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Gender Differences in Adult Children's Support of Their Parents in Taiwan

This paper examines the patterns and determinants of four types of support provided by adult children to their parents, with particular attention to differences in the helping behaviors of sons and daughters. The data come from the 1989 wave of the Survey of Health and Living Status of the Elderly in Taiwan. The analysis is based on 12,166 adult children from 2,527 families. We find that usually only one child in a family provides help with activities of daily living (ADLs) or instrumental activities of daily living (IADLs), but for

financial or material support the responsibility is likely to be shared among siblings. Sons generally carry the major responsibility for taking care of their older parents, and daughters fulfill the son's roles when sons are not available.

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Taiwan is one of the newly industrialized societies that have experienced rapid demographic, economic, and social changes over the second half of the last century. Between 1952 and 2000, life expectancy at birth increased by about 20 years, whereas total fertility dropped by nearly five births (Population Reference Bureau, 2001). As a result of this demographic transition, the percentage of people who are 65 years or older has almost quadrupled from 2.5 to 9 and is expected to rise to 14% of the population by the year 2020 (Li, 1994). Taiwan has been transformed from a rural, agricultural society to a highly urbanized, industrial one (Hermalin, Liu, & Freedman, 1994): For example, the percentage of the population living in cities has tripled, the percentage of the labor force engaged in agriculture has decreased from 56.1 to 13.7, and per capita income has grown more than ninefold over this period.

Despite these far-reaching changes, most parents in Taiwan continue to live with their adult children, particularly their married sons (Chang, 1999; Ofstedal, Knodel, & Chayovan, 1999; Sun

& Liu, 1994; Weinstein, Sun, Chang, & Freedman, 1990). The direction of financial flows is still dominated by transfers from adult children to their parents (Lee, Parish, & Willis, 1994; Sun & Liu, 1994), in part because placing parents in a nursing home has been perceived as a violation of traditional filial obligations (Kao & Stuitbergen, 1999), and in part because the government provides minimal protection from potential economic hardship. The preference for family assistance and the lack of institutional support underscore the importance for older persons of help provided by members of social networks, particularly adult children.

Although a number of studies have examined intergenerational transfers in Taiwan (e.g., Chattopadhyay & Marsh, 1999; Hermalin, Ofstedal, & Chang, 1996; Hermalin, Ofstedal, & Lee, 1992; Ofstedal et al., 1999; Sun & Liu, 1994), most are descriptive or reflect the perspective of the aging parents, rather than the children. Previous studies have examined the prevalence of support among older adults, the number and type of kin available for support, and factors determining whether aging parents receive support, but little is known about the underlying mechanisms by which adult children provide support to their parents (an exception is Lee et al., 1994).

The objective of the present study is to extend prior research by examining the empirical evidence in Taiwan for a set of five explanations of why adult children provide support to their aging parents. A related goal is to compare and contrast the helping behaviors of sons and daughters. There are two salient aspects of Taiwanese society that motivate this detailed examination of gender differences in the provision of support by children. First, Taiwan is a patriarchal society in which sons bear the primary responsibility of continuing the descent line of the father's family. Although a daughter belongs to her father's family before marriage, she joins the descent line of her husband's family upon marriage (Wolf, 1972). Unlike American families in which adult children, particularly married ones, rarely live with their older parents, traditional Taiwanese families place a strong emphasis on parent-son coresidence as an important form of fulfilling filial obligation (Weinstein et al., 1990). Older parents who have more than one son often rotate among their sons' residences. In contrast, married daughters are expected to live with their parents-in-law. A second characteristic of Taiwanese society that has implications for differences in the support provided by

sons and daughters relates to gender differences in human capital and economic resources. Unlike American families that typically have no more than a few children, prior to the past few decades Taiwanese couples generally had large families. In view of budget constraints involved in raising many children, and because of gender differences in expectations regarding returns from sons and daughters, Greenhalgh (1985) has argued that Taiwanese parents generally invested more in their sons' than in their daughters' education. The differences in literacy and education level result in gender differences in economic resources and skills later in life that are likely to affect the level and type of support that sons and daughters are able to provide to their older parents.

In this study, we examine the patterns and determinants of four types of support provided by adult children: assistance with essential activities of daily living (ADLs), household chores, finances, and material goods. To provide insight into which children contribute to parental support, our work uses the adult child as the fundamental unit of analysis but also incorporates parental characteristics—such as their age, marital status, and health status—that have been shown to affect support (Hermalin et al., 1992; Lee et al., 1994; Silverstein, Parrott, & Bengtson, 1995; Spitze & Logan, 1990; Stoller, 1983).

THEORY AND PREVIOUS RESEARCH

Researchers have proposed a number of explanations for how adult children fulfill their obligations to their parents; however, much of the existing research has been conducted in Western societies. Few systematic attempts have been made to examine the division of labor in Asian families. In this paper, we use results from statistical models of the provision of support by children in Taiwan to examine five proposed theoretical explanations for the allocation of responsibilities. In the following section, we summarize each of the five explanations and compare earlier findings in American and Taiwanese families.

Hierarchical Compensation

The *hierarchical compensation* explanation proposes that family members make themselves available for help in serial order: If one individual is not available to help, another will step in (Cantor, 1975; Johnson, 1983; Shanas, 1979). In the

United States, the preferred provider of support is the spouse. When a spouse is not available, daughters are usually preferred over sons (Wolf & Soldo, 1988), and when no daughter is available, sons are likely to substitute and provide assistance to their parents (Horowitz, 1985; Wolf, Freedman, & Soldo, 1997; but see Spitz & Logan, 1990). American daughters spend more hours per month helping their parents than sons do (e.g., Matthews & Rosner, 1988; Stoller, 1983; Wolf et al., 1997), and married daughters are more likely than married sons to live with unmarried, older mothers (Wolf & Soldo, 1988).

