

*THE RELATIONSHIP OF HOUSEHOLD CHARACTERISTICS AND THE HOME
REMODELING PROCESS*

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ABSTRACT

This study investigates the relationship between household characteristics and the home remodeling process. A sample of households, who had applied for building permits to enlarge or alter their homes, were contacted by a mail survey (70 percent response with usable questionnaires). The null hypothesis expects no difference between the households of differing characteristics in remodeling process behavior. Chi-square tests or one-way analyses of variance with Duncan's multiple range test are used to test for significant differences. Household characteristics having the strongest relationship to the home remodeling process include stage in the family life cycle, length of marriage, education, occupation, and hours of employment.

Factors in the home remodeling process include how the project is planned, the amount and type of do-it-yourself activity, the use of remodeled space, the goal of remodeling, and the cost. The results of this study can be applied to educational programs assisting families who plan to remodel.

INTRODUCTION

Characteristics of residents influence housing decisions (Galster and Hesser, 1981). Individuals evaluate their housing situation and make decisions within the context of their felt needs and aspirations for housing, the values they hold for housing and their household composition, status, and resources (Galster and Hesser, 1981; McCray, 1975). This study is undertaken to investigate the characteristics of households who have remodeled to explore the relationship of these characteristics to the remodeling process.

"Home remodeling" refers to renovations that are done for improvement and beautification to increase the quality of the home. Remodeling changes the arrangements, use, function, quality or aesthetics of the home. It may change how the occupants live, interact, and otherwise behave.

REVIEW OF LITERATURE

In their theory of family housing adjustment, Morris and Winter (1975, 1978) view families as evaluating housing in terms of both cultural and family norms. If the current dwelling does not meet the norms, a normative deficit exists, resulting in dissatisfaction. Families dissatisfied with their housing exhibit a propensity to

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engage in adjustment behavior. One of the adjustment behaviors identified by Morris and Winter is residential alteration. Seek (1983) describes home remodeling as a housing adjustment behavior undertaken to meet demands for more and/or better housing.

Characteristics of The Household

The stage in the family life cycle is a significant variable for a number of housing behaviors, including: a) types and amount of space needed (Foote, Abu-Lughod, Foley, and Winnick, 1969; Garner, 1983), b) amount spent on housing (Gove, Grimm, Motz, and Thompson, 1973), c) type of home improvements (Seek, 1983), d) number and cost of home improvements (Mendelsohn, 1977), and e) self-production of home improvements (Gove et al., 1973; Mendelsohn, 1977; Swartzlander, 1985). According to Morris and Winter (1978), in the early life-cycle stage, housing adjustments are more likely to overcome cultural normative deficits for space, tenure, structure and neighborhood. At later life-cycle stages, normative deficits are created by rising family norms. These family normative deficits are more likely overcome by altering or improving the existing dwelling.

A value is an internalized standard which affects choices made by an individual (Montgomery, Sutker, and Nygren, 1959). Certain dominant values affect housing choices (Montgomery et al., 1959; Stoeckeler and Hasegama, 1974).

Meeks and Firebaugh (1974) argue that housing values are related to two different value orientations: investment versus consumption. The primary purpose of a housing behavior to an individual with investment orientation is to maintain or increase the economic value of the home. The primary concern of an individual with consumption orientation is the services and satisfaction received from the home.

Social Status

Numerous factors determine a household's social status, especially education, occupational status and income. Households with similar social status have similar housing demands and housing behavior (Michelson, 1976; Seek, 1983; Tremblay and Dillman, 1983). Wasson (1969) states that education and occupation are more reliable measures of social class than is income. He maintains that income is an unreliable predictor of market behavior because it is affected by intervening variables. Income is also an unreliable predictor, according to Wasson, because it is very difficult to collect accurate information concerning it.

