

Control or Communication:  
Within-Network Exchange in the Selection of Home Remodelers<sup>1</sup>

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The Use of Within-Network Exchange in the Selection of Home Remodelers

**Abstract**

This paper reports on the second study to investigate the factors that lead American consumers to buy from sellers who are members of their social networks rather than sellers with whom they have no prior relationship. In line with DiMaggio and Louch's (1998) pioneering analysis, We find that "within-network" exchange (WNE) is quite prevalent, accounting for at least 44% of the home remodelers selected by respondents to a national survey of homeowners sponsored by the National Association of the Remodeling Industry in 2004. This survey also provides unique insight into the selection process and generates implications that challenge the explanation for WNE given by DiMaggio and Louch, who interpret WNE as a mechanism by which buyers discipline sellers. First, it is rare for WNE to involve an explicit choice between a WN remodeler and a remodeler with whom the homeowner has no prior relationship-- although the within-network remodeler is generally preferred when such a choice is in fact made. The main reason that such explicit choices are rare is that WNE is associated with a sharp curtailment of the search process. Second, since the cost of the project does not increase engagement in WNE and since trustworthiness is not significantly higher for within-network remodelers, WNE does not appear to be particularly effective instrument of social control. Rather, it appears that most distinguishes WN sellers is the promise that they will communicate more effectively with the buyer.

While our understanding of exchange in economic markets has been profoundly changed by evidence of significant social “embeddedness” in transactions between business enterprises (e.g., Baker 1990; Podolny and Page 1998; Uzzi 1996, 1999; Uzzi and Lancaster 2004), we know relatively little about embeddedness in transactions involving consumers. That is, to what extent and under what conditions do consumers buy from sellers with whom they have some prior (non-economic) relationship? DiMaggio and Louch’s (1998) pioneering analysis of this question showed that American consumers’ predilection for “within-network exchange” (WNE) is remarkably high for the five types of transactions discussed in the 1996 General Social Survey (GSS). In particular, 38.4% of the respondents had a prior relationship (defined as a direct tie or a strong indirect tie) with the seller of a recently-purchased car (44% if the car was used and 52% if the seller was not a dealer); 40.4% had a prior relationship with either the broker or the seller of a recently-purchased home; 38.8% had a prior relationship to the seller of legal services; and 39.1% had a prior tie to the seller of “home maintenance services.” DiMaggio and Louch point out that this degree of WNE is surprisingly high in light both of neoclassical conceptions of the market as comprising one-shot anonymous encounters and sociological thinking on consumption in advanced capitalism which has “focused not on how people use social relations to manage the market, but on how markets restrict or enervate social relations (DiMaggio and Louch 1998: 620).” Thus, preliminary evidence indicates that WNE is common in the U.S., though far from ubiquitous and it seems to vary. What accounts for this variation?

DiMaggio and Louch (1998) provide an initial answer rooted in transaction costs economics (Williamson 1975, 1985, 1996). In particular, they argue that as uncertainty about the transaction increases, as the frequency of the purchase decreases, and as the purchase becomes a more significant item in a consumer’s budget, the consumer will be more likely to select a within-network seller because

... consumers use social networks in much the same way that firms use hierarchy: as alternative governance structures for transactions for which impersonal market relations provide inadequate protection against opportunistic behavior...  
Transacting with social contacts is effective because it embeds commercial exchanges in multiplex relations that extend over space and time, in effect holding the seller’s network hostage to appropriate role performance in the economic exchange (DiMaggio and Louch 1998: 634).

In short, “embeddedness” is understood as “a response to risk... the greater the risk that a transaction poses to consumers, the more likely are consumers to seek out sellers to whom they have preexisting social ties (pp. 624-625).”

There is considerable precedent for interpreting embeddedness as a method for mitigating vulnerability or uncertainty (e.g., Pfeffer and Salancik 1978; Burt 1983; Baker 1984; cf., Podolny 1994). And yet, there are several difficulties with applying such an explanation to consumers’ engagement in WNE. The first is that the empirical support for it is not very strong. The 1996 GSS data do not include direct information on any of the three dimensions that DiMaggio and Louch mention as increasing the consumer’s vulnerability and hence her tendency to favor WNE: uncertainty about the seller’s reliability, the infrequency by which the consumer purchases the good in question, and the cost of the transaction. However, DiMaggio and Louch argue that the set of transactions covered, when broken out by the type of product and the type of seller or intermediary, can usefully be distinguished along the first and second of these three dimensions.<sup>2</sup> For instance, purchases of used cars and homes from private owners are assumed to be purchased less frequently, and therefore predicted to involve more WNE, than are home maintenance services and legal services. Furthermore, since there is considerable “performance uncertainty” involved in service transactions (due to the typical requirement of an advance deposit; the considerable discretion involved; and the high switching costs involved; DiMaggio and Louch 1998: 626), more WNE is predicted in the purchase of legal and home maintenance services than in the purchase of cars and homes.

Yet the 1996 GSS data provide only mixed support for these predictions. In particular, the mean differences are largely consistent with the frequency hypothesis when the criterion variable is the actual use of WNE, but inconsistent when consumers’ stated preferences are examined. And the reverse is true for the hypothesis attributing WNE to performance uncertainty: while respondents seem to prefer WNE for

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<sup>2</sup> It is not clear why DiMaggio and Louch do not apply the same method to infer a ranking of transaction by the size of the purchase. For instance, homes generally cost more than autos, which in turn cost more than home maintenance and legal services. In practice, however, the size of the purchase should be highly and negatively correlated with its rarity, so that the hypotheses would be equivalent.

transactions that DiMaggio and Louch assume are beset by greater performance uncertainty, their actual transactions do not reflect such preferences. Thus, empirical support of the view that consumers use WNE to mitigate vulnerability is indirect at best and ambiguous at worst.

There are also several related theoretical difficulties with this view. The first was stated by Granovetter in his classic essay on embeddedness in the market economy-- i.e., that "...social relations ... are not sufficient to guarantee [trustworthy behavior] and may even provide occasion for malfeasance and conflict on a scale larger than in their absence (Granovetter 1985: 491)." Thus, the effectiveness of WNE as a mechanism for enforcing social control is not always clear.<sup>3</sup> At the very least, such skepticism should lead us to distinguish between contexts where a web of interested third-parties surround ego and alter from those in which the embeddedness is purely dyadic since checks on malfeasance will be stronger in the former case (Granovetter 1985: 492; cf., Coleman 1988; Goode 1960).

This observation leads to a second difficulty: even if we concede that WNE affords greater discipline on sellers, what does it accomplish beyond the discipline that is already provided by other available mechanisms? Such mechanisms include legal protections, institutionalized watchdogs such as the Better Business Bureau, and the gossip networks that pervade any market. Indeed, DiMaggio and Louch (1998: 620) distinguish WNE from "search embeddedness," whereby "actors ... use social relationships to identify the reliability of potential transaction partners to whom they have no direct or close indirect ties" and point out that "much theory predicts high levels" of such embedded search. Indeed, many consumption decisions appear to involve heavy use of referrals by which consumers rely on the experiences of strong or weaker ties with sellers—connections that are not considered WNE under DiMaggio and Louch's definition. But if such "search embeddedness" is indeed rampant, what makes WNE effective? In particular, what does WNE add to the threat that the buyer's unhappiness will be broadcast throughout the referral chains that permeate the market?

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<sup>3</sup> Others have also challenged the Williamsonian view that incorporating a transaction within a firm's "hierarchy" substantially mitigates the likelihood that a vulnerable party will be held up or that any such mitigation will not be offset by incentive problems faced by the firm (see Eccles and White 1988; Freeland 1996, 2001; Baker, Gibbons, and Murphy 2002).

Finally, the effectiveness of WNE as an instrument of social control must be reconciled with the recognition that sellers must be induced to accept such discipline. As Selznick taught us (1949; cf., Pfeffer and Salancik 1978: 164-165), co-optation comes with a price tag. Accordingly, the 1996 GSS data indicate that consumers may express a preference for WNE as a means for disciplining sellers, but sellers are more wary (DiMaggio and Louch 1998)-- after all, why should they freely accept such constraints? It stands to reason that sellers implicitly demand something in return-- e.g., a higher price (cf., Kirman 2001), or lower expectations for quality. And this price may help explain why buyers' preference for WNE (which in any case might be satisfied by search embeddedness) in transactions that are plagued by performance uncertainty does not translate into actual WNE.

Thus, while DiMaggio and Louch's pioneering analysis has documented the importance of WNE, questions remain as to the origins of WNE and to what extent it can be described as a means for disciplining sellers. The present study, which reports on the National Association of the Remodeling Industry (NARI) Consumer Survey-- a national survey of homeowners, casts light on this issue in ways that the 1996 GSS cannot. The main difference between the two sets of data concerns a trade-off between breadth and depth. While the 1996 GSS provides information on an array of transactions, one must resort to guesswork to portray the context for these transactions and the manner by which the sellers were selected. As pointed out above, the 1996 GSS data include no direct information on any of the dimensions that DiMaggio and Louch contend increase a buyer's sense of vulnerability. Nor can the 1996 GSS data confirm the crucial assumption that consumers feel less vulnerable when they transact with WN—that, in lay terms, consumers are more willing to “trust” such sellers. By contrast, while the NARI survey focuses on a single transaction-- the purchase of remodeling services (which is an infrequent purchase that is subject to notorious levels of performance uncertainty), the depth of detail that it provides on this transaction provides unique insight into the matter of consumer embeddedness. In particular, the survey includes information on the cost of the remodeling project, which allows us to test whether WNE is indeed more common when the purchase is a bigger ticket item. In addition, rather than having to undertake the difficult and methodologically-problematic task of inferring the nature of the choice

process from consummated transactions, the NARI survey affords a much richer picture of the context for the transaction because it includes information on the extent and nature of the search process as well as information on the remodeler that was considered most seriously but rejected. And finally, the NARI survey asked respondents to rate the importance of a wide variety of reasons, including the remodeler's perceived "trustworthiness"-- for why they chose their remodeler over others. Thus, we are able to test whether WN sellers indeed consumers' sense of vulnerability or whether other considerations might be more important in explaining why they were chosen.

In the next section, we describe the NARI survey and compare it with results from the GSS with a view to clarifying the population to which the NARI results may be taken as representative. We then describe results from three stages in the selection of a remodeling contractor: the choice by the homeowner to hire a professional rather than to do the work himself; the size and nature of the consideration set from which the professional remodeler is chosen; and the factors that distinguish the remodeler that is in fact chosen, with particular attention on the correlates of WNE. The final set of results concern how WNE is associated with the homeowner's degree of satisfaction with the remodeling project. We conclude by noting limitations of the study by suggesting directions for future research.