Historically in Taiwan, sons have borne the major responsibility for regular care and support of parents. Even today, Taiwanese sons provide more instrumental assistance and financial support to parents than daughters do (Hermalin et al., 1992). Parents are more likely to live with their married sons than with their married daughters (Chang, 1999; Ofstedal et al., 1999; Sun & Liu, 1994; Weinstein et al., 1990), and have more frequent contact with sons (Hermalin, Ofstedal, & Chi, 1992). When a parent has more than one son and has not yet divided family property, the eldest son typically takes the major responsibility of caring for his aging parents (Sung, 1981; Wolf, 1968). Daughters are likely to fill the sons' roles when sons are not available (Hermalin et al., 1992; Lee et al., 1994).

Gender Ideology

Gender ideology argues that family labor is divided on the basis of gender-based expectations that are internalized by individuals through socialization (Ross, 1987). Because men are socialized to the role of provider and women to the role of caregiver, sons are frequently involved in financial support, whereas daughters often assist with household chores or personal care. This conjecture is supported by findings in the United States but not by earlier research in Taiwan. American daughters spend more time on instrumental activities of daily living (IADLs), such as transportation, parental care, and meal preparation, than sons (Horowitz, 1985; Matthews & Rosner, 1988; Stoller, 1983), whereas sons are slightly more likely to deal with financial tasks than daughters (Montgomery & Kamo, 1989). In Taiwan, researchers find that sons are more important providers than daughters, regardless of the form of support (Hermalin et al., 1992). However, gender-specific division of filial tasks may exist between

married sons and their spouses, rather than between married sons and married daughters. In Taiwan, a daughter's responsibility to her own parents usually ends at marriage, at which time her responsibility is transferred to her husband's family (Greenhalgh, 1985).

Competing Commitments

The *competing commitments* explanation posits that demand attributable to multiple roles determines the time available for family assistance (Ross, 1987). On this basis, one would expect employed children and married children to provide less support than their counterparts. In the United States, this position is supported by comparisons of the amount of support provided by working and nonworking daughters (Lang & Brody, 1983; Matthews, Werkner, & Delaney, 1989). In addition, employment is a significant predictor of perceived caregiver burden for daughters but not sons (Montgomery & Kamo, 1989), and daughters are more likely than sons to perceive role conflicts (Finley, 1989). Married daughters spend less time than unmarried daughters in providing parental care (Lang & Brody), and married children—both sons and daughters—provide less help than never-married children (Stoller, 1983).

In Taiwan, counter to the *competing commitments* explanation, working children are more likely than nonworking children to provide assistance with ADLs, financial support, and material support (Hermalin et al., 1992). Moreover, married children are more apt to provide parental support than unmarried children.

Reciprocity

Reciprocity suggests that the extent to which adult children help their parents is based on the parents' past investment in them (Gouldner, 1960; Thibaut & Kelley, 1959): Children who received a greater investment, such as schooling or financial transfers from their parents, are more likely to provide parental support. In the United States, this conjecture is supported by the work of Cox and Rank (1992) who show that children who receive financial transfers are more likely than children who do not receive this assistance to have visits and telephone contact with parents and to provide parents help. In Taiwan, Hermalin, Ofstedal, and Lee (1992) find that children who received a junior or senior high school education are more likely than children with at most a primary school education

to provide financial and material support. Lee et al. (1994) show that sons are more likely to support their parents when the parents have already divided their property.

External resources

The *external resources* explanation proposes that the relative resources of family members, such as income and education, determine their power in negotiating the family division of labor (Ross, 1987). This explanation implies that siblings with greater financial resources may negotiate with less well-off siblings to exempt themselves from co-residing with parents or providing time-intensive services. Thus children with more resources may provide additional financial support but less assistance with daily activities. There is little evidence in either the United States (Finley, 1989) or in Taiwan (Lee et al., 1994) to support this explanation, but poor operationalization of this concept in previous studies may be the cause. Previous studies have examined children's *absolute* levels of education but overlooked the potential importance of *relative* levels in determining negotiations among family members.

In sum, the *hierarchical compensation* explanation predicts that in Taiwan sons are more likely than daughters to provide support to their older parents, but that daughters will substitute for sons when they have no brothers. *Gender ideology* suggests that sons are more likely than daughters to provide financial or material support, whereas daughters are more likely than sons to provide assistance with ADLs or IADLs. The *competing commitments* explanation implies that employed or married children are less likely to help than nonworking or unmarried children, regardless of children's gender. *Reciprocity* suggests that adult children with higher levels of schooling within a family and children whose parents have divided their property are more likely than their counterparts to provide support to their aging parents. The *external resources* explanation predicts that siblings with a higher relative level of education are likely to provide financial and material support, whereas siblings with a lower relative level of education are likely to provide assistance with ADLs or IADLs. Although both the *reciprocity* and *external resources* explanations concern adult children's educational attainment, the former predicts the amount of support, whereas the latter predicts the type of support.

METHOD

Data and Sample

Our data are drawn from the Survey of Health and Living Status of the Elderly in Taiwan (Taiwan Provincial Institute of Family Planning, 1989). Face-to-face interviews were conducted in 1989 with a national probability sample of 4,049 persons aged 60 and over. One older adult from each household was selected for interview (a proxy was used when the adult was too ill to be interviewed). The response rate for the survey was 92%. The data are richer than most other information on older adults in three respects. First, the full population is represented in the survey, including institutionalized persons. Second, the survey collects detailed information on all household members and on potentially important social ties, including an extensive set of questions on instrumental and financial exchanges in which the aging parent is the provider or recipient. Finally, the survey collects a wide range of detailed information about marital, residential, and occupational histories, household composition, social and economic exchanges, emotional and instrumental support and demands, and physical and mental health.

Although the data include detailed information about the relationships between the parent and each of the coresident and nonresident members of the family, the survey does not ask information about relationships among coresident and nonresident members. For instance, we may know that a parent has two married sons and two daughters-in-law living outside the household, but lack information that would allow us to identify which daughter-in-law is married to which son. Similarly, we are not able to identify the parent of a grandchild who is in the household. Because of this limitation, we exclude support provided from children-in-law and variables related to the presence of grandchildren from the analysis.