Education is a significant variable with respect to housing behavior (Shumaker and Stokols, 1982; Tremblay and Dillman, 1983). As education level increases, cultural norms for housing are internalized (Montgomery and McCabe, 1973; Tremblay and Dillman, 1983). Education is related to where people get ideas and information to plan home-improvement projects (Montgomery et al., 1955) and to self-production of home repairs (Swartzlander, 1985).

Occupation or occupational status is related to housing behavior (Fried, 1982; Meeks and Firebaugh, 1974). Interest in home improvement increases as the status level of the occupation increases (Meeks and Firebaugh, 1974). Households with higher status occupations are more likely to consult outside experts for planning information about their homes (Montgomery et al., 1959). Occupational status also affects the allocation of family resources. Households with higher status occupations spend a greater percentage of income on housing (Wasson, 1969).

The employment of both spouses is related to housing behavior. Dual-income households tend to do more home improvements (Garner, 1983; Seek, 1983), perhaps because of their greater affluence. There is also a relationship between the amount of available leisure time (non-work time) and the number of home-improvement activities (Meeks and Firebaugh, 1974) and do-it-yourself home improvements (Garner, 1983).

The Remodeling Process

Do-It-Yourself (DIY) describes an activity where members of the household provide all or part of the labor for a home-improvement project. The biggest factor in DIY appears to be the satisfaction in one's accomplishment rather than in economic savings. Part of the satisfaction of home ownership comes from the ability to control and change the environment (Shelton, Gruber and Godwin, 1983). Csikszentmihalyi and Rochberg-Halton (1981) find that individuals tend to include improvements they have made to the home as part of their description of that home. Work done on the home by the home owner increases the attachment to the home (Seek, 1983).

Seek (1983) suggests that most remodeling projects are undertaken to achieve housing aspirations, not expectations. Seek finds additions and alterations to the home are done to meet family demands (norms) for more and better housing as opposed to improve worn, deteriorating or defective features.

Harris (1976) finds a relationship between past residential adaptation behavior and a desire for future adaptations. She suggests a category of repeat "adapters"—people who remodel the home more frequently than changing housing needs would indicate. A possible explanation is that do-it-yourself remodeling activities tend to replace other leisure-time activities (Garner, 1983; Meeks and Firebaugh, 1974).

METHODS

A sample of households from a Midwestern Standard Metropolitan Statistical Area (SMSA) was used in this study. The sample defined for this study was owner-occupied, single-family households in the SMSA who applied for building permits during spring and fall, 1984, for projects of \$500 or more. Analyses included households who had completed 75 percent or more of their remodeling. A limitation of the study is that an unknown amount of remodeling does occur where the home owner does not apply for a building permit.

The survey was designed and the data collected according to the "Total Design Method" (Dillman, 1978). There were 194 out of 263 households responding (73.8 percent), with 183 usable questionnaires (69.6 percent of the sample).

The typical participant households were well-educated families in the expanding stages with two-to-four members. The households had two employed adults, typically in "white collar" occupations.

Typically, remodeling projects were to add storage, utility or living space. The average cost of the remodeling work was \$6000-\$8000. Most projects included several DIY jobs. Half of the households were assisted in their work by friends or relatives. Contractors and home-supply store personnel were the most common sources for planning assistance. Approximately half had remodeled a home before.

Two groups of variables were included in the study. The first group, "Characteristics of Household Members", were ten independent variables relating to the households. The second group, "Remodeling Process", were ten dependent variables relating to the remodeling projects (see Figure 1).

FINDINGS AND DISCUSSION

Summarized in Figure 2 are the characteristics that produce significant differences. The null hypothesis is rejected. Eight of the ten "Characteristics of Household Members" variables show significant associations with one or more of the "Remodeling Process" variables.

Family Life-Cycle Stage

The stage in the family life cycle significantly affects do-it-yourself (DIY) aspects of remodeling, planning the project and what is accomplished by remodeling (see Tables 1 and 2). Households at younger or beginning stages, whose homes tend to be below expectations do more DIY labor, more remodeling jobs, consult more planning sources, and depend more heavily on friends and relatives for planning help. They are also more effective in keeping actual costs in line with estimated costs. Older or elderly households do less DIY labor and consult fewer planning sources. Family life-cycle stage also effects the type of remodeling. Households at expanding or growing stages are more likely to remodel personal care (bathroom) space.