### NARI Consumer Survey

This paper reports on results from a survey that was commissioned by the National Association of the Remodeling Industry (NARI) and administered in January and February of 2004. The survey was intended to draw a portrait of the process by which remodeling contractors ("remodelers") are selected by homeowners; the factors responsible for the selection of a remodeler; and the factors that lead to a more or less satisfying transaction. The survey instrument was designed by the survey firm Northwest Survey and Data Services (NSDS) in consultation with the author and with the lay leadership of NARI, which consists of seasoned remodelers with extensive experience in all aspects of the relationship between contractor and homeowner. The study was part of a larger research project on remodeling general contractors (see Zuckerman and Sgourev

2004), which included two prior surveys of such contractors (Zuckerman and Sgourev 2002, 2003).

The sampling frame for the survey was a list of all known telephone numbers of U.S. homeowners obtained from a market research firm, from which a simple random sample was drawn by NSDS with a target sample size of 600. Any adult homeowner was eligible to respond to the survey. After an initial screening question that confirmed homeownership, each respondent was asked whether he or she had “done any major home remodeling work, not including repairs, in the last 5 years.” Approximately one-fourth of the homeowners answered in the negative to this question and was thus rendered ineligible. The final sample size was 604 and the response rate was 25%, with an estimated sampling error of 4.0% (5.3% for the homeowners who hired remodelers).<sup>4</sup>

This response rate appears low, especially when compared with the GSS, which typically has response rates that are triple this level (Smith, Davis, and Marsden 2002). Yet note that the refusal rate (16%) was quite low for a phone survey for which no incentives were given for participation.<sup>5</sup> Indeed, it is remarkable that so many homeowners were willing to respond to a survey about which they were told only that it “takes about ten minutes and is for the National Association for the Remodeling Industry.” The main reason that the response rate was not higher was that the budget and timeframe allocated to the survey entailed that NSDS could not persist in trying to locate homeowners who were difficult to contact or schedule for interviews. Rather, as is the norm in phone-based household surveys, additional samples were drawn and more available homeowners were obtained. The remaining question is whether eligible homeowners who were either less available for the survey or negatively disposed towards it would have answered differently than did survey respondents.

Some confidence regarding this question and, more importantly, a better sense of the population to which the NARI data should be regarded as representative, may be gained by comparing estimates from NARI data with corresponding estimates from GSS

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<sup>4</sup> This response rate was calculated by NSDS using CASRO (Council of American Survey Research Organizations) method no. 3. This is a conservative estimator, which includes an estimate of the number of eligible respondents among those not interviewed (see American Association for Public Opinion Research 2004: 28-29).

<sup>5</sup> CASRO refusal rate no.2, which includes estimates of refusal from those who were not interviewed, was used (see American Association For Public Opinion Research 2004:31).

data. First, several socio-demographic variables may be compared: gender, age, household size, population density of residence, household income, and education. Comparisons of variables that reveal notable differences are presented in tables 1 through 5. We see in Table A2 that reveal that NARI respondents tend to reside in households with considerably higher incomes than are GSS respondents. There are likely two reasons for this difference. The first, which is likely also responsible for the fact that the NARI sample is more educated (Table 3) and older (Table 4) than the GSS sample, is that the NARI survey screened respondents on having done major remodeling work in the prior five years. Higher SES and older homeowners seem more likely to survive this screen.

TABLE 1 ABOUT HERE

TABLE 2 ABOUT HERE

TABLE 3 ABOUT HERE

TABLE 4 ABOUT HERE

A second reason for the disparity in household income reflects the tendency for the survey methodology of the NARI survey to over sample households with multiple adults, who tend to have higher household incomes (median of \$25,000-\$29,999 among 2002 GSS respondents) than multi-adult households (median of \$50,000-\$59,999). As we see in table 1, whereas almost 54.4% (28.9%) of 2002 GSS homeowners lived in two-adult (one-adult) households, this was true of 77.3% (3.6%) of NARI respondents. This difference in the composition of the samples appears to reflect the fact that NSDS survey-takers were more likely to find an adult who could speak for the household in multi-adult households.<sup>6</sup> Evidence for the importance of this factor may be seen in that, once we restrict attention to two-adult homeowners (right columns in table 2), the disparity in household income between the NARI sample and the 2002 GSS is considerably smaller. A restriction to two-adult households does not attenuate the differences in age or education (right columns of tables 3 and 4).

A final feature of the NARI sample that may be distinctive when compared to the GSS (and the U.S. population it represents) is that NARI respondents appear

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<sup>6</sup> The survey methodology may also have slightly increased representation by women, who constitute 57% of the NARI sample but only 55% of 2002 GSS homeowners (and 56% of 2002 GSS respondents)

disproportionately drawn from rural areas rather than urban or suburban districts. This difference seems partly due to the fact that single-adult families are more common in urban districts. It might also reflect rural residents' having a greater tendency to perform remodeling projects. But the main reason is probably that, while the GSS variable (XNORCSIZ) is based on objective population density, the NARI question is based on respondents' self-reports and Americans may have a tendency to regard their place of residence as suburban rather than urban, and as rural rather than suburban.

#### TABLE 5 ABOUT HERE

In addition to such socio-demographic comparisons, it is instructive to compare the estimate from the 1996 GSS for the proportion of the population that had “purchased home maintenance services (painting, roofing, plumbing, or something similar) in the past 10 years” with the estimate from the NARI survey of those who had purchased remodeling services in the prior five years. Once we restrict the 1996 GSS sample to homeowners, the proportion of respondents who had purchased home maintenance services was 54.5%. There are two reasons to expect this number to be somewhat higher than the corresponding estimate from the NARI survey. The first is that the GSS question covered ten years while the NARI question covered five. The second is that the GSS category of “home maintenance services” is a more general category than home remodeling in that the latter explicitly excluded repair work. And indeed, the proportion of NARI respondents who had hired a remodeler in the prior five years was about ten percentage points lower.<sup>7</sup> In particular, since approximately 25% of homeowners contacted by NSDS were ineligible because they answered in the negative to the screening question, and 62% hired a professional in their most recent project or in at least one project in the past five years, we may derive an estimate of 46.5% who had purchased home remodeling services over the past five years.

A final point of comparison between the NARI survey and the GSS concerns the matter at hand: the extent to which respondents in the two surveys tended to conduct their purchases through within-network exchange (WNE). Again, “home maintenance

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<sup>7</sup> One might expect the difference to be even greater since home repair work is more frequently done than home remodeling. Indeed, at least two factors may have closed the gap somewhat: the affluence of the NARI sample and the fact that the five-year period leading up to 2004 was one of unusually high demand for home remodeling services (see Joint Center for Housing Studies of Harvard University 2003).

services” is a more general category of service than home remodeling, but it seems reasonable to expect similar rates of WNE for the two services, particularly in two samples that purport to be representative of the U.S. population. And indeed, as displayed in table 6, both surveys indicate that just under half of all such transactions can be regarded as within-network exchange. The distribution across *types* of WNE is somewhat different, with transactions with friends and relatives being more common among NARI respondents who purchased remodeling services and repeat transactions with the same seller more common among GSS homeowners who purchased home maintenance services. The latter difference could simply reflect the relative frequency with which home maintenance services are purchased, which thereby increases the opportunities for repeat business. This difference could also reflect the slight difference in question wording, whereby the GSS asked about the respondent’s “relationship with the person who did the work” whereas the NARI survey asked about the relationship with “any of the people in the company.” In addition, insofar as home remodeling services are riskier and more expensive than most home maintenance services, the higher rate of WNE through friends and relatives in home remodeling might be interpreted as consistent with DiMaggio and Louch’s prediction of greater WNE among transactions that are subject to greater performance uncertainty. Finally, another possible reason for the difference is that rural Americans may be more likely to use WNE and the NARI sample may be more rural than the nation in large. Indeed, reanalysis of the 1996 GSS indicates that the use of WNE in the purchase of home maintenance services is more common among homeowners in rural areas (57.7%) than in suburban areas (48.1%;  $t=2.35$ ) or urban areas (42%;  $t=3.14$ ).<sup>8</sup>

#### TABLE 6 ABOUT HERE

Note finally that the other dimensions along which the NARI sample differs from the GSS (and the U.S. population it represents) do not appear to be associated with greater engagement of WNE. In particular, analysis of the 1996 GSS reveals little

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<sup>8</sup> It is unclear whether the association between ruralness and WNE extends beyond the purchase of home maintenance services such that we may speak of a general tendency for greater embeddedness in rural areas (cf., Fischer 1982). While two of the six consumer transactions (purchase of car from a dealer, and of a home from the owner) reviewed in the 1996 GSS display a significant tendency for ruralness to be associated with greater WNE, the effects are considerably weaker than for the purchase of home maintenance services. Note as well that ruralness is associated with an insignificant, *negative* association with stated preference for WNE across the five transactions about which 1996 GSS respondents were asked.

difference in the extent to which two-adult households engage in WNE for home maintenance services (49%) when compared with single-adult households (46%,  $t=1.04$ ). Nor is WNE for other transactions higher for two-adult households. Such analyses also indicate that wealth, education, and age are also not related to engagement in WNE. This gives us confidence that, while results from the NARI survey should be taken as particularly representative of higher SES and somewhat older two-adult households, engagement in WNE by this subpopulation seems similar to that of the U.S. population at large. More generally, we may say that, as was found concerning the more general category “home maintenance services” as well as several other transactions in the 1996 GSS, engagement in WNE in the purchase of home remodeling services is common among a substantial proportion, though not a majority, of the population represented by the NARI sample. The next task is to use the NARI data to shed further light on the process by which service providers are selected and why many consumers do business with WN sellers but others do not.

#### Do it Yourself or Hire a Professional?

The NARI survey affords unique insight into the two (analytically, if not temporally, distinct) stages that are involved in the selection of a service provider: the decision to hire a professional rather than doing the work oneself; and the decision to hire a particular service provider rather than some other.<sup>9</sup> In order to identify the factors that drive WNE, it is important to examine the first stage as well as the second, especially since one reason that homeowners may choose to do the remodeling themselves is because they cannot find remodelers that they trust.

The results in table 7 suggest that the issue of trust is not particularly important in explaining why homeowners do the work themselves (DIY), and more generally, that homeowners tend not to stress difficulties they encountered finding appropriate remodelers on other dimensions such as quality, reliability, and budget. By far the most important reason though is that many Americans derive intrinsic satisfaction from such

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<sup>9</sup> In the language of strategic management (Porter 1980), the consumers alternative may be divided between *substitutes* for the industry in question and *competitors* within the industry. While the primary alternative for home-remodeling is to do the work yourself, other goods and services could be substituted to provide some or all of what is demanded. For instance, homeowners can purchase a different house instead of remodeling their present home.

work. Another key reason is the “expense” of the remodeling project, which suggests that the scale and complexity of costly projects is too daunting for most homeowners and that professionals are more efficient. Many homeowners also do not have the free time for such large projects. The data presented in table 8 also indicate the importance of expense in the decision to hire a professional. Respondents’ report of the total cost of DIY projects (mean=\$20,065, median category= under \$5,000) was considerably greater than that for projects involving a professional (mean=\$20,065 [ $t=3.23$ ]; median category: \$5,000-\$10,000 [*Mann-Whitney Z*=5.178]).<sup>10</sup> Note that it is unlikely that these subjective estimates of total cost include the opportunity costs associated with DIY or the opportunity and transaction costs associated with searching and transacting with a professional remodeler.