The sample for this analysis is selected randomly from the 1989 survey to comprise two thirds of the respondents (i.e., 2,713 parents). This procedure is part of a split-sample design for a larger project that examines the relationship between the social environment and health among older Taiwanese. The ultimate objective of this strategy is to use the two-thirds subsample to estimate models, as we do in this paper, and the remaining subsample to appraise the models in subsequent analyses. This type of cross-validation procedure provides protection against overfitting

TABLE 1. NUMBER AND GENDER COMPOSITION OF CHILDREN IN FAMILIES IN 1989

Families	Percentage	Percentage Distribution of Sons
No child	5.68	
1 child	6.27	
0 sons		45.29
1 son		54.71
2 children	9.07	
0 sons		14.63
1 son		59.35
2 sons		26.02
3 children	11.57	
0 sons		7.64
1 son		35.03
2 sons		47.45
3 sons		9.87
4 children	14.67	
0 sons		4.77
1 son		22.36
2 sons		38.94
≥ 3 sons		33.92
5 children	16.26	
0 sons		1.81
1 son		12.02
2 sons		33.33
≥ 3 sons		52.83
6 children	15.70	
0 sons		2.11
1 son		10.33
2 sons		25.35
≥ 3 sons		62.21
7 children	10.98	
0 sons		1.01
1 son		6.38
2 sons		18.46
≥ 3 sons		74.16
8 or more children	9.80	
0 sons		0.75
1 son		3.01
2 sons		14.29
≥ 3 sons		81.95
Total number of families		2713
Mean number of children per family		4.80

Note: Column totals in each panel may deviate slightly from 100% because of rounding errors.

models to the data (for the split sample design, see Berk, 1991; Mosteller & Tukey, 1977).

Measures

Family structure. Family structure is characterized as the number and gender composition of living

children in a family. As shown in Table 1, the average number of living children per family is 4.8, reflecting the high fertility in Taiwan prior to the 1960s. About two thirds of the parents have between two and six children. Not surprisingly, as family size gets larger, the likelihood of having at least one son present in the family increases.

Parents' characteristics. Table 2 shows the distributions of characteristics for 2,527 older parents. The total number of older parents is less than 2,713 because those with no children ($n = 154$) or only young children ($n = 32$) are excluded from the analysis. (Children aged 15 and younger are excluded from all parts of the analysis, because, in view of the 9 years of compulsory education provided by the Taiwanese government, most will be attending school and are unlikely to be providing support to their parents.) About two thirds of the respondents are in their 60s in 1989, with women being slightly older than men. Most respondents, especially women, are illiterate or received only a primary school education.

The population in Taiwan consists of four ethnic groups: Aborigines, Fukienese, Hakka, and Mainlanders. Aborigines are the earliest migrants to Taiwan, followed by Fukienese (originating from the Fukien Province in China), Hakka (originating from the Kwangtung Province in China), and then Mainlanders (mainly the Nationalist party army and its supporters who left Mainland China during the 1949 Civil War). Fukienese constitute the major ethnic group in our sample. Mainlanders are disproportionately men because most Mainlanders migrating to Taiwan were soldiers. Hakka share a more similar culture with Fukienese than the Mainlanders.

More than 60% of the parents in the sample are married. For this generation, marriage rarely ends in divorce. Most of the respondents report excellent, very good, or good health, although women are more likely than men to say their health is fair or poor. On average, the parents in the sample report less than one functional limitation. Men are more likely than women to be economically independent: That is, they are more likely to own their residence, retain some property, work, and have an income. Over one third of all parents live in urban areas.

Adult children's characteristics. Children's characteristics are presented in Table 3. The information is based on the parent's report. Given that most parents have more than one child, the total

TABLE 2. PARENTS' CHARACTERISTICS IN 1989^a

Characteristics	Percentage ^b /Mean		
	Total	Men	Women
Age (years)			
60–69	64.23	68.10	59.47
70–79	28.93	26.01	32.51
≥80	6.85	5.89	8.02
Education			
No formal education (illiterate or can read)	50.77	32.26	73.48
Primary school	29.92	38.65	19.21
Junior high school	7.95	11.64	3.44
Senior high school	5.66	8.12	2.64
College or higher	5.18	8.76	0.79
Missing	0.51	0.57	0.44
Ethnicity			
Fukienese	63.51	57.04	71.45
Mainlander	18.16	26.08	8.46
Hakka	15.12	14.15	16.30
Other ethnicity (Aboriginal, foreign)	1.82	1.65	2.03
Missing	1.39	1.08	1.76
Marital status ^c			
Has a coresident spouse	64.46	78.09	47.75
Has a non-coresident spouse	2.30	2.66	1.85
Separated or divorced	2.49	3.66	1.06
Widowed	30.31	15.01	49.07
Never married	0.44	0.57	0.26
Health status			
Reports excellent or very good health	37.51	44.68	28.72
Reports good health	37.00	36.57	37.53
Reports fair or poor health	21.53	14.87	29.69
Missing	3.96	3.88	4.05
Difficulties with activities			
Mean number of functional limitations (bathing, climbing stairs, walking, crouching, reaching up over head, grasping)	0.47	0.36	0.60
Residence ownership ^c			
Owns current residence	53.15	62.79	41.32
Does not own current residence	46.85	37.21	58.68
Property division			
Has divided all or partial property	25.92	21.48	31.37
Has not divided property	43.89	52.30	33.57
Has no property	29.60	25.72	34.36
Missing	0.59	0.50	0.70
Working status ^c			
Working	26.83	40.01	10.66
Not working	73.17	59.99	89.34
Monthly income (NT\$) ^d			
≤5,000	29.48	20.69	40.26
5,000–9,999	20.42	20.76	20.00
10,000–19,999	26.75	30.03	22.73
>19,999	18.72	24.86	11.19
Missing	4.63	3.66	5.81
Area of residence			
Rural	34.59	34.12	35.15
City	28.53	28.66	28.37
Urban	36.88	37.21	36.48
Number of cases (%)	2,527 (100)	1,392 (55)	1,135 (45)

^aIn total, 186 parents (or families) are excluded from the analysis. Among these families, 154 have no children, 14 have only one child and the child is under age 16 years in 1989, and 18 have more than one child and all children are under age 16. ^bColumn totals in each panel may deviate slightly from 100% because of rounding errors. ^cBecause the total number of missing cases is less than 10, missing values have been replaced by the modal value of the given variable according to the respondent's gender. ^dNT\$ indicates New Taiwanese dollars. In 1989, one U.S. dollar was equal to 26.17 NT\$.