Household size affects the type and the cost of remodeling projects. As household size increases, the remodeling is more likely to include space for bathing and personal care and to be more expensive. In one-person households, 8 percent of the projects include bathrooms. In households with five or more persons, however, 42 percent of the remodeling projects include bathrooms ($\chi^2=13.19$; $df=5$; $p < .05$). Cost scores range from 5 (\$4000-\$5999) to 7 (\$8000-\$9999). Two-person households have a means cost score of 5.8 ($SD=2.6$) and the five-or-more person households have a mean score of 7.5 ($SD=2.4$). A Duncan's multiple-range test shows households with two persons or five-or-more persons to be significantly different from the other household groups ($F=2.55$; $df=4,152$; $p < .05$). Space needs may be related to the perception of adequate bathrooms (Galster and Hesser, 1981; Shelton et al., 1983). Bathrooms are expensive remodeling projects which may contribute to the higher cost of large household remodeling projects.

One-person households are more likely (77 percent) to remodel garages than are two-person households (49 percent) and households with five or more persons (45 percent) ($\chi^2=13.69$; $df=5$; $p < .05$). One possible reason for the disparity may be that one-person households may purchase smaller houses lacking adequate garage space.

Length of Marriage

Longer marriages, as older family life-cycle stages, are associated with less do-it-yourself (DIY) remodeling, fewer sources of planning information, and less dependence on relatives. In addition, such households have higher (above expectations) ratings of their homes before remodeling (see Table 3).

Households who have been married fewer years tend to do more DIY and use more planning sources (see Table 3). These households tend to see their homes as less than acceptable before remodeling, but anticipate more improvement in the

CHARACTERISTICS OF HOUSEHOLD MEMBERS

Family Life-Cycle Stage -- Four categories: Young (Adults under 30 years of age and/or youngest child under five years of age); Mature (Adults between 30 and 44 years of age and/or youngest child between five and 14 years of age); Older (Adults between 45 and 64 years of age and/or youngest child over 14 years of age); Elderly (Adults 65 years of age and older).

Total Household Size -- Number of people in household

Length of Marriage -- in years

Housing Values -- as identified by McCray (1975). Only the prestige value had enough variation for statistical analyses.

Value Orientations -- Consumption, investment and neutral orientations as identified by Meeks and Firebaugh (1974).

Education -- Highest level of education achieved by any household member. Only high school graduates or more were included (98.5 % of sample).

Number of Employed Adults -- Number of adults employed outside the home.

Occupation -- Standard occupational categories used in the 1980 Census (U.S. Bureau of the Census, 1984). Occupation of the adult working the most number of hours was used. Four groups were used for analyses: Professionals; administrative support; precision production, craft and repair; and technicians (60% of sample).

Hours of Employment -- Average of all hours worked for pay by adult household members.

REMODELING PROCESS

Percentage of "Do-It-Yourself" Labor -- Percent of project labor contributed by household members.

Type of "Do-It-Yourself" Labor -- Which activities in the remodeling-project were DIY and the extent they were done by members of the household

Non-household Labor -- "Do-It-Yourself" labor contributed by friends or family not part of the household.

Purpose of Remodeling Project -- Whether the remodeling was to add space, finish off space or change/adapt existing space in the home.

Use of Remodeled Space -- Activities that took place in remodeled space.

Goal of Remodeling Project -- To achieve housing expectations or housing aspirations using a ten-point scale to evaluate housing before and after remodeling, and expectations for the future (Tremblay and Dillman, 1983).

Cost of Remodeling -- as estimated by home owner.

Ratio of Estimated Cost to Final Cost -- Ratio of cost as estimated on building permit, with the final cost of the project.