TABLE 7 ABOUT HERE

TABLE 8 ABOUT HERE

Various socio-demographic variables also affect the tendency to hire a professional rather than DIY. In table 9, We present the results of a series of logit models that show homeowners who hire professional remodelers to be considerably older (mean [median] age of 57 [56] vs. [mean and median of ] 50 for DIY), somewhat higher in socio-economic status (particularly income); to reside in less rural areas (nearly significant); and to be female. No other socio-demographic variables were significant predictors of hiring a professional. The female effect remains significant (62% reported hiring a professional vs. 48% for men;  $t=3.39$ ) even when we restrict attention to multi-adult households (respondents were not asked for their marital status, but such households are presumably dominated by married couples and other male-female partnerships). This seems surprising since either member of the household should presumably give the same account of household transactions. The (amusing) implication is that when a man is asked to consider the most recent “major remodeling work” that the household has performed, he is more likely to include a DIY project but his wife or partner is more likely to disregard it and to regard as “major” only those projects for which a professional was hired. This result might be regarded as consistent with the pronounced tendency for husbands to inflate their contribution to the work of the

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<sup>10</sup> The mean values are computed using the coding in the second column of table 8.

household (e.g., xx), though a different spin on the household battle-of-the-sexes would likely be given by the husbands involved.<sup>11</sup> Another possibility is that the men who are most likely to be found by survey-takers were those who are present in the home and who are more apt to do DIY projects.<sup>12</sup>

#### TABLE 9 ABOUT HERE

Note finally that respondents who reported that their most recent major remodeling project was a DIY were asked whether they had ever hired a professional remodeler. Those 39 respondents (of 264 who reported that their most recent major remodeling project was a DIY) for whom this project occurred in 1999 or later (i.e., within the time-frame of the screening question) were then asked the same questions about the selection of the remodeler and their experience as were the 338 respondents who reported hiring a professional for their most recent major remodeling project. We now proceed by analyzing the factors that led these 377 respondents to choose the remodelers they hired. In doing so, it bears repeating that, due both to the nature of the sampling methodology and the tendency for certain Americans to do remodeling themselves rather than hire professionals, our results should be regarded as most representative of older and wealthier American home owning households, and particularly those that are in two-adult families. And since 63% of these 377 respondents are women (vs. 56% in the full sample that included those who reported only on DIY projects), the results may tell a story that is somewhat more in keeping with a female perspective on the matter at hand.

#### Who is Considered?

Once having decided to hire a professional service provider, how do consumers decide among rival professionals? This stage of the process can also be subdivided into two (analytically, if not temporally) distinct stages: forming a consideration set of service providers, and then choosing between them (cf., Zuckerman 1999). Indeed, any realistic

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<sup>11</sup> There is also a nearly significant tendency for male respondents (both in single and multi-adult households) to say that they did the work themselves because they “enjoy doing the work” (*Mann Whitney Z*=1.44), though this was still by far the most common reason given by female respondents (74.4% cited it as “very important” and 7.0% as “not at all important” vs. 81.3% and 2.2% for men). There were no differences by gender for the other reasons.

<sup>12</sup> Thanks to Deepak xx for this observation.

model of consumer choice does not depict the consumer as scanning all possible sellers but as restricting her attention to a small set of contenders (Shocker, Ben Akiva, Boccara, and Nedungadi 1991; Urban, Weinberg, and Hauser, 1996). But little is known about the nature of these consideration sets, especially outside the context of the mass consumer markets that tend to be present consumers with a relatively small number of alternatives (see e.g., White 2002).

Beyond the general importance of gaining a richer picture of the context for consumer choice, this issue has specific implications for the question before us. As DiMaggio and Louch point out (1998: 628-9), one reason that a particular consumer is more apt to engage in WNE is because she has a larger social network (in the industry represented by the seller). Accordingly, the tendency to engage in WNE may in fact be associated with the tendency to *reject* other sellers who are also within one's network. Put differently, since the thesis that consumers use WNE as a mechanism for disciplining sellers implies that consumers reject rival sellers who are otherwise competitive but are not bound by a prior relationship, evidence in support of this thesis must include information on the consumer's relationship *both* with the seller chosen and the sellers not chosen. In particular, it will be problematic for this thesis if we find that the remodelers whom NARI respondents do not hire are as likely to have prior relationships with those respondents as the remodelers they do hire.

The results in figure 1 begin to speak to these issues. The figure displays the distribution of the number of "professional remodelers" that were "seriously consider[ed by NARI respondents] before deciding on the company ... ultimately hired." Note that "serious consideration" is likely to be defined differently by different respondents and that it likely occupies a midpoint between a cursory search and a stage in which formal bids may be sought.<sup>13</sup> Results indicate that such "serious" consideration sets are quite narrow. In particular, the modal tendency is to consider only one remodeler in a serious fashion; and the majority seriously considers no more than one remodeler in addition to the one that is eventually chosen. Another finding worth noting is that these search

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<sup>13</sup> Clearly, it would be preferable to have information on the full range of search and selection activities. This question wording was settled on because it was thought that respondents would be able to make relatively reliable estimates of the number seriously, as opposed to the number more casually, considered; and because pre-testing of the survey instrument suggested that very few respondents actually obtain formal bids from multiple remodelers.

tendencies are bimodal. Homeowners appear either to search for alternatives or to refrain from search altogether; and if they do search, they tend to consider at least three such alternatives, though typically not more than three, and rarely more than five.<sup>14</sup> Thus even among those who consider many alternatives, search is relatively limited, likely due to the high opportunity costs involved in seriously considering multiple contractors.

#### FIGURE 1 ABOUT HERE

Why do some consumers have larger “serious” consideration sets than others? One factor is the size of the job. Inasmuch as more extensive search activities are perceived by the homeowner as producing bids that are superior on cost and quality, and inasmuch as the perceived opportunity cost of search likely does not increase as sharply, it seems reasonable to expect “actors to use any means... to *search* more intensely for information when the cost of a product or good is high (DiMaggio and Louch 1998: 626).” The results from the NARI data are consistent with this expectation, as indicated in table 10. In particular, the number of contractors seriously considered rises steadily as the budget increases from under \$5,000 to \$20,000-- the range that accounts for 83% of all projects described by homeowners-- and it then appears to taper off. While the size of the budget seems important for determining the number of remodelers considered, a more salient factor is whether the homeowner had a prior relationship with the remodeler. As shown in figure 2, the majority (58%) of respondents who had either a direct or strong indirect relationship with the remodeler they chose did not seriously consider any other remodelers, and this was true for only a quarter (25.7%) of those who had no prior relationship with the remodeler they chose ( $t=6.63$ ). The importance of this factor is also seen in the results from loglinear models (not shown) estimated on a three-way contingency table among the number of remodelers serious considered, having a prior relationship with the remodeler chosen (WNE), and the project budget.<sup>15</sup> While a uniform-association parameter between budget and WNE increases the Likelihood-Ratio  $X^2$  by 14.74 (df=1) from the independence model, the increase due to the inclusion of a uniform-association between the number considered and WNE was 27.37 (df=1).

<sup>14</sup> The second mode at three remodelers may reflect popular advice given to homeowners that they should solicit at least three bids. Thanks to Kathleen McGinn for this observation.

<sup>15</sup> Due to sparse cell counts that hindered estimation, the top categories of the number considered was collapsed at four or more, and the top budget categories were collapsed at \$20,000 or more.

TABLE 10 ABOUT HERE

FIGURE 2 ABOUT HERE

These results carry an important lesson for how we think about the tendency to engage in WNE. In particular, WNE should not be depicted as resulting from the normative rational-choice process whereby a wide array of options are (seriously) considered and the one with whom the consumer has a prior relationship is chosen (see e.g., March 1994). Rather, the use of WNE is more akin to an *opting-out* of the normative model by not seriously entertaining an alternative to the preferred choice. There is a clear sense in which scanning across multiple alternatives for the best service provider is in some sense incompatible with WNE, perhaps because within-network service providers consider it rude to be compelled to compete with rivals. Such an image of WNE seems less consistent with the transaction-costs based model proposed by DiMaggio and Louch (1998) than it is with other sociological accounts of embeddedness in which the mode of behavior within embedded relationships is qualitatively different from that which occurs in arm's-length transactions (e.g., Granovetter 1995; Lincoln, Gerlach, and Ahmadjian 1996; Uzzi 1996; Sgourev and Zuckerman 2004).

Further reinforcement of this lesson is provided when we compare the remodeler chosen by NARI respondents who seriously considered at least two remodelers with "their second choice." As shown in figure 3, it is more common for the first choice to be from within one's network (30.1% vs. 21.8% among those who considered two or more remodelers;  $t=2.96$ ). And respondents who had a choice between a WN remodeler and one who was not were significantly more likely to choose the former (69.4% vs. 30.6%;  $t=2.91$ ). At the same time, the results in figure 3 also indicate that the distribution of the type of relationship for the second choice is quite similar to that for the first choice. Moreover, among those who considered at least two remodelers seriously, 50% of those who had a prior relationship with their first choice also had a prior relationship with their second choice. Together with several findings that we have seen, this result implies that *the explicit rejection of a non-WN seller for a WN seller is a very rare event*. In particular, we have seen that the majority of respondents who choose a WN remodeler do not engage in any serious search. In addition, for the majority (62.8%) of respondents who do consider two or more remodelers seriously, neither the first nor the second choice

is a WN remodeler. Third, respondents who do seriously consider a WN remodeler are almost as likely to decide between two members of their network (N=34 or 41.0%) as they are to decide between a WN contractor and one who is not (N=49 or 59%;  $t=1.66$  for a test of an even division). And finally, just under a third of (N=15 or 31%) of the last set of respondents involve the rejection of a WN remodeler in favor of one with whom the homeowner has no prior relationship. In total, there were only thirty-four respondents (or 9.1% of those who hired a professional remodeler) who selected a WN remodeler over a non-WN remodeler.

#### FIGURE 3 ABOUT HERE

The set of survey items bearing on the context for selection asked respondents who seriously considered only one remodeler about their rationale for not having larger consideration sets. The answers to these questions are of limited value because comparable questions were not asked of respondents who considered multiple remodelers. Yet several interesting patterns emerge in table 11, which presents a cross-classification of the importance attached to five different reasons for considering only one remodeler and whether the respondent engaged in WNE. First, we see that the latter three reasons, the first two of which are based on WNE and the last which is likely based a mix of WNE and search embeddedness, are more important considerations than are the first two, which involve challenges in the search process. That is, the focus is less on the difficulties of finding alternatives than it is with the benefits of the remodeler chosen. Second, we see that, unsurprisingly, the third and fourth factors (personal knowledge of the remodeler and good past experience with the remodeler) are much more important for respondents who engaged in WNE than those who did not. And yet, the difference is much more modest regarding the final factor, which concerns references from trusted third parties. Since such trusted third parties are generally neither friends nor relatives of the remodeler, they seem to reflect search embeddedness rather than WNE. Accordingly, this result reinforces the point made earlier, which is that it is not clear why WNE is an effective instrument for ensuring that sellers will act in a trustworthy manner insofar as search embeddedness (i.e., the use of referrals) is widespread.