TABLE 3. CHILDREN'S CHARACTERISTICS IN 1989

Characteristics	Percentage ^a		
	Total	Men	Women
Type of support provided to parent			
Any help	51.26	66.62	35.79
Help with ADLs ^b	0.80	1.06	0.53
Help with IADLs ^c	4.09	5.45	2.71
Financial help (financial support)	43.27	62.98	23.41
Food, clothing, and other goods (material support)	20.47	18.90	22.04
Age (years)			
≤20	1.92	1.98	1.86
21–30	17.04	17.18	16.89
31–40	43.07	43.51	42.63
41–50	26.18	26.44	25.92
≥51	10.45	10.14	10.76
Missing	1.34	0.75	1.93
Eldest child			
Is eldest child	19.64	19.67	19.60
Is not eldest child	80.36	80.33	80.40
Number of brothers			
0	7.75	8.81	6.68
1 or 2	50.33	50.38	50.27
≥3	41.92	40.80	43.05
Number of sisters			
0	9.12	8.55	9.70
1 or 2	47.11	48.81	45.39
≥3	43.77	42.64	44.91
Level of education			
No formal education (illiterate or can read)	7.72	3.08	12.39
Primary school	37.81	34.12	41.53
Junior high school	15.19	17.46	12.90
Senior high school	22.56	24.70	20.41
College or higher	16.19	20.10	12.26
Missing	0.53	0.54	0.51
Relative education			
Highest	27.99	36.74	19.17
Middle	18.23	19.82	16.63
Lowest	36.68	25.88	47.55
Same or only child	15.77	16.15	15.38
At least one child's education in the family is unknown	1.34	1.41	1.27
Employment status			
Full-time employed	67.02	89.43	44.45
Part-time employed	3.53	2.46	4.60
Not working	28.77	7.47	50.22
Missing	0.68	0.64	0.73
Marital status			
Married	81.37	77.74	85.02
Formerly married (separated, divorced or widowed)	1.88	1.64	2.13
Never married	16.29	20.34	12.21
Missing	0.46	0.28	0.64
Living arrangement			
Coresides with the parent	24.79	38.36	11.12
Lives in the same city or town	28.02	24.95	31.12
Lives in a different city or town	43.43	33.50	53.44
Lives overseas	3.15	2.78	3.51
Missing	0.61	0.41	0.81
Number of cases (%)	12,166 (100%)	6,105 (50%)	6,061 (50%)

^aExcept for the first panel, column totals in each panel may deviate slightly from 100% because of rounding errors.

^bADLs (activities of daily living) include bathing, dressing, and maintaining toilet functions. ^cIADLs (instrumental activities of daily living) include shopping, meal preparation, transportation, and managing finances.

number of children in this table ($N = 12,166$) is much larger than the number of parents in Table 2 ($N = 2,527$). A small number of adopted children and stepchildren ($n = 41$) are included in the analysis. Most of the children were in their 30s or 40s in 1989. More than 90% of the children have at least one sibling.

Children's educational attainment is measured in two ways: the absolute level of education received and the relative ranking in a family. Children's educational attainment is substantially higher than their parents'—only 3% of the sons and 12% of the daughters received no formal education, and 45% of the sons and 33% of the daughters attended senior high school or college. Although the level of education increases substantially between generations, daughters remain less educated than sons, and sons are twice as likely as daughters to be the most educated child in the family. More than 90% of the sons are employed full-time or part-time, but only half of the daughters are employed. Approximately three quarters of the children are married. Finally, the proportion of sons who live with their parents is more than three times the number for daughters, reflecting the norm for coresidence with sons in Taiwan. Although daughters are less likely than sons to live with their parents, nonresident daughters are more likely than nonresident sons to live in the same city or town as their older parents.

Four types of support. We examine four types of support that children provide to their older parents: (a) help with bathing, dressing, or maintaining toilet functions (i.e., ADLs); (b) assistance with household chores, such as shopping, meal preparation, transportation, or managing finances (i.e., IADLs); (c) provision of financial support; and (d) provision of material support, such as food, clothing, or other goods. In the survey, parents were asked if they received help at the time of the interview from each coresident and nonresident member of the household for each of these types of support. The percentage distributions in the first panel of Table 3 show that about half of the children provide at least one type of support.

Analytical Strategy

We use multivariate models to examine the effects of children's characteristics, family structure, and the needs and resources of parents on the provision of each of four types of support. We focus on the first two sets of variables because they form

the basis of the five theoretical propositions described earlier. We examine the consistency between the resulting estimates and the predictions of each explanation, rather than carry out formal hypothesis tests, for two reasons. First, given that these explanations are not mutually exclusive, it is likely that our results will be at least partly consistent with more than one explanation. Second, children's decisions about providing support to their parents have been shown to depend on their previous history of support provision as well as on current and previous assistance provided by their siblings (Checkovich & Stern 2002). We lack information that would permit us to adequately model the interdependence in the formal analysis.

We use the child as the unit of analysis, including coresident and nonresident children. A statistical concern arising from the inclusion of all children is that observations from the same family tend to be correlated, thereby violating the classical assumption of independence among observations. Statistical methods that ignore the nested structure of the data generally underestimate the variance of the estimated coefficients. To address this problem, we use Huber-White estimators (Johnston & DiNardo, 1997) in the statistical package STATA (StataCorp, 1999) to provide robust standard errors of the coefficients in the presence of clustering.

Another statistical problem concerns the potential endogeneity of some of the correlates of support provision, such as breadwinner status and living arrangements. For example, although living arrangements are likely to be highly correlated with support provision, some of the same unmeasured variables that determine whether children coreside with their parents (e.g., the quality of the relationship between children and parents) are also likely to determine whether they provide support. To avoid the biases introduced by incorporation of endogenous variables, we exclude these variables from the statistical models.

