult caregivers* (pp. 119–145). Washington D.C.: American Psychological Association.

- Stein, C. H., Wemmerus, V. A., Ward, M., Gaines, M. E., Freeberg, A. L., & Jewell, T. C. (1998). Because they're my parents: An intergenerational study of felt obligation and parental caregiving. *Journal of Marriage and the Family*, *60*, 611–622. <https://doi.org/10.2307/353532>
- Stuifbergen, M. C., Dykstra, P. A., Lanting, K. N., & Delden, J. J. M. (2010). Autonomy in an ascribed relationship: The case of adult children and elderly parents. *Journal of Aging Studies*, *24*, 257–265. <https://doi.org/10.1016/j.jaging.2010.05.006>
- Szydlik, M. (2016). *Sharing lives – adult children and parents*. London, New York: Routledge.
- Van Gaalen, R. I. & Dykstra, P.A. (2006). Solidarity and conflict between adult children and parents: A latent class analysis. *Journal of Marriage and Family*, *68*, 947–960. <https://doi:10.1111/j.1741-3737.2006.00306.x>.
- Westland, J. C. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications*, *9*, 476–487. <https://doi.org/10.1016/j.elerap.2010.07.003>
- Whitbeck, L., Hoyt, D. R., & Huck, S. M. (1994). Early family relationships, intergenerational solidarity, and support provided to parents by their adult children. *Journal of Gerontology*, *49*, 85–94. <https://doi.org/10.1093/geronj/49.2.S85>
- Wilhelm, B., Thönnissen, C., Schmahl, F., Fiedrich, S., Gschwendtner, C., Wendt, E. V., & Walper, S. (2013). Parifam: Scales Manual, wave 1–4, 4.0. Unpublished manuscript.
- Winter, Y. (2001). *Instrumentelle Unterstützung in erwachsenen Eltern-Kind- Beziehungen und die subjektive Beurteilung der Beziehung*. [Instrumental support in adult child-parents relationships and their personal judgment on the relation.] Unpublished manuscript, Jena.