#### TABLE 11 ABOUT HERE

Note finally the intriguing result that one-quarter of the respondents who seriously considered but indicated no prior relationship with the remodeler indicated that they “personally [knew] someone who worked with the company” and 53% of these respondents indicated that they had “good experiences in the past” with the remodeler. Overall, 57% of these 54 respondents said that at least one of these factors was important. This is odd inasmuch as these respondents should seemingly have indicated that they had a prior relationship with the remodeler in their answer to the question on WNE. It implies that for some reason, the question on WNE, which was adapted from the 1996 GSS and arguably has a more inclusive definition of WNE because it includes relationships with “any of the people in the company” systematically *underestimates* the extent of WNE. Indeed, if we consider all those with personal knowledge of the remodeler and those who had good past experiences with the remodeler as situations of WNE even if they answered in the negative to the explicit question on WNE, then the proportion WNE among those who seriously considered one remodeler rises from 64% to 85%. This reassignment also increases the proportion of respondents who engaged in WNE from 44% to just one respondent shy of 50%. And since it is likely that at least several respondents who considered more than one remodeler also failed to indicate that they had engaged in WNE, it appears that a majority of the sample did so. To recap, it is unclear why a substantial minority of respondents who seriously considered only one remodeler indicated that they did not engage in WNE when it appears that they in fact did so. At the very least, this finding indicates that future studies should use test variants on the 1996 GSS WNE question to capture the full extent of WNE.

#### Who is Chosen?

*Size of Project.* We now move from the formation of the consumer’s consideration set to why a particular remodeler chosen and why the homeowner might have opted for a WNE remodeler. In particular, we wish to know whether a consumer’s engagement in WNE reflects an effort to limit vulnerability by using her social network to discipline sellers. Two sets of items in the NARI survey help to shed light on these issues. The first consists of the questions that ascertain the size of the project. DiMaggio and Louch (1998) suggest that since consumers feel more vulnerable when their investment is

greater, we should see more WNE for larger projects. Yet the results displayed in figure 4 indicate that the size of the remodeling project does not increase engagement in WNE; if anything, WNE actually *declines* as the size of the project increases. In particular, the mean estimated total cost of remodeling projects that involved WNE was \$12,528.66 vs. \$23,556.37 for projects that did not involve WNE ( $t=2.142$ ,  $p=.03$ , two-tailed).<sup>16</sup> The Mann-Whitney  $Z$  was 1.62 with a  $p$ -value of .105 for ranked comparisons of the two distributions. Note that the association is negative but insignificant if we replace the total cost of the project with the project budget. The implication is that some of the negative association between total cost and WNE reflects a decreased tendency for WNE projects to go over budget. And indeed, engagement in WNE is significantly associated with a greater tendency for the total cost of the project to be greater than the project budget. In particular, while 9% of WNE projects went over budget, this was true of 17.8% of non-WNE projects ( $t=2.21$ ;  $Z= 2.20$ ). We will return to this issue below.

#### FIGURE 4 ABOUT HERE

Thus, while these results cannot be taken as strong evidence that larger projects are associated with *less* WNE, they certainly provide strong disconfirmation for the hypothesis that there is *more* WNE where the investment is larger because consumers feel at greater risk of significant economic loss and engage in WNE to address this vulnerability. That is, the absence of a positive association between WNE and project size means either that consumers do not feel more vulnerable as the project size increases or that WNE is not a uniquely suitable vehicle for addressing this vulnerability. And note how this finding dovetails with our earlier result that the size of the project increases the size of “serious” consideration sets but that homeowners who engaged in WNE tended to consider seriously only a single remodeler. The implication is that the factors that lead consumers to invest more resources in the selection of a good seller are distinct, and perhaps at odds with, the factors that lead to greater engagement in WNE.

*Reasons for Choice.* The second set of survey items that shed light on the choice of remodeler consists of thirteen different reasons, including that this remodeler was more

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<sup>16</sup> The mean values for total cost and budget (see below) were constructed using the coding scheme presented in tables 9 and 10.

“trustworthy,” that respondents could give for why they chose their remodeler. In figure 5, We display the percentage of respondents who strongly agreed that each of the thirteen descriptions of the remodelers that they chose.<sup>17</sup> We have also divided the sample between those who engaged in serious search and those who considered only one remodeler seriously since we have already seen that there are distinct differences in these two modes of selection. Several patterns in this figure command attention. First, we gain confirmation that the issue of trustworthiness is very important. All but ten of the 365 respondents who answered the question overwhelmingly agreed (299 or 82% strongly so) that the remodeler they chose was the “most trustworthy.” One might go so far as to say that being the most trustworthy remodeler known to the homeowner is a necessary if insufficient condition for being hired. Conversely, homeowners appear to be relatively price-insensitive (58% agreement; 28% strong agreement), a finding that is consistent with remodelers’ tendency to report that they avoid selling on the basis of price (Zuckerman and Sgourev 2002, 2003). Respondents also do not place much value on the remodeler’s affiliation with industry associations, and relatively little on the age of the firm or its professional certifications. There are also some noteworthy differences in the traits emphasized by respondents who considered one remodeler versus those respondents who engaged in more search. In particular, remodelers who seriously considered at least two remodelers were significantly less likely to emphasize the chosen remodeler’s personality (*Mann-Whitney*  $Z=2.21$ ).<sup>18</sup> Somewhat less significant was such respondents’ tendency to place less emphasis on trustworthiness ( $Z=1.44$ ) and the quality of the remodeler’s advice ( $Z=1.52$ ).

#### FIGURE 5 ABOUT HERE

While the trustworthiness of the remodeler is clearly a key consideration in the selection of a remodeler, it remains to be seen how this factor relates to engagement in WNE. Note that since the majority of respondents did not engage in WNE and the vast majority of respondents strongly agreed that the remodeler they selected was the most trustworthy, it follows that variation in perceived trustworthiness is not a good candidate

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<sup>17</sup> Since the majority of respondents indicate at least modest agreement with every one of the thirteen items, the most salient variation lies in the extent to which the respondent strongly agreed with the item.

<sup>18</sup> Respondents were also significantly less likely to emphasize the remodeler’s capabilities ( $Z=2.08$ ) and its professional certifications ( $Z=2.02$ ); and significantly more likely to emphasize the remodeler’s industry associations ( $Z=2.04$ ).

for explaining WNE. Indeed, while trustworthiness seems very important, it does not appear that respondents encounter difficulty finding remodelers that they deem trustworthy. Or, to put the matter more conservatively, respondents even if WNE is a good mechanism for ensuring trustworthy behavior, it is at possible to substitute this mechanism with alternatives. The finding presented above, that a failure to find trustworthy remodelers is not an important factor behind DIY, seems consistent with this interpretation. The patterns in table 12 speak directly to the relationship between WNE and the trustworthiness of the remodeler. We see that WNE is at least modestly associated with a lower price; a higher level of service; having a good reputation; being more capable; not being affiliated with industry associations; trustworthiness; offering good advice; and having a good personality. The last three differences are statistically significant (for trustworthiness:  $t=2.231$ ; *Mann-Whitney*  $Z=2.219$ ; for advice,  $t=2.227$  and  $Z=2.215$ ; for personality,  $t=3.186$  and  $Z=3.146$ ).

#### Table 12 ABOUT HERE

That WNE remodelers are seen as more trustworthy could be interpreted as consistent with the idea that WNE is used by consumers to discipline sellers. However, there are three reasons to be cautious in venturing such an interpretation. First, as we see in table 12, the association between trustworthiness and WNE is quite modest (and insignificant) for respondents who seriously considered more than one remodeler. By contrast, the quality of advice and the remodeler's personality remain quite significant. Thus, if respondents place more trust in WN remodelers, it does not seem to be based on a comparison among alternative remodelers followed by a selection of the remodeler that can be disciplined most readily. Rather, any such extra trustworthiness is confined to the case in which only one remodeler is seriously considered. Moreover, while there is a nearly significant difference in such cases, even this difference is completely eliminated if we included as having engaged in WNE those respondents who said that "personal knowledge" of someone in the remodeler's firm or "good past experiences" with the remodeler. Finally, when we move from these bivariate analyses to the the multivariate logit models presented in table 13, we see that trustworthiness is not the factor that is most associated with WNE. Rather, WNE is slightly more associated with offering good advice and significantly more associated with having a good "personality." Indeed, as we

see in the first three models, neither trustworthiness nor the quality of advice has a significant association with WNE once we control for the remodeler's personality. Thus, the significant bivariate association between trustworthiness and WNE seems largely a spurious reflection of the association between WNE and the remodeler's personality.

TABLE 13 ABOUT HERE

And note from model 4 in table 4, that while respondents who seriously considered multiple remodelers were more likely to focus on the remodeler's personality, and such search is negatively associated with WNE, the association between WNE and a focus on personality remains significant even when we control for the number of remodelers considered. Indeed, we see in model 5 that the issue of personality is *particularly* salient among those respondents who compared among multiple remodelers. In particular, this model indicates that, for respondents who considered at least two remodelers seriously, the estimated probability of having a prior relationship with the chosen remodeler increases from 6.88% for those who disagree strongly that the chosen remodeler had the "best personality" to 39.63% for those who strongly agreed. And finally, we see that this emphasis on the remodeler's personality remains significantly associated with WNE even when we define WNE as consisting of relatives, and direct friends and acquaintances. When faced with such a choice, respondents attributed their selection of a WNE remodeler primarily to their perception that the remodeler had an attractive personality. In this case, the increase in the estimated probability of having such a relationship increased from 1.02% for those who strongly disagreed that the chosen remodeler had the best personality to 20.41% who strongly agreed. In sum, while WN remodelers do not to be distinguished by their apparent trustworthiness, they are sharply distinguished among those respondents who seriously considered more than one remodeler as having particularly attractive "personalities."

TABLE 4 ABOUT HERE

WNE and Satisfaction

Before considering more fully the implication of the result that WN remodelers are most distinct in terms of the attractiveness of their personalities, we examine the final aspect of consumer embeddedness on which the NARI survey data help shed light: the homeowner's level of satisfaction with the remodeling project and whether this is

affected by WNE. In their pioneering analysis of consumer embeddedness, DiMaggio and Louch (1998: 633) show that consumers who engage in WNE should be more satisfied (DiMaggio and Louch 1998: 633), a result that they attribute to the effectiveness of WNE in mitigating malfeasance. And analysis of the NARI data also reveals that a positive association between WNE and satisfaction. Almost all (96.5%) of NARI project said they were satisfied or very satisfied with the project, and respondents who engaged in WNE were indeed more likely to be in the latter category (91.3%) than were those who did not engage in WNE (83.2%;  $t=2.29$ ). In addition, we saw earlier that WN projects were significantly less likely to go over budget. These results would seem to suggest that, while WN remodelers may not be particularly distinct in their trustworthiness during the selection process, that they are reveal themselves to be more trustworthy perhaps because homeowners are able to use their common networks to discipline their behavior.