Because Taiwanese society is highly stratified by gender (and was even more so at the time when the children in the sample were growing up), we expect that the associations between children's characteristics and the likelihood that they provide support differ by their gender. Thus we include interaction terms between each of the explanatory variables and the child's gender. However, rather than present the coefficients for the interaction terms, we calculate separate coefficients for sons and daughters in order to simplify the presentation.

TABLE 4. DISTRIBUTION OF SHARED RESPONSIBILITY FOR PROVIDING SUPPORT TO OLDER PARENTS IN 1989

	Any Help	ADLs ^a	IADLs ^b	Financial Support	Material Support
Only one adult child in family (171 families)					
% who received help from a child	39.18	4.09	11.70	32.16	18.71
More than one adult child in family (2,356 families)					
% who receive help from a child	79.84	2.59	13.84	74.70	37.14
% only one child helps	19.94	72.13	71.47	23.92	32.46
% more than one child but fewer than half of the children help	23.02	19.67	17.48	27.44	23.89
% more than half of the children help	25.94	6.56	7.98	27.10	22.97
% of all children help	31.10	1.64	3.07	21.53	20.69
% total	100.00	100.00	100.00	99.99 ^c	100.01 ^c
All families	77.09	2.69	13.69	71.82	35.89

^aADLs (activities of daily living) include bathing, dressing, and maintaining toilet functions. ^bIADLs (instrumental activities of daily living) include shopping, meal preparation, transportation, and managing finances. ^cColumn totals deviate slightly from 100% because of rounding errors.

RESULTS

Adult Children's Participation in Support

Table 4 describes how responsibility for supporting parents is shared among children in a family. The two most frequent forms of help that parents receive from their children are monetary and material support. Among families with only one child, about 39% of the parents receive some form of help from that child, but among larger families, nearly double that percentage receive help. The sharing of filial responsibility varies by the type of support: For ADLs and IADLs, one child typically provides the help, but for financial or material support, the responsibility is likely to be shared among siblings.

Factors Predicting the Likelihood That an Adult Child Provides Support

Table 5 presents the results from a series of logistic regression models of the determinants of children's provision of parental support. Separate models are estimated for each type of support. Each model includes all children above age 15 (excluding children-in-law) of the 2,527 parents. The numbers in the cells are odds ratios (OR); for categorical variables, they have been calculated relative to an odds ratio of unity for the omitted category. Several variables have been dropped from two of the regression equations (ADLs and IADLs) because none of the children with these characteristics provided the relevant form of support.

Three types of statistical tests are shown along-

side the coefficients: (a) two-tailed *t* tests associated with individual regression coefficients; (b) two-tailed *t* tests associated with the difference between a given coefficient for sons and the corresponding coefficient for daughters; and (c) χ^2 tests associated with an entire set of categorical variables (for those consisting of at least two categories in addition to the omitted one).

Adult Children's Characteristics and Family Structure

The estimates in Table 5 provide mixed support for each of the five proposed explanations of support provision. Contrary to predictions related to *hierarchical compensation*, the oldest child is not more likely to provide help than younger siblings (shown in the panel *Birth Order*). This result may be partly the consequence of frequent rotations of residence among Taiwanese children so that the oldest children do not always live with their parents and, when they do, other siblings may be present in the household (Weinstein, Sun, Chang, & Freedman, 1994). In further negation of this explanation, the results indicate that, except for assistance with ADLs (OR = 0.66 for sons and 2.06 for daughters), birth order is equally important for sons and daughters. However, the results regarding the gender composition of siblings do support this explanation. In particular, the existence of brothers does not seem to affect the likelihood that a son provides support, but a daughter is much more likely to provide certain types of help in the absence of a brother (shown in the panel *Number of Brothers*). Specifically, the odds that a daughter

TABLE 5. ESTIMATED ODDS RATIOS FROM LOGISTIC MODELS OF THE LIKELIHOOD THAT A CHILD PROVIDES SUPPORT TO AN OLDER PARENT, BY TYPE OF SUPPORT^a

Explanatory Variables	Any Help		ADLs ^b		IADLs ^d		Financial Support		Material Support	
	Sons	Daughters	Sons	Daughters	Sons	Daughters	Sons	Daughters	Sons	Daughters
Child characteristics										
Age										
>20 ^c	0.53*	0.46*	7.35	e	1.34	1.15	0.48*	0.40*	0.63	0.32*
≤20										
Birth order										
<i>Second- or later-born</i>										
Elderst	1.01	0.96	0.66	2.06†	0.95	1.16	0.97	0.94	0.97	1.01
Number of brothers χ^2 (df = 2)	1.61	22.73‡	3.51	5.05	4.95	21.95‡	1.47	31.15‡	2.33	5.49
≥3										
0	1.26	2.73*	3.67	10.72	2.45	9.84**†	1.18	4.86**†	1.53	1.52
1 to 2	0.93	1.48**†	0.58	0.53	1.43	1.73**	0.91	1.44**†	1.16	1.30*
Number of sisters χ^2 (df = 2)	1.62	0.63	6.00‡	4.09	0.80	10.17‡	1.76	0.73	0.65	1.09
≥3										
0	1.21	1.09	0.13*	1.61†	0.79	2.45*	1.26	1.14	1.17	0.93
1 to 2	0.96	1.00	0.48	0.51	0.87	1.29	1.00	1.05	0.98	0.88
Relative education χ^2 (df = 3)	21.54‡	0.58	3.99	0.85	4.95	0.30	25.18‡	7.09	2.03	0.10
<i>Lowest</i>										
Highest	1.45*	1.03†	0.97	1.51	1.07	0.88	1.52*	1.19	1.12	0.99
Middle	1.10	0.94	2.07	1.01	0.73	0.94	1.23	0.89†	1.01	1.00
Same or only child	1.14	0.99	2.08	1.99	0.74	0.91	1.16	1.27	1.14	1.05
Interactions χ^2 (df = 3)	9.82‡	9.68‡	0.64	0.16	0.95	0.83	10.25‡	18.80‡	0.04	13.30‡
No brother * Highest education	0.97	1.02	0.37	0.67	0.92	0.75	0.99	0.91	0.96	0.95
No brother * Middle education	2.02	8.15*	e	e	0.68	1.00	2.45	9.80**	1.02	4.77**†
No brother * Same education or only child	0.53	0.60	0.79	0.54	1.33	0.60	0.57	0.29*	1.01	0.71
Employment status χ^2 (df = 2)	159.55‡	25.04‡	1.70	12.11‡	4.43	8.42‡	149.04‡	30.16‡	9.84‡	6.94‡
<i>Not working</i>										
Full-time employed	5.67*	1.42*†	2.26	3.41*	1.16	1.11	5.98*	1.56*†	1.82*	1.25*
Part-time employed	4.93*	1.75*†	3.96	7.50*	2.19	2.92*	4.54*	2.01*†	2.08*	1.35
Marital status χ^2 (df = 2)	6.23‡	14.11‡	5.98	21.74‡	5.28	57.81‡	6.44‡	36.11‡	19.43‡	16.57‡
<i>Married</i>										
Formerly married	0.82	1.01	3.01	6.65*	1.10	3.87**†	0.91	1.20	0.62	0.58*
Never married	0.80*	1.53*†	2.97*	14.86**†	0.62*	6.26**†	0.80*	2.08**†	0.59*	0.57*
Parent characteristics										
Gender										
<i>Female</i>										
Male	1.00	0.91	2.29*	0.78	1.32	1.03	1.00	0.90	0.95	0.89