Planning the Project -- Extent of use of various information sources for assistance in planning the remodeling

First-time Remodeler -- Whether or not this was the first remodeling project undertaken

FIGURE 1. DESCRIPTION OF VARIABLES

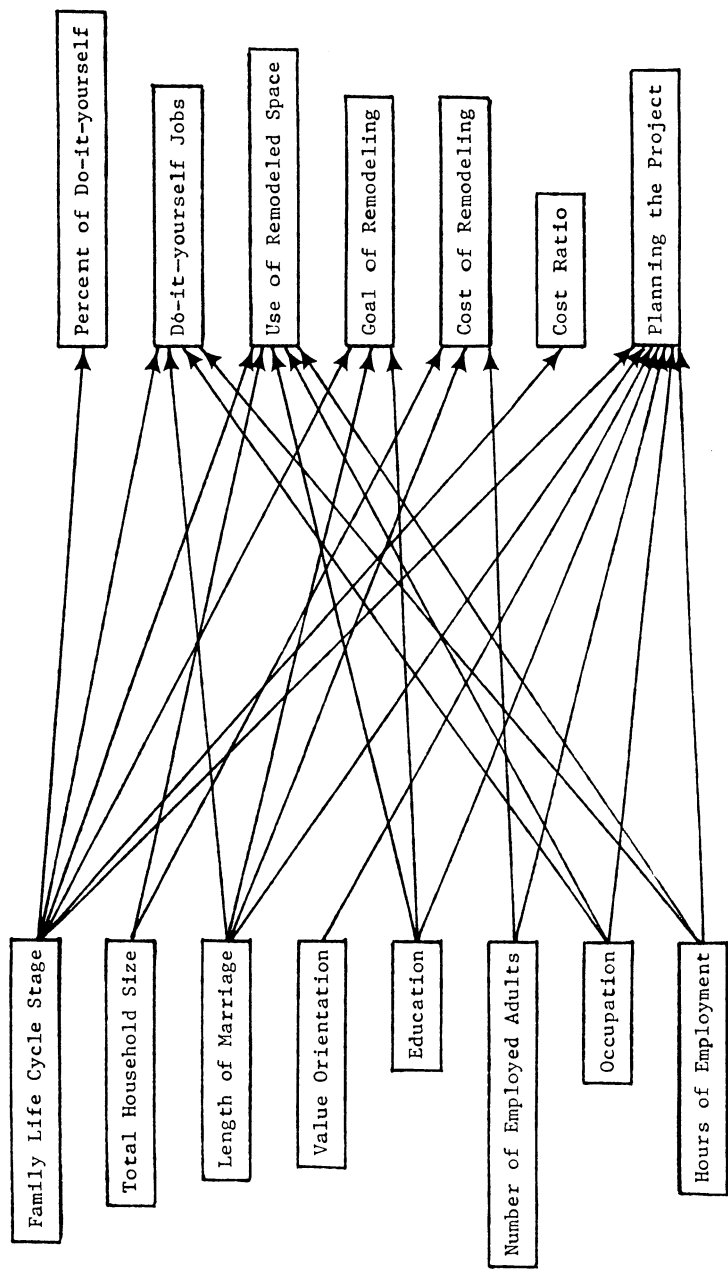


Figure 2. Zero-order Effects of Characteristics of the Household on the Remodeling Process

Table 1. Effect of family life cycle on remodeling process - ANOVA

Family life-cycle stage	Percent of DIY labor ¹	Mean number of DIY jobs ²	Goal of remodeling project ³	Total number of planning sources ⁴
young	2.9(SD=1.3)	5.7(SD=3.6)	4.7(SD=1.6)*	5.1(SD=2.3)
mature	2.5(SD=1.2)	5.1(SD=4.0)	5.6(SD=1.4)	4.4(SD=2.1)
older	2.5(SD=1.2)	4.7(SD=3.8)	5.6(SD=2.2)	2.9(SD=2.3)*
elderly	1.5(SD=0.9)*	1.1(SD=0.4)*	6.4(SD=1.5)	---

*Note: *=significantly different from other groups using Duncan's multiple-range test

1. 1 equals none of the work; 2 equals less than 25 percent of the work; 3 equals 25 percent-49 percent of the work; $F=3.27$; $df=3,156$; $p < .05$.