While this interpretation is plausible, it does not sit easily with several other patterns in the data. Consider the set of logit models presented in table 14, which estimate the impact of a series of covariates on the log-odds of a respondent reporting that she was “very satisfied” with the remodeling project. While the first model indicates that respondents are significantly more likely to be very satisfied with WN projects, the second and third models indicate that this association is at least partly a spurious reflection of the *negative association between the number of remodelers considered and the likelihood of being very satisfied*. This association is itself a noteworthy finding that dovetails with recent work by Iyengar and colleagues (Iyengar and Lepper 2000; Iyengar and Jiang 2004) that shows that, contrary to normative models of choice, people often make poorer decisions when they entertain more options.

#### TABLE 14 ABOUT HERE

Another basis for doubting the interpretation is indicated in model 4. Here, we see that if indeed WN remodelers are less likely to go over budget, this association is not responsible for the positive association between WNE and the likelihood of being very satisfied. In particular, we see little attenuation in the effect of WNE from model 1 to model 4 despite the introduction of an indicator for whether the project went over budget. Note as well from the final model in this table that going over budget appears to be a poorer predictor of dissatisfaction as is going over the forecasted time. But while WN

projects are indeed significantly more likely to go over budget, they are in fact more likely to go over time: 38.24% vs. 31.15% ( $t=1.32$ ;  $p=.19$ , two-tailed;  $p=.09$ , one-tailed). Note finally that, just as respondents who seriously considered only one remodeler were more likely to say that the remodeler chosen was the most trustworthy when the respondent had a prior relationship with the remodeler, these respondents were also more likely to say that the remodeler “acted in good faith or in a trustworthy manner” during the course of the project (90% strong agreement vs. 90% for those with no prior relationship;  $t=1.61$ ,  $p=.06$ , one-tailed). Yet as before, this difference disappears when those respondents who said they “personally [knew] someone” at the remodeler’s company or that they had “good [past] experiences” are coded as having engaged in WNE even if they did not indicate this in their answer to the GSS WNE question (87% vs. 81%;  $t=0.75$ ;  $p=.23$ , one-tailed). Thus, while there is some empirical support for asserting that WN remodelers acted in a more trustworthy fashion, as perceived by respondents who seriously considered only one remodeler, this evidence is rather thin.

A final outcome that merits attention is whether the respondent reported that the project faced “barriers or problems in completing the job.” Such problems were reported on 14.25% of projects, with only a slight difference between WN projects (13%) and non-WN projects (14.8%;  $t=0.51$ ). Yet when respondents were asked “how well the remodeler communicate[d] these problems” to the respondent, those who engaged in WNE were significantly more likely to say that the remodeler communicated the problem “somewhat well” or “very well” (76.2% vs. 58.1%; *Mann-Whitney*  $Z=2.00$ ).

### Discussion

Before discussing the foregoing findings in greater detail, it is worth highlighting the strengths and the limitations of the present study. Perhaps the main strength is that our analysis has shed new light on the broader context that frames the consumer’s selection of a seller, from the decision of whether to hire any service-provider to the consideration set from which the service-provider is selected. We know of no prior research that gives comparable insight into the size or composition of such consideration sets in the manner afforded by the NARI survey. Yet there is a great deal more that one should wish to know about the manner by which consumers search and consider sellers. For instance,

while the focus here has been on the number of remodelers “seriously considered,” it would be enlightening to know more about the full search process, including those sellers considered more cursorily and those from whom bids were solicited. And while the NARI survey affords a first look at the relationship that consumers had with their second choice, the picture remains incomplete without comparable information on the other remodelers (seriously) considered, and well as the larger social network that surrounds the individual (which might include direct or indirect ties to sellers who are not considered at all).

Similarly, while the NARI survey allows us to associate WNE with a series of items that shed new light on the rationale for the selection of the seller, these items suffer from at least two problems. First, a difficulty that is shared by the NARI survey and the 1996 GSS is that the questions are asked retrospectively about a project that has already been completed. While there is some indication that respondents distinguish between their thinking during the selection stage and their post-project evaluation,<sup>19</sup> it seems highly unlikely that the project experience does not color the respondent’s recollection of his behavior during the selection phase, at least to a certain extent. For instance, it is possible that respondents describe the remodeler they chose as “most trustworthy” in relation to other remodelers they were considering because the remodeler in fact acted in a trustworthy fashion during the project. At the same time, it is not clear why such a retrospective bias would cause the issue of trustworthiness to become less salient in distinguishing WN from non-WN remodelers than is the remodeler’s personality.

In addition to the issue of biased recall, future work would do well to consider variations on the questions used here and in the 1996 GSS. We have seen that the 1996 GSS question produced a very similar pattern of estimates concerning engagement in WNE for home remodeling. This provides confidence that the measure achieves a certain degree of reliability. Yet based on the responses to the questions concerning the rationale for considering only one remodeler, we have seen strong indications that the measure likely understates the degree of WNE. There is also reason to consider variations on at least two items that are important in the present discussion: the trustworthiness of the

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<sup>19</sup> Just over one in every five respondent (21%) changed their level of agreement to the question of whether they chose their remodeler because he was “most trustworthy” and whether the remodeler “acted in good faith or in a trustworthy manner.”

seller and the seller's personality. We discuss the latter below. Regarding the former, it would be useful to more carefully unpack what consumers mean by trustworthiness. For instance, our discussion has implicitly collapsed two distinct aspects of trust—what might be called “operative trust,” or the extent to which I rely on you because I know you will be punished for malfeasance, and “faithful trust,” or the extent to which my faith in your unwillingness to harm me is so strong that I do not concern myself with such discipline (see Granovetter 1985: 489; Granovetter 1999: 160; cf., Uzzi 1996). We have assumed that idiomatic American speech does not distinguish between these two concepts in their and so, we should expect that a greater ability to discipline a seller should increase the likelihood that the buyer reports that she regards the seller as “trustworthy.”<sup>20</sup> This interpretation seems supported by the very high rates of trustworthiness that NARI respondents attribute to the remodelers they chose. It seems likely that many of these respondents are not describing a situation of faithful trust, though this may be more common among the minority whose remodelers are close kin or friends. Indeed, insofar as such cases contribute to a positive association between WNE and the extent to which the remodeler is viewed as “trustworthy,” it may be that we have *overstated* the extent to which WNE is an effective instrument of social control in the production of operative trust.

Finally, it merits highlighting the limitations of the NARI survey, particularly insofar as one should wish to use it to make inferences about U.S. consumers in general. We have seen that the NARI sample is *not* representative of all U.S. consumers, and not even of all U.S. homeowners. In particular, while the similarity in the distribution of WNE in the NARI data and in the 1996 GSS provides considerable confidence that the results have potentially wide applicability, they should be regarded as representative of a slice of American homeowners who are wealthier, older, and perhaps more rural than is typical. Moreover, the results pertain only to a single type of transaction. And while again the similarity with results for other transactions in the 1996 GSS suggests broader applicability, it is unknown how generalizable are the findings reported here.

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<sup>20</sup> Even scholars who are explicit about distinguishing operative trust from faithful trust are apt to use the term “trustworthy” interchangeably. Indeed, while Granovetter (1985: 489) calls operative trust “a functional substitute” for faithful trust, he then describes exchange partners as having a “an economic motivation to be trustworthy” if they have “a continuing relation” with one another (Granovetter 1985: 490).

### Conclusions

Given the limitations of the present study and the state of research into consumer embeddedness generally, our conclusions must necessarily remain preliminary. We would like to highlight three sets of findings, however, that are robust in the NARI data and which should help guide future studies of consumer embeddedness, and perhaps social embeddedness more generally. First, we have seen that (serious) consideration sets appear to be quite small and particularly when the homeowner has a relationship with the (chosen) remodeler. More generally, *engagement in within-network exchange tends not to involve an explicit choice but reflects an opting-out of the normative model of choice by not seriously entertaining an alternative to the preferred choice*. And as discussed above, there appear to be two mechanisms behind the failure to consider alternatives to the WN seller. The first involves the social constraint posed by close kin and perhaps some friends. If one's brother or cousin provides the service that one needs, does one really have the option of going elsewhere? Note that this observation reverses the social logic invoked by DiMaggio and Louch (1998). That is, it may often be that the buyer is "held hostage" to the social network that is common to both buyer and seller.<sup>21</sup> A second factor in the curtailment of (serious) search seems to follow a satisficing logic. Having had a good experience with a seller in the past, buyers tend not to look any further. Note finally that, due to the negative association between consideration-set size and WNE, and since consumers who have a tie to a seller in a particular industry are more likely to have multiple such ties, we have found that *it is very rare for to face a choice between a WN seller and a non-WN seller*; and because not all consumers (only 69% in the present case) opt for the WN seller, *it is still rarer for the choice of the seller to have resulted from the choice of a WN seller over a non-WN seller* (only 9.1% in the present study).

Our second set of results pertains to DiMaggio and Louch's (1998) thesis that WNE is an instrument used by the consumer to discipline sellers. The evidence from the NARI survey casts considerable doubt on this interpretation. In particular, we have seen that while more costly projects should seem to increase the consumer's sense of vulnerability, these projects are not more likely—and in fact, tend to be slightly less

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<sup>21</sup> Note that network marketing is explicitly predicated on this premise (see Biggart 1990).

likely—to be transacted with a WN seller. In addition, while the issue of trustworthiness appears to be paramount in the homeowner’s rationale for selecting a remodeler, trustworthiness does not significantly distinguish WN sellers from non-WN sellers, particularly among those respondents who chose among more than one seller. In sum, *the evidence is inconsistent with an understanding of within-network exchange that sees it as a distinctive mechanism for producing trustworthy behavior on the part of sellers.* At the same time, WNE may be one of a set of available mechanisms for effecting such social control. That is, although many homeowners seem to have succeeded in satisfying their desire for trustworthy performance through means other than WNE, this does not mean that that WNE is not an effective instrument in this regard, or even the instrument that is cheapest. It may be that consumers who have relationships with sellers in a particular industry engage in WNE as a way of ensuring trustworthy behavior but that consumers who lack such ties are forced to use substitutes such as searching through referral networks (“search embeddedness”) or more generalized reputations.<sup>22</sup> At the same time, that these alternatives seem to be readily available means that WNE seems not to be that *distinctive* as a mechanism for the production of operative trust.