TABLE 5. CONTINUED

Explanatory Variables	Any Help		ADLs ^c		IADLs ^d		Financial Support		Material Support	
	Sons	Daughters	Sons	Daughters	Sons	Daughters	Sons	Daughters	Sons	Daughters
Age χ^2 ($df = 2$)	2.26	0.90	5.09	4.92	4.44	1.60	2.76	4.51	5.94	0.59
60-69										
70-79	1.16	1.06	2.70*	3.49	0.76	1.34	1.17	1.03	1.33*	1.09
≥ 80	1.23	0.89	2.69	1.19	1.27	1.17	0.91	0.62	1.42	1.15
Education χ^2 ($df = 2$)	8.70†	3.58	2.30	5.97	5.06	0.11	12.58†	1.90	0.36	3.68
No formal education										
Primary or junior high school	0.84	1.14†	0.66	0.60	0.68*	1.08	0.78*	1.07†	1.08	1.28
Senior high school or college	0.58*	0.82	0.27	14.71*†	0.52	1.04	0.53*	0.80	1.12	1.23
Ethnicity χ^2 ($df = 2$)	14.21†	9.41†			3.96	14.77†	11.48†	9.43†	4.58	10.38†
Fukienese or Hakka										
Mainlander	0.57*	0.83†	1.81	0.61	0.51	0.40*	0.60*	0.88	0.62*	0.58*
Other	0.86	2.47*†	^e	^e	0.69	3.31*†	1.00	3.12*†	1.06	1.93
Marital status										
No spouse or spouse not present										
Spouse present	0.98	0.76*	0.51	0.26*	0.64*	0.43*	1.06	0.66*†	0.99	0.87
Health status χ^2 ($df = 2$)	1.41	4.24		4.39	1.82	9.22†	1.13	4.77	4.04	5.17
Excellent or very good										
Good	1.04	1.24	^f	3.63	0.96	0.55*	1.08	1.21	1.24	1.33*
Fair or poor	0.90	1.23	^f	10.92	1.26	1.19	0.96	1.38*	0.97	1.31
Difficulties with activities										
Number of ADLs	0.97	0.99	2.46*	1.72*	1.04	1.14	0.94	1.05	1.01	0.94
Residence ownership										
Does not own current residence										
Owens current residence	0.86	0.79	1.51	0.97	0.86	0.92	0.91	0.94	0.90	0.70*
Property division χ^2 ($df = 2$)	5.09	0.30	9.47†	1.74	3.52	7.24†	3.80	2.65	24.91†	5.67
Has not divided property										
Has divided property	1.08	1.02	4.00*	0.49†	1.55	1.07	1.06	0.94	1.37*	1.07
No property to divide	0.82	0.95	1.08	0.56	1.39	0.54†	0.84	1.18	0.68*	0.75
Working status										
Not working										
Working	0.41*	0.59*†	0.66	0.60	0.70	0.82	0.40*	0.54*	0.71*	0.77
Monthly income χ^2 ($df = 3$)	13.75†	2.76	16.76†	3.03	3.78	3.63	16.43†	3.64	4.91	0.86
>NT\$19,999*										
<NT\$5,000	1.38*	0.91†	2.24	6.25	1.30	1.47	1.41*	0.91†	1.54*	1.18
NT\$5,000-NT\$9,999	1.73*	0.87†	0.07*	5.57†	0.85	0.83	1.85*	0.85†	1.31	1.16
NT\$10,000-NT\$19,999	1.55*	1.09†	1.11	2.04	1.05	1.05	1.56*	1.13	1.18	1.17

TABLE 5. CONTINUED

Explanatory Variables	Any Help		ADLs ^c		IADLs ^d		Financial Support		Material Support	
	Sons	Daughters	Sons	Daughters	Sons	Daughters	Sons	Daughters	Sons	Daughters
Area of residence χ^2 (<i>df</i> = 2)	11.37‡	36.15‡	4.62	6.07‡	2.94	6.35‡	12.69‡	13.75‡	14.73‡	41.34‡
Rural										
City	0.67*	0.76*	3.18	1.40	0.83	1.79**†	0.67*	0.79	0.62*	0.57*
Urban	0.87	0.52**†	2.95*	3.21*	0.71	1.72**†	0.95	0.64**†	0.66*	0.45**†
<i>N</i>	12,166	12,166	12,166	12,166	12,166	12,166	12,166	12,166	12,166	12,166
Log likelihood	-7,067.55	-271.26			-1,756.72		-6,490.87			-5,728.56

Note: The omitted category for each variable is shown in **bold italics**.