2. $F=3.74$; $df=3,157$; $p < .05$

3. Rating of their housing before remodeling where 0 is worst, 5 is acceptable, and 10 is best. $F=3.25$; $df=3,149$, $p < .05$.

4. $F=11.60$; $df=2,147$; $p < .05$.

Table 2. Effect of family life cycle on remodeling process - Chi-square

Family life-cycle stage	Use of remodeled space - personal care areas ¹	Cost ratio ²	Planning help from friends ³	Planning help from relatives ⁴
	%	%	%	%
young	28	39	63	73
mature	30	37	42	40
older	10	54	35	13

1. $\chi^2=6.22$; $df=2$; $p < .05$

2. $\chi^2=10.17$; $df=4$; $p < .05$

3. $\chi^2=10.65$; $df=4$; $p < .05$

4. $\chi^2=35.42$; $df=4$; $p < .05$

Table 3. Effect of length of marriage on the remodeling process - ANOVA

Length of marriage	Number of do-it-yourself jobs	Rating before remodeling	Increase in 5 years	Cost of remodelings	Number of planning sources
1-9 years	6.1 _a (SD=3.5)	4.9 _c (SD=1.7)	3.8 _d (SD=1.8)	6.2 (SD=2.4)	4.5 _g (SD=2.3)
10-19 years	5.2 _b (SD=3.9)	5.4 (SD=1.4)	3.4 (SD=1.7)	7.0 _e (SD=2.4)	4.5 _h (SD=2.5)
20-29 years	4.7 (SD=4.1)	5.8 (SD=1.7)	3.0 (SD=1.7)	7.5 _f (SD=2.0)	4.1 (SD=1.9)
over 30 years	2.9 _{ab} (SD=2.4)	6.2 _c (SD=2.1)	2.5 _d (SD=1.2)	5.5 _e (SD=2.8)	2.9 _g (SD=2.4)

Note: Same subscripts denote significant differences at $p < .05$, using Duncan's multiple-range test.

1. $F = 3.21$; $df=4, 155$; $p < .05$
2. 0=worst; 5=acceptable; 10=best. $F=3.08$; $df=4, 147$; $p < .05$
3. 0=worst; 5=acceptable; 10=best. $f=2.84$; $df=4, 147$; $p < .05$

future. Households who have been married fewer years also tend to depend more on relatives (66 percent) for planning assistance, than the 10-to-19 years married group (42 percent), 20-to-29 years married group (40 percent) and the over-30 years married group (4 percent; $\chi^2=26.33$, $df=8$; $p < .05$).

Couples with long marriages (over 30 years) spend significantly less for remodeling (see Table 3). Lower-cost projects, coupled with less DIY, suggest smaller, less extensive projects. This is consistent with fewer jobs done and fewer planning sources consulted.

Value Orientation

Stronger value orientations are associated with use of an architect for help in planning (see Table 4). Consulting a professional could be associated with wanting a more successful project. This is consistent with holding a stronger value of the home as an investment to be improved, or in particular, a consumption item to be enjoyed.

Education

This study finds significant differences between the level of education achieved by the occupant and the value of the dwelling ($\chi^2=39.65$; $df=5$; $p < .05$), with those educated beyond college living in more expensive housing. This may help explain other significant differences found in the education variable and the remodeling process (see Table 5).

Those households with less education live in lower-value housing more likely not having adequate garages. This could contribute to a less acceptable view of the home, as well as more garage remodeling. A Duncan's multiple-range test confirms the trade school group differing significantly from other education groups in rating the home before remodeling, with a mean score of 3.8 (SD=1.7) out of 10, where 5 is acceptable ($F=2.53$; $df=4, 148$; $p < .05$).