Finally, we have seen that while WN sellers are not distinguished by their trustworthiness, they do appear to be distinctive in having appealing “personalities,” especially for those homeowners who had a choice among multiple remodelers. What does it mean that the attractiveness of a remodeler’s “personality” is what most distinguished WN from non-WN remodelers? A deeper understanding of this issue must await future study where the notion of personality can be further unpacked. For the moment, we would like to stress two potential implications. First, the dimension of “personality” appears to reflect sentiment on the part of homeowners that forming an effective basis for communication is something that is more effectively achieved when there is a prior relationship. When an American says that another person’s personality is appealing to them, it suggests that they connect (or “click” in the language of one respondent, who responded to the open-ended question on the choice of remodeler) in a way that is somewhat unique or rare. The finding that WN remodelers communicated

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<sup>22</sup> Thanks to Ravi Singh for this observation.

problems during the course of the project more effectively than non-WN remodelers supports this view.

Second, the emphasis on “personality” carries an important lesson regarding the substitutability among sellers in general, and service-providers in particular, in the market. According to the neoclassical view of the market, all producers are exchangeable in that they have the same production function. According to this characterization, all remodelers are basically the same in the service they provide. But the emphasis on relationships as a means for distinguishing a remodeler’s personality suggests a very different view of the matter, one which is consistent with more heterodox views of markets and competition, which allow for persistent differences between enterprises due to initial endowments and unique histories (see e.g., Teece, Rumelt, Dosi, and Winter 1994). According to this view, heterogeneous buyers face off against heterogeneous sellers and the challenge is to find a good match and avoid poor ones. While referrals (“search embeddedness”) is likely an effective tool in culling through such matches, a personal relationship or strong indirect tie may be particularly valuable in arriving at a good match. Thus, the emerging picture of consumer embeddedness, at least in the case of service-providers and perhaps especially in the case of home remodelers, appears to be less about the use of relationships as a tool for enforcing discipline as it is about customizing market exchanges to meet idiosyncratic needs and desires.

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Table 1:  
 Comparing Educational Achievement in 2002 General Social Survey with 2004 NARI Survey

Number of Adults in Household	<i>Percent with the Specified Number of Adults in Household</i>		
	2002 General Social Survey, Full Sample	2002 General Social Survey, Homeowners	2004 NARI Survey, Full Sample (Homeowners)
1	37.87%	28.89%	3.59%
2	49.33%	54.44%	77.29%
3	9.33%	12.59%	13.55%
4	2.71%	2.96%	5.18%
5	0.76%	1.11%	0.2%
6	37.87%	0%	0.2%
N=	2,765	540	502

Table 2 Comparing Household Income in 2002 General Social Survey with 2004 NARI Survey						
<i>Percent with the specified level of Income</i>						
Income Category, NARI Survey	Coding for calculation of means <sup>1</sup>	2002 GSS, Full Sample	2002 GSS, Homeowners Only	2004 NARI, Full Sample (Homeowners)	2002 GSS, Homeowners 2 Adults in Household	2004 NARI, (Homeowners) 2 Adults in Household
Less Than \$30k	\$12k	38.44%	24.74%	15.77%	15.96%	10.67%
\$30k-50k	\$40k	23.06%	21.78%	18.56%	19.71%	18.90%
\$50k-75k	\$61k	17.75%	21.77%	26.75%	25.29%	27.74%
\$75-\$100k	\$87k			21.16%		24.09%
\$100k-\$150k	\$125k			11.38%		12.20%
\$150k-\$300k	\$225k			4.99%		4.88%
\$300k-\$500k	\$400k					
\$500k-\$1m	\$750k			0.80%		0.91%
\$1m-\$2m	\$1.5m			0.40%		0.30%
\$2m+	\$2.5m			0.20%		0.30%
\$75k+		20.75%	31.70%	38.93%	39.03%	42.68%
	Mean=	\$53,359	\$67,814	\$78,671	\$76,483	\$83,720
		N=2,463	N=473	N=501	N=269	N=328

<sup>1</sup> The GSS categories are more fine-grained at lower income levels and the NARI categories are more refined at upper income levels. The coding for mean values for the first three categories are based on mean values estimated from homeowners in the 2002 GSS sample taken using midpoints for the income ranges. The coding for the income ranges at \$75k and above are derived from midpoints of those ranges. The GSS mean for the range of \$75k-\$110k is derived from its midpoint and the mean for the top-coded category of \$110k+ is derived from the mean for the NARI income range of \$100k+ (\$194,944) with a slight adjustment downwards (to \$200,000) because this range begins at a slightly higher income level.

Table 3 Comparing Educational Achievement in 2002 General Social Survey with 2004 NARI Survey						
		<i>Percent with the specified level of education</i>				
Category from 2004 NARI Survey	Corresponding Category from 2002 GSS	2002 GSS, Full Sample	2002 GSS, Homeowners Only	2004 NARI, Full Sample (Homeowners)	2002 GSS, Homeowners 2 Adults in Household	2004 NARI, (Homeowners) 2 Adults in Household
Less Than HS, No Diploma	0-11 yrs	15.55%	13.95%	4.06%	12.28%	3.63%
High School Diploma or GED	12 yrs	29.71%	32.9%	28.93%	33.79%	27.72%
Some College, No Degree/Associate	13-15 yrs	28.92%	23.98%	35.88%	23.89%	35.49%
Bachelors	16 yrs	13.69%	15.06%	18.61%	16.38%	20.21%
Masters (MA, MS, MBA, MEd)	17-18 yrs	8.03%	8.73%	9.98%	8.19%	10.62%
Doctorate (Phd, EDd) Or Professional (MD, JD, DDS)	19+ yrs	4.1%	5.39%	2.54%	5.46%	2.33%
		N=2,755	N=538	N=591	N=293	N=386

Table 4: Comparing Age Distribution in 2002 General Social Survey with 2004 NARI Survey					
	<i>Age at each Percentile of the Age Distribution</i>				
Percentile of Age Distribution	2002 GSS, Full Sample	2002 General Social Survey, Homeowners	2004 NARI Survey, Full Sample (Homeowners)	2002 GSS, Homeowners 2 Adults in Household	2004 NARI, (Homeowners) 2 Adults in Household
10 <sup>th</sup>	25	27	35	30	34
25 <sup>th</sup>	32	37	43	36	43
50 <sup>th</sup>	44	48	53	48	53
75 <sup>th</sup>	59	63	65	61	64
90 <sup>th</sup>	72	74	76	73	72
	N=2,751	N=536	N=578	N=292	N=379

Table 5: Comparing Population Density of Residence in 2002 General Social Survey with 2004 NARI Survey						
<i>Percent with the Specified in Each Density Zone</i>						
Category from 2004 NARI Survey	Corresponding Category from 2002 GSS	2002 GSS, Full Sample	2002 General Social Survey, Homeowners	2004 NARI Survey, Full Sample (Homeowners)	2002 GSS, Homeowners 2 Adults in Household	2004 NARI, (Homeowners) 2 Adults in Household
Urban	City (50,000+, including unincorporated areas)	36.31	29.44	19.56	25.51	20.21
Suburban	City (10,000-50,000), Suburb	45.61	47.78	41.65	50.34	39.64
Rural	Smaller Areas, Open Country	18.08	22.79	38.79	24.14	40.16
		N=2,765	N=540	N=593	N=294	N=386

**Table 6**  
**Distribution of Within-Network Exchange (WNE) for Home Maintenance in 1996 GSS and Home Remodeling in 2004 NARI Survey**

	N	Relative (including in-laws)	Friend or Acquaintance	Strong Two- Step Tie <sup>1</sup>	Someone you've done business with	No Relationship	WNE
Home Maintenance (1996 GSS)	547	3.30%	16.80%	7.10%	11.90%	60.90%	39.10%
Home Maintenance (1996 GSS, homeowners only)	310	3.87%	16.45%	5.16%	13.23%	61.29%	38.71%
Home Remodeling (2004 NARI)	372	5.36%	18.28%	11.83%	8.33%	56.18%	43.82%

<sup>1</sup> The category for the 1996 GSS was “A friend of a friend or relative, or a relative of a friend.” The category in the NARI survey was “A friend of a friend” but survey-takers were instructed to probe that this included “friends of relatives, or relatives of friends.”

Table 7 Rating of Importance of Reasons for DIY, 2004 NARI Survey							
<i>“How important are the following reasons in your decision to do the work yourself?”</i>							
	Expense of hiring someone	Enjoy doing the work yourself	Difficulty of finding a remodeler who...	Does high quality work	Within my budget	Who is reliable	Who is trustworthy
Very Important	58.71%	77.95%	23.66%	35.27%	32.95%	32.43%	
Somewhat Important	15.53%	13.31%	13.36%	13.57%	12.79%	12.36%	
Not Very Important	6.44%	4.18%	11.07%	7.75%	10.85%	8.49%	
Not at all important	19.32%	4.56%	51.91%	43.41%	43.41%	46.72%	
N=	264	263	262	258	258	259	

Table 8 Total Cost of the Project <sup>1</sup> by DIY or Professional				
		All Projects	DIY Projects	Professional Projects
Category:	Coding for calculating mean values:	Frequency	Frequency	Frequency
Under \$5k	\$4k	50.95%	62.75%	41.72%
\$5k-\$10k	\$7,500	23.75%	18.43%	27.91%
\$10k-\$20k	\$15k	10.67%	9.02%	11.96%
\$20k-\$30k	\$25k	5.34%	3.14%	7.06%
\$30k-\$50k	\$40k	4.13%	4.71%	3.68%
\$50k-\$100k	\$75k	3.44%	1.96%	4.60%
\$100k-\$200k	\$150k	1.03%		1.84%
\$200k-\$500k	\$350k	0.52%		0.92%
\$500k+	\$600k	0.17%		0.31%
	Mean=	\$15,377	\$9,382	\$20,083
		N=581	N=255	N=326

<sup>1</sup> The question wording was: “Was the total cost of the project...? (You can stop me at any point.)”

Table 10 Number Considered by Size of Professional Remodeling Budget <sup>1</sup>					
		Number Considered			
Category:	Coding for calculations of mean:	Frequency	Mean	Median	Percent Considered 2+
Under \$5k	\$4k	43.31%	2.09	2.00	0.51%
\$5k-\$10k	\$7,500	25.16%	2.32	2.00	0.68%
\$10k-\$20k	\$15k	14.33%	2.60	3.00	0.71%
\$20k-\$30k	\$25k	5.41%	3.18	3.00	0.71%
\$30k-\$50k	\$40k	5.41%	2.82	3.00	0.82%
\$50k-\$100k	\$75k	3.18%			
\$100k-\$200k	\$150k	1.59%			
\$200k-\$500k	\$350k	1.27%			
\$500k+	\$600k	0.32%			
\$50k+		6.36%	2.89	3.00	0.67%
Mean=					
		N=314			

<sup>1</sup> The question wording for the budget question was “When the remodeler first began the project, how much did you think it would cost? (You can stop me at any point. Was it...?).”