^aA series of dummy variables indicating missing information on child's age, employment status, and marital status, and parent's education, ethnicity, health status, monthly income, and property division are included in the model. ^bWe examined different cutoff points for children's age and found that children who are age 20 or younger are significantly different from older children in their support behavior, but among children who are older than 20, there is little variation by age. ^cADLs (activities of daily living) include bathing, dressing, and maintaining toilet functions. ^dIADLs (instrumental activities of daily living) include shopping, meal preparation, transportation, and managing finances. ^eThe variable is dropped from the regression because none of the adult children in the category provide help to their parents. ^fThe whole set of variables is dropped because none of the children in the reference group provide help to their parents. ^gNT\$ indicates New Taiwanese dollars. In 1989, one U.S. dollar was equal to 26.17 NT\$. ^h*p* < .05 based on two-tailed *t* tests. ⁱ*p* < .05 based on two-tailed *t* tests for the gender difference between the coefficients. ^j*p* < .05 based on χ^2 tests for the entire variable when there is more than one category.

without a brother provides parents help with IADLs and financial support are about 10 times (OR = 9.84) and five times (OR = 4.86), respectively, the corresponding odds for a daughter with three or more brothers (i.e., the reference category). This result is consistent with the finding of Lee et al. (1994) that sons are usually the preferred providers and that sisters substitute when no brother is available. Not surprisingly, the existence of sisters does not affect the likelihood that a son provides support (shown in the panel *Number of Sisters*). However, a daughter without a sister is much more likely to assist parents with IADLs than a daughter with three or more sisters (OR = 2.45), presumably because of a sharing of responsibilities among daughters.

We observe only weak support for the *competing commitment* explanation. The results show that working children are not less likely than non-working children to provide parental support (shown in the panel *Employment Status*). Contrary to the expectation that unmarried children would be especially likely to provide assistance, we find that never-married sons are less likely than their married counterparts to provide help with IADLs, financial support, and material assistance (OR = 0.62, 0.80, and 0.59, respectively). However, consistent with this explanation, never-married daughters are more apt to provide parents help with ADLs, IADLs, and financial support than married daughters (OR = 14.86, 6.26, and 2.08, respectively), and formerly married daughters are more likely than married daughters to provide help with ADLs and IADLs (OR = 6.65 and 3.87, respectively).

Because of large gender differentials in educational attainment and the importance of brothers for whether daughters provide parental support, we evaluate the *external resources* explanation by including a three-way interaction among children's education, gender, and the presence of a brother (shown in the panel *Interactions*). To facilitate interpretation of this higher order interaction term, we compute odds ratios for each combination of the relevant variables, as shown in Table 6. Contrary to the supposition, the interaction effects suggest that children with the most schooling are not more likely than the least educated siblings to provide financial support, and children with the least education are not more likely than the most educated siblings to provide help with ADLs and IADLs. The pattern remains the same regardless of the presence of a brother.

The estimates in Tables 5 and 6 provide only

TABLE 6. ESTIMATED ODDS RATIOS FOR THE INTERACTION TERMS INCLUDED IN THE LOGISTIC MODELS IN TABLE 5

	Any Help	ADLs ^a	IADLs ^b	Financial Support	Material Support
Daughters					
No brother, highest education	2.87	10.85	6.49	5.26	1.43
No brother, middle education	20.91*	^c	9.25	42.39*	7.25
No brother, lowest education	2.73	10.72	9.84	4.86	1.52
No brother, same education or only child	1.62	11.52	5.37	1.79*	1.13
≥1 brother, highest education	2.55	2.31	2.40	2.90	2.28
≥1 brother, middle education	2.33	1.55	2.57	2.17	2.30
≥1 brother, lowest education	2.48	1.53	2.73	2.44	2.30
≥1 brother, same education or only child	2.46	3.04	2.48	3.10	2.42
Sons					
No brother, highest education	1.77	1.32	2.41	1.78	1.65
No brother, middle education	2.80	^c	1.22	3.56	1.58
No brother, lowest education	1.26	3.67	2.45	1.18	1.53
No brother, same education or only child	0.76	6.03	2.41	0.78	1.76
≥1 brother, highest education	2.80	1.53	2.60	2.90	2.42
≥1 brother, middle education	2.12	3.27	1.77	2.35	2.18
≥1 brother, lowest education	1.93	1.58	2.43	1.91	2.16
≥1 brother, same education or only child	2.20	3.29	1.80	2.22	2.46

Note: Calculations are based on the models shown in Table 5.

^aADLs (activities of daily living) include bathing, dressing, and maintaining toilet functions. ^bIADLs (instrumental activities of daily living) include shopping, meal preparation, transportation, and managing finances. ^cThe interaction is not estimated because none of the adult children in the category (*no brother, middle education*) provide ADL help to their parents.

*Indicates that the interaction term is significant relative to *no brother, lowest education* for the same gender at $p < .05$.

weak support for the *reciprocity* explanation. Children with higher education are *not* more likely to provide support than those with lower education, except that sons receiving the highest education in a family are more likely to provide parents financial support than their siblings with lowest education (OR = 1.52, shown in the panel *Relative Education*). Sons are more likely to provide ADL support and material support to parents who have already divided their property than to parents who have not done so, but property division does not have a significant effect on daughters' provision of support (shown in the panel *Property Division*).

Data for evaluating the one remaining proposition—*gender ideology*—come from the top panel of Table 3. The frequencies of type of support by the gender of the child are only partly consistent with the anticipated gendered division of support provision. Overall, sons are almost twice as likely to provide help as daughters. However, although sons are much more likely than daughters to provide financial support and slightly more likely to provide help with IADLs, they are about as likely as daughters to provide assistance with ADLs and material support.

Parents' Resources and Needs

In Table 5, the estimates also provide some insights into how parental characteristics and needs affect children's provision of support. Demographic characteristics of parents are important determinants of support provision by sons and daughters. Sons are more likely to provide ADL support to their fathers than to their mothers (OR = 2.29), but the parent's gender is unrelated to the likelihood that daughters provide parental care. Sons are more apt to provide help with ADLs and material support to older as compared with younger parents (shown in the panel *Age*) and to give financial support to parents without any formal education as compared with more educated parents (shown in the panel *Education*). The estimates for ethnicity indicate that sons of Mainlanders are less likely than sons of Fukienese or Hakka to provide monetary or material support, and daughters of Mainlanders are less likely than their counterparts to provide help with IADLs and material support (shown in the panel *Ethnicity*). In contrast, daughters of Aborigines or foreign-born parents are more likely to provide help with IADLs and financial support as compared with

daughters whose parents are of other ethnic origins.