The more valuable homes of the higher educated home owners may be an incentive to consult an architect before making alterations (see Table 5). In addition, higher education, associated with higher status occupations, suggests more monetary resources available to hire an architect to plan the remodeling.

Employment. There are differences among the number of employed adults in the number of planning sources used and dependence on relatives. Findings on the number of employed-adults variable confirms previous findings with respect to the family life-cycle stage and the length of marriage. Retired households tend to do smaller, less costly remodeling projects and consult fewer planning sources (see Table 6). Retired households also are less likely to consult relatives (13 percent) than are other households (31 percent to 47 percent) with employed adults ($\chi^2=13.90$; $df=6$; $p <.05$).

Table 4. Value orientation and use of architects¹

Value orientation	Used architects	Total sample
	%	%
Investment	48	45
Consumption	48	34
Neutral	4	21

1. $\chi^2=15.01$; $df=4$; $p <.05$

Table 5. Effect of education on the remodeling process - Chi-square

Education level	Use of remodeled space-garages ¹	Planning the project-Use of architects ²
	%	%
high school graduate	66	17
trade school graduate	60	17
college graduate	31	36
graduate education	24	36

1. $\chi^2_2=18.38$; $df=4$; $p <.05$

2. $\chi^2=18.03$; $df=8$; $p <.05$

Do-it-yourself (DIY) activities also relate to occupation (see Table 7). Households in skilled labor occupations do more remodeling jobs. A Duncan's multiple-range test shows that the professional (4.4 jobs, $SD=3.8$) and administration support (4.9 jobs, $SD=3.3$) groups are significantly different from the precision craft group (7.4 jobs, $SD=4.0$) in terms of DIY projects' ($F=3.17$; $df=3.88$; $p <.05$). Many of these skilled laborers may work in home construction.

As with higher education levels, households with high-status occupations are less likely to remodel garages (see Table 7). One reason may be that respondents with high-status occupations may live in dwellings with adequate garages. However, the significant difference among occupational categories in use of relatives as a planning source falls along traditional white-collar and blue-collar lines. This relationship is difficult to explain. One possible explanation is that those in skilled labor occupations are more apt to have extended family members in similar occupations and that these skills are traded. Also, blue-collar households tend to live near family/relatives (Michelson, 1976, Speare, 1974) and households with skilled labor occupations simply may have more relatives available

for assistance.

Table 6. Effect of the number of employed adults on the remodeling process - ANOVA

Number of of Employed Adults	Cost of Remodeling ¹	Total Number of Planning Sources ²
0 (retired)	3.3 _{a b c} (SD=1.9)	1.5 _{d e f} (SD=1.6)
1	7.0 _a (SD=2.4)	3.7 _d (SD=2.2)
2	6.5 _b (SD=2.4)	4.4 _e (SD=2.5)
3	7.1 _c (SD=2.0)	4.4 _f (SD=2.7)

Note: Same subscripts denote significant differences according to Duncan's multiple-range test.

1. 3=\$1500-\$1999; 6= \$6000-\$7999; 7=\$8000-\$9999; F=6.45; df=3,150; p <.05

2. F=4.34; df=3,150; p <.05

Table 7. Effect of occupation on the home remodeling process - Chi-square

Occupation	Use of Remodeled Space -Garages ¹	Use of Relatives for Planning Assistance ²
	%	%
Professional	29	34
Technician	47	80
Administrative support	71	30
Precision craft and repair	59	50

1. $\chi^2=10.38$; df=3; p <.05

2. $\chi^2=12.98$; df=6; p <.05

Hours of Employment

Use of Remodeled Space. There is a significant difference among average employment hours in remodeling garages ($\chi^2=13.08$; df=4; p <.05), as follows:

less than 30 hours,	22-36 percent
31 to 40 hours,	58 percent
over 40 hours,	43 percent

The average-hours-of-employment variable results in a similar pattern to the family life cycle, length of marriage and number-of-employed-adults variables (see Table 8). Retired households, as older households, do remodeling jobs

involving less DIY activities and fewer planning sources. In addition, households with higher average hours of employment (and usually multiple incomes) are more likely to consult professional sources in planning (see Table 9.)