Table 11 Reasons for Not Seriously Considering More Than One Remodeler by Whether Engaged in Within-Network Exchange, 2004 NARI Survey			
	<i>"Difficult to Find Good Remodelers"</i>		
Importance	Not WNE	WNE	Total
Very	19.23%	19.78%	19.58%
Somewhat	15.38%	10.99%	12.59%
Not very	19.23%	7.69%	11.89%
Not at all	46.15%	61.54%	55.94%
	N=52	N=91	N=143
	<i>"Difficult to find available remodelers"</i>		
Importance	Not WNE	WNE	Total
Very	13.46%	11.83%	12.41%
Somewhat	13.46%	7.53%	9.66%
Not very	17.31%	11.83%	13.79%
Not at all	55.77%	68.82%	64.14%
	N=52	N=93	N=145
	<i>"You Personally know someone who works within the company"</i>		
Importance	Not WNE	WNE	Total
Very	22.64%	81.72%	60.27%
Somewhat	1.89%	8.60%	6.16%
Not very	22.64%	1.08%	8.90%
Not at all	52.83%	8.60%	24.66%
	N=53	N=93	N=146
	<i>"You have had good experiences in the past (with this remodeler)"</i>		
Importance	Not WNE	WNE	Total
Very	45.28%	76.60%	65.31%
Somewhat	7.55%	6.38%	6.80%
Not very	7.55%	2.13%	4.08%
Not at all	39.62%	14.89%	23.81%
	N=53	N=94	N=147
	<i>"Someone you trust gave a good reference (for this remodeler)"</i>		
Importance	Not WNE	WNE	Total
Very	73.58%	80.65%	78.08%
Somewhat	1.89%	6.45%	4.79%
Not very	5.66%	4.30%	4.79%
Not at all	18.87%	8.60%	12.33%
	N=53	N=94	N=146

Table 12  
Percent Engagement in WNE by Strong and Lesser Agreement with Eight Reasons for Selecting the Chosen Remodeler and Stratified by Whether Considered Multiple Remodelers, 2004 NARI Survey

	<i>Percent Within-Network Exchange</i>					
	Full Sample		Considered 1 <sup>1</sup>		Considered 2+	
	Strongly Agree	Less Agreement	Strongly Agree	Less Agreement	Strongly Agree	Less Agreement
<i>The Chosen Remodeler...</i> Had the lowest price	51.02%•	40.00%	75.00% (91.67%)	60.64% (85.11%)	37.70%•	27.10%
Had the highest level of service	45.07%	38.55%	63.96% (86.49%)	64.71% (82.35%)	33.14%•	20.41%
Had the best reputation and referrals	47.01%	40.00%	66.00% (91.00%••)	60.53% (73.68%)	32.58%	30.26%
Was the most trustworthy	46.82%••	31.82%	67.48%• (86.18%)	47.62% (80.95%)	32.37%	25.00%
Had the best personality	50.75%••	33.99%	64.44% (85.56%)	62.00% (86.00%)	40.19%••	20.39%
Offered the best advice	48.37%••	36.55%	68.89% (86.67%)	56.86% (84.31%)	33.61%	25.53%
Was affiliated with industry associations	38.27%	45.86%	66.67% (83.33%)	64.62% (86.15%)	26.79%	32.61%
Seemed the most capable	46.35%	37.08%	65.79% (87.72%)	61.54% (84.62%)	32.48%	27.42%
	N=348 <sup>2</sup>		N=130		N=216	

•• p ≤ .05, two-tailed t-test

• p ≤ .10, two-tailed t-test

<sup>1</sup> Percentages in parentheses as WNE respondents who said that “personal knowledge” of the remodeler or “good past experience” with the remodeler were important factors in why they considered only one remodeler (see table 11).

<sup>2</sup> The number of observations is based on the valid cases for the first item (“The chosen remodeler had the lowest price”). Most of the items had slightly more valid cases, though the penultimate item (“Was affiliated with industry associations”) has considerably fewer cases, as shown in figure 5.

Table 13 Logit Models of Whether Engaged in Within-Network Exchange, 2004 NARI Survey						
	Whether Any WNE					Whether Strong Direct Tie
Covariates	Model 1 B (Std. Err)	Model 2 B (Std. Err)	Model 3 B (Std. Err)	Model 4 B (Std. Err)	Model 5 B (Std. Err)	Model 6 B (Std. Err)
Agree that remodeler...						
“Was most trustworthy”	0.571** (0.241)	0.370 (0.266)	0.246 (0.272)	0.182 (0.288)	0.151 (0.299)	0.061 (0.377)
“Offered best advice”		0.323** (0.167)	0.237 (0.174)	0.214 (0.183)	0.239 (0.187)	0.387 (0.235)
“Had best personality”			0.306** (.150)	0.309** (.156)	-0.000 (.218)	-0.047 (.220)
Seriously Considered 2+ Remodelers				-1.403** (0.238)	-3.714** (1.144)	-4.589** (1.602)
Personality*Considered 2+					0.667** (0.319)	0.908** (0.434)
Constant	-2.407** (0.927)	-2.791** (0.963)	-3.053** (.988)	-1.913* (1.045)	-0.824 (1.189)	-1.864 (1.411)
-2* Log-likelihood	494.67	479.14	460.94	420.20	415.53	339.72
Pseudo-R <sup>2</sup>	0.013	0.021	0.029	0.107	0.117	0.110
N=	365	357	346	343	343	343

\*\* p ≤ .05

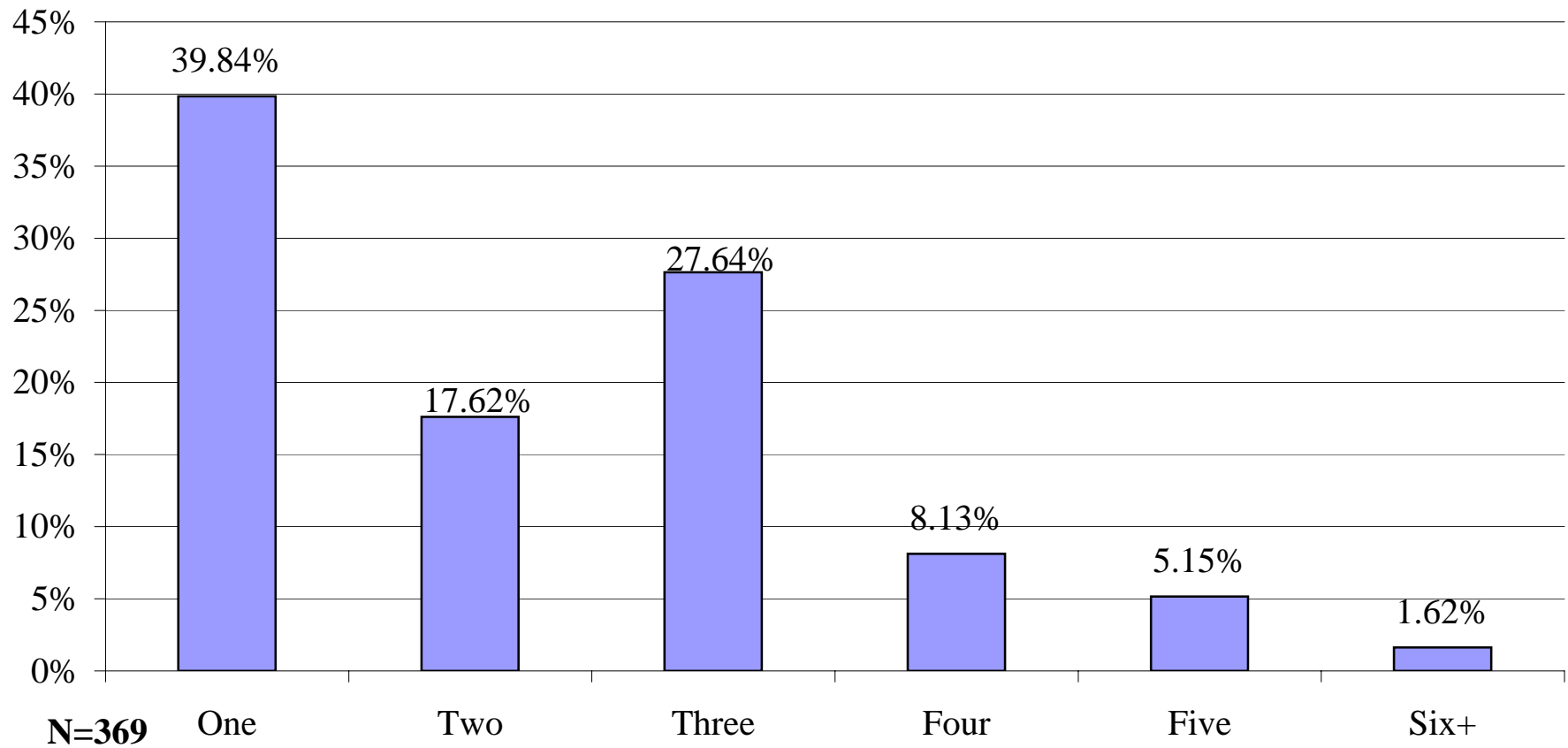
\* p ≤ .10

Table 14 Logit Models of Whether “Very Satisfied” with the “Project Overall”, 2004 NARI Survey					
Covariates	Model 1	Model 2	Model 3	Model 4	Model 5
	B (Std. Err)	B (Std. Err)	B (Std. Err)	B (Std. Err)	B (Std. Err)
WNE	0.773** (0.335)		0.542 (0.353)	0.686** (0.382)	0.633• (0.355)
Number Remodelers Considered		-.334** (0.139)	-.266• (0.146)		
Went Over Budget				-0.678• (0.378)	
Went Over Time					-1.155** (0.336)
Constant	1.598** (0.185)	2.665** (0.378)	2.305** (0.437)	1.593** (0.214)	2.083** (0.261)
-2* Log-likelihood	283.63	278.27	275.82	256.07	240.67
Pseudo-R <sup>2</sup>	0.019	0.021	0.029	0.029	0.056
N=	369	365	365	310	316