Parental need is another determining factor regarding support provision by children. Daughters are less likely to assist with ADL or IADL activities and to give financial support to parents who live with a spouse in contrast to parents without a spouse present (shown in the panel *Marital Status*). Daughters are less likely to provide help with IADLs but more likely to provide material support to parents in better health (shown in the panel *Health Status*). Not surprisingly, children are more apt to assist with ADL activities when parents have greater functional difficulty (shown in the panel *Difficulties With Activities*). Children are also more likely to provide financial support to parents who are not working (shown in the panel *Working Status*) and parents with low incomes (shown in the panel *Monthly Income*) compared with their counterparts. Finally, children are more likely to provide financial and material support to parents living in rural as compared with urban areas, but children are less likely to provide help with ADLs and IADLs for rural parents.

Inclusion of Help Provided by the Spouse of a Married Child

Although it would be informative to examine the extent to which the spouses of children provide assistance to their parents-in-law, we are unable to identify spouses in these data. However, we can obtain some notion of the potential sensitivity of our estimates to the inclusion of information from spouses by examining families with only one married son and one daughter-in-law and families with only one married daughter and one son-in-law. (These families may have unmarried siblings in the same household.) It seems plausible that, for the vast majority of such families, the married child and the child-in-law form a married couple. Of these families with one married child and one child-in-law (data not shown), 92% of the older parents report receiving any help from a married son or a daughter-in-law compared with 80% of the respondents reporting receipt of any support from only a married son. The biggest difference pertains to support for IADLs: About 70% of the parents receive support with IADLs from the son or daughter-in-law as opposed to only 13% of the parents receiving this support from the married son alone. The effects on the estimates of in-

cluding help from a son-in-law are much smaller (data not shown). The results suggest that the division of familial tasks may be gender-specific, with married sons mainly responsible for financial support and their spouses for assistance with IADLs.

DISCUSSION

This paper examines the patterns of four types of support provided by adult children in Taiwan and identifies the factors that are most important in determining children's provision of support to their older parents. Although most explanations about intergenerational transfers have been evaluated in the United States, Taiwan is an interesting setting for this research because it differs from the United States in several important ways. First, the average number of children per family among older parents is much larger in Taiwan. Second, coresidence is an important form of fulfilling filial responsibility in Taiwan but not in the United States where adult children rarely live with their older parents. Finally, whereas daughters are major caregivers in the United States, sons assume the major responsibility for taking care of their parents in Taiwan.

We examine five explanations about how the characteristics of adult children and their parents may affect the provision of parental support. In view of the fact that these explanations are not mutually exclusive and that we are modeling the support behavior of a specific adult without full information on patterns of support across siblings and over time, it is perhaps not surprising that we fail to obtain strong support for any particular explanation. Rather, we find partial support for the notion of *hierarchical compensation*—sons generally carry the major responsibility for taking care of their older parents, and daughters fulfill the son's roles when sons are not available—and relatively little support for the remaining propositions.

This result is not altogether unexpected in view of the patriarchal nature of Taiwanese society, in which sons bear the primary responsibility for continuation of the family line. As noted earlier, married sons in Taiwan are expected to live with and support their parents in old age, whereas daughters' formal obligations to their own parents generally terminate at marriage. These expectations are manifested in the estimates derived from the multivariate models of support provision: Married sons are more likely than unmarried sons

to provide support to their parents, but the reverse is true for daughters. Thus the culture in Taiwanese society generates a very different pattern of support provision from that found in Western societies where the rules of reciprocity and negotiation generally dominate social interaction.

Our study has several limitations. One shortcoming is that because of a lack of information and the potential complexity of the analysis, the statistical models do not account for current or previous support shared among siblings or multiple forms of support given at one time. An additional limitation is that information regarding children's provision of support is obtained from the parent. Parents may recall their interactions with some children better than those with other children. Another drawback is our inability to identify couples and hence spouses of the adult children. Our results based on a sample of families with only one married son and one daughter-in-law strongly suggest that married sons are typically responsible for different types of support than are their wives. Thus if we were able to identify couples we might find stronger support for a division of assistance based on *gender ideology*. A fourth limitation is our inability to identify grandchildren, a constraint that prevents us from viewing grandchildren as a competing responsibility that may reduce the flow of support from adult children to parents. An additional constraint is the absence of detailed information about children's employment, such as the flexibility of the work schedule, which would also permit us to explore the *competing commitment* explanation more fully. Finally, we have only one indirect measure of children's negotiation power; that is, their relative educational attainment. Additional measures, such as children's income and social networks, might provide a stronger test of the *external resources* explanation.

Nevertheless, this study provides two important insights for aging research in Taiwan. First, researchers need to be cautious about adopting theories developed in Western societies in understanding Asian ones. Second, research based on a single parent-child dyad cannot represent a comprehensive picture of intergenerational support. In particular, this approach is inappropriate for studying Asian families, which until very recently have been considerably larger than Western ones, and for analyzing types of support that typically involve multiple children.

The findings of this study affect both future research and the formulation of social policy in

Taiwan. Future research on intergenerational transfers needs to examine how siblings within a family organize themselves regarding the provision of support to older parents, paying attention to the substitutability and complementarity of support from sons and daughters. Findings from this study underscore the importance of including children's spouses, especially daughters-in-law, in the analysis and of distinguishing among different types of support.

The rapid demographic changes that have taken place in Taiwan over the past few decades, particularly declines in fertility and high rates of out-migration by younger generations, are increasing the likelihood that today's parents will live alone or have only one child present during their older years. In response to population aging and declines in coresidence, it is critical for the Taiwanese government to provide a stronger safety net for older adults. The recent experience of the social security system in Japan, however, suggests that a stronger safety net may place considerable financial pressure on the government (Ogawa & Retherford, 1997). Thus it behooves researchers and policy makers alike to evaluate the extent to which the private market and the government can substitute family networks in providing the requisite support for the older population in coming years.

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