Table 8. Effect of hours of employment on the remodeling process -ANOVA

Hours of employment	Average number of jobs ¹	Number of planning sources ²
0	2.0 _{a b} (SD=1.4)	1.5 _{d e f} (SD=1.6)
1-20 hours	4.4 (SD=4.2)	3.3 (SD=2.4)
21-30 hours	5.4 _a (SD=3.7)	4.4 _d (SD=1.9)
31-40 hours	5.9 _{b c} (SD=3.8)	4.1 _e (SD=2.5)
over 40 hours	4.0 _c (SD=3.4)	4.6 _f (SD=2.5)

1. F=3.45; df=4,153; p <.05

2. F=3.41; df=4,148; p <.05

Use of remodeled space with respect to employment hours presents a significant difference ($\chi^2=13.08$; df=4; p <.05). Households with 31-40 average employment hours (58 percent) and over 40 employment hours (43 percent) are more likely to remodel garages. With higher average employment hours (thus multiple incomes), there may be more resources to spend on cars, campers and vans, with more garage space needed. Alternatively, households with high education and occupational status, who are less likely to remodel garages, may have lower average hours of employment, representing one full-time, well-educated, professionally employed adult and one full-time homemaker or part-time employed adult.

Table 9. Effects of hours of employment on use of contractors and architects

Hours of Employment	Architects ¹	Contractors ²
	%	%
0 (retired)	13	63
1-20 hours	16	53
21-30 hours	30	85
31-40 hours	16	69
over 40 hours	47	100

1. $\chi^2=16.56$; df=8; p <.05

2. $\chi^2=24.06$; df=8; p <.05

CONCLUSIONS AND IMPLICATIONS

A consistent pattern emerges from this study showing the relationship of various household characteristics to the home remodeling process. Various measures show that younger stages in the family life cycle are associated with more DIY activities and assistance in remodeling, a home below expectations before remodeling, more expected improvement of the home in the future, and more bathroom remodeling. Older family life-cycle stages are associated with less DIY activities and assistance, fewer planning sources consulted and a home more than acceptable before remodeling. Larger-size households are more likely to remodel bathrooms and to have more expensive remodeling projects. Smaller households are more likely to remodel garages.

Lower educational levels and lower occupational status are associated with more DIY activities and remodeling garages. Higher education is associated with professional assistance in planning the remodeling.

This study concludes that the factors defining the family life cycle stage and socio-economic status have the strongest relationship to the home-remodeling process. These household characteristics have the greatest association with factors in the remodeling process that define the planning process, the use of the remodeled space and the amount of do-it-yourself involvement.

Findings of this study can be applied to planning and delivery of educational programs to assist households planning home remodeling. First, program planners need to consider who is remodeling. The households are highly educated, employed, growing families of above-average socio-economic status. While these households are likely to accept adult education programs, their time is limited. Timing, location of workshops, and methods of delivery need to incorporate this limitation.

Second, program planners should consider what types of remodeling are being done and why. Most remodeling projects are initiated to add space to the dwelling. Those households remodeling are more likely to have a consumption value orientation. The content of home remodeling programs should reflect the type of remodeling and emphasize how to maximize personal gain and enjoyment from remodeling, to minimize the "hassle" of the process.

Finally, program planners need to consider where study participants go for planning assistance. Contractors, hardware, home supply and lumberyard store personnel, and design professionals are very popular sources of remodeling information. Educational programs need to involve these professionals because they have expertise, knowledge of needs and contact with potential audiences. Friends and relatives are also important sources of planning assistance. Educational programs need to incorporate these relationships by targeting not only the home owner, but also the support group that will assist in the remodeling.

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