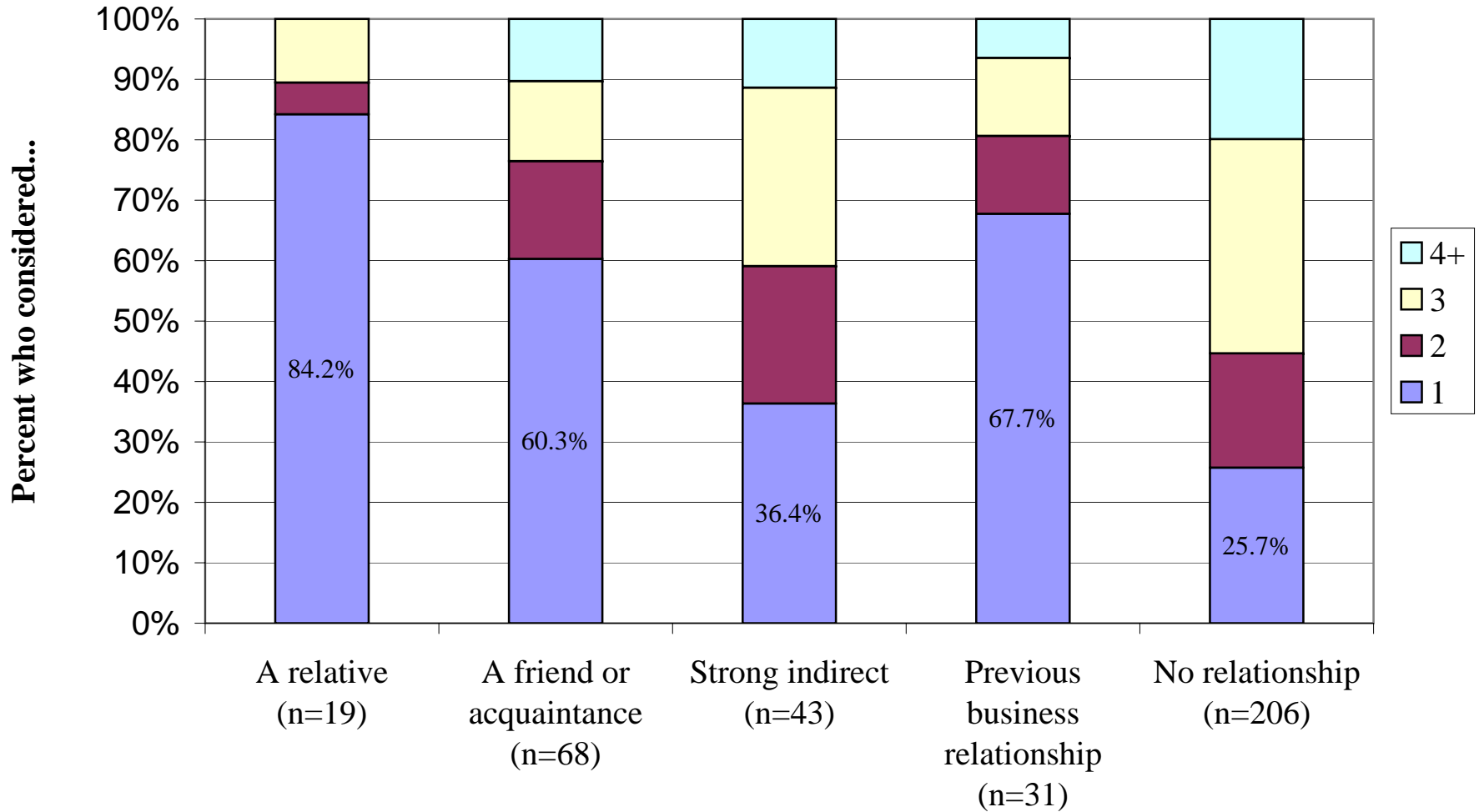
•• p ≤ .05

• p ≤ .10

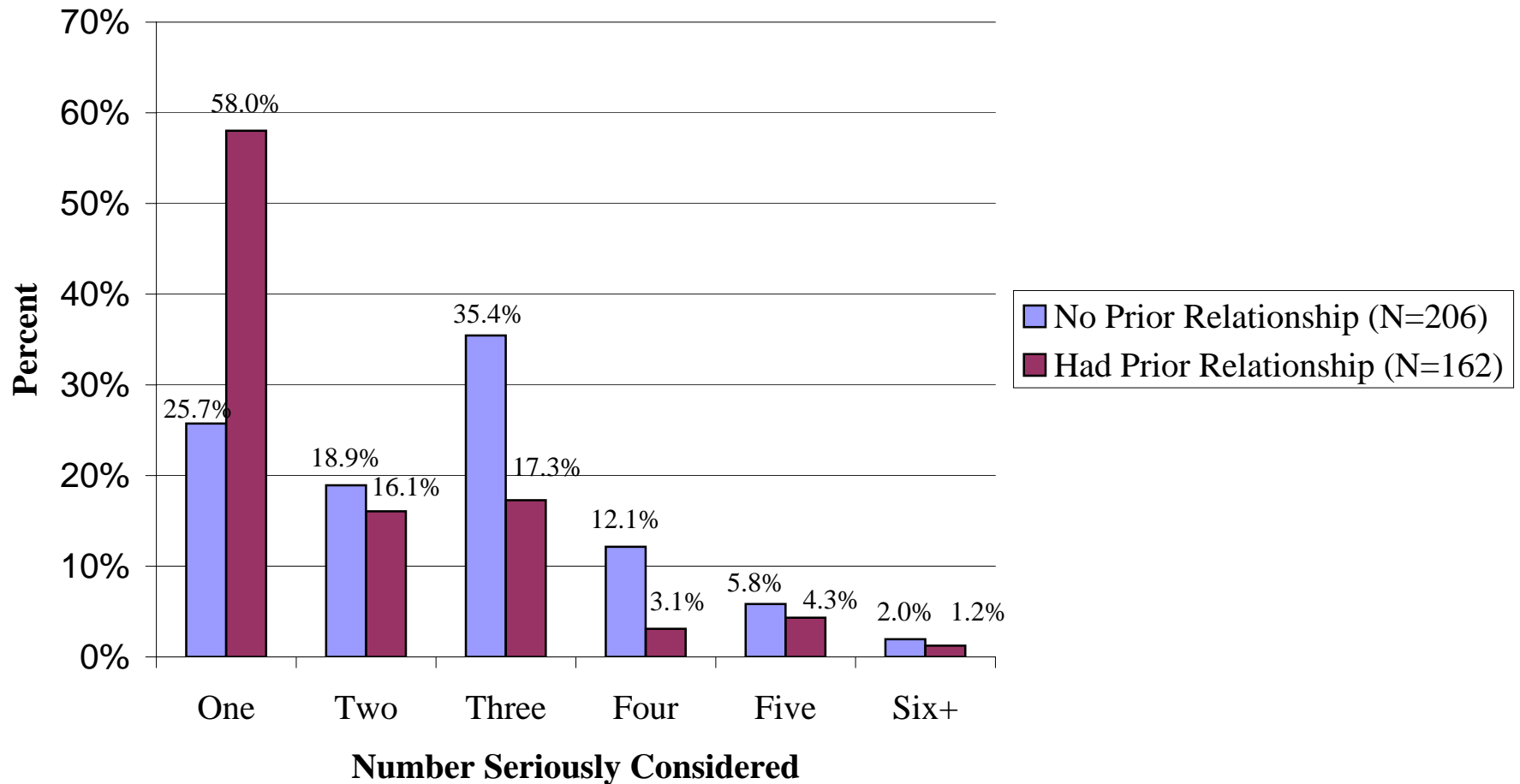
**Figure 1:**  
**Number of "Professional Remodelers... Seriously Considered" by**  
**Respondents Who Hired a Professional Remodeler,**  
**NARI 2004 Survey**



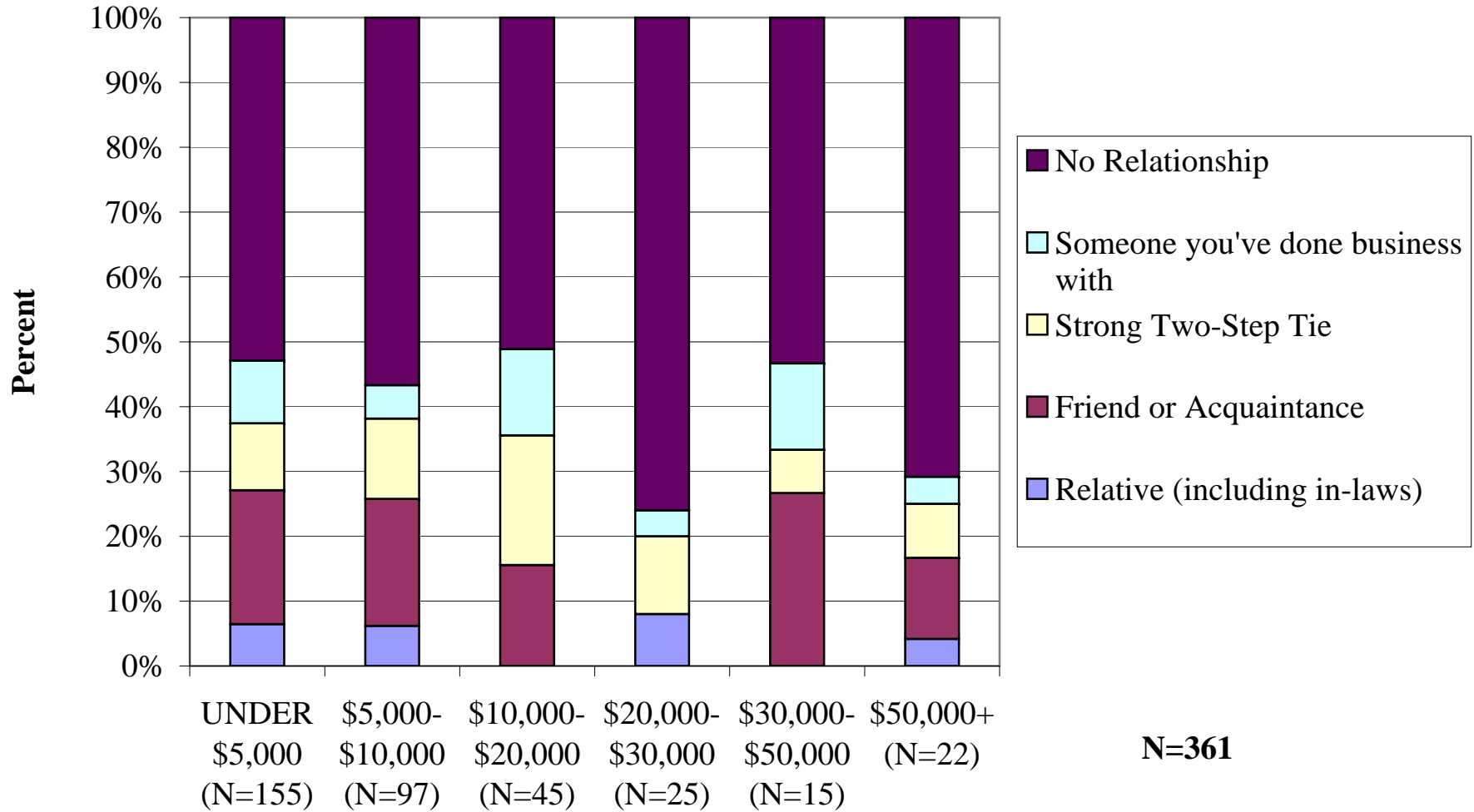
**Figure 2: Number of Remodelers Seriously Considered by Type of Relationship with Selected Remodeler, 2004 NARI Survey**



**Figure 3:**  
**Number of "Professional Remodelers... Seriously Considered" by**  
**Prior Relationship with Remodeler, 2004 NARI Survey**



**Figure 4:  
Distribution of WNE by Size of Project, 2004 NARI Survey**



**Figure 5:  
Reasons Given by Respondent for Choosing Remodeler, 2004 NARI Survey**

