Out of Sight, Out of Mind?
The audience-side effect of multiple category membership in markets

ABSTRACT

Extant work shows that actors who span multiple social categories are devalued relative to their more specialized peers. Two reasons have been proffered: 1) category spanners are of lower-quality or, 2) category spanners are difficult to understand and therefore ignored. It has been challenging for extant work to disentangle these two. This paper tackles this issue by employing a natural experiment on a peer-to-peer lending website. Difference in difference analyses show that, regardless of underlying ability or quality, perceptions of category spanning can result in devaluation.

Keywords: Categorization, Markets, Natural Experiment, Difference in Difference

INTRODUCTION

Recent research in economic and organizational sociology attempts to understand how categorization impacts individual and organizational outcomes (Zuckerman 1999, 2000; Zuckerman, Kim, Ukanwa, and von Rittman 2003; Hannan, Polos, and Carroll 2007). Categorical boundaries partition continuously differing organizations, individuals, or products into groups that critics, consumers, and investors perceive to be alike. For example, movies are categorized by genre, companies are grouped by industry, and employees are classified by functions. Categorization influences economic outcomes and has been demonstrated to aid consumers in finding the products they seek (Rosa and Spanjol 2005; Rosa, Porac, Spanjol, and Saxon 1999), facilitate financial analysts in comparing companies (Zuckerman 1999), induce managers to divest incoherent lines of business (Zuckerman 2000), and assist producers in identifying their competitors (Porac, Thomas, Wilson, Paton, and Kanfer 1995).

One key argument in this vein is that organizations, individuals, or products attempting to span multiple categories, thereby defying clear categorization, are subsequently devalued or ignored (Hannan 2010). For example, Hsu (2006) found that movies classified in multiple genres garnered lower average ratings from critics. She argued that the less favorable ratings stemmed from the difficulties audiences had interpreting films that aimed to fit with many different tastes but as a result tended not to fit well with any particular one. Similarly, Zuckerman et al. (2003) showed that actors whose work experience spanned more film genres were less likely to be subsequently hired, compared to actors whose work was more concentrated. The authors concluded that this occurred because employers implicitly screened candidates according to their fit with established film genres and thereby ignored those who had not established an identity that was definitively associated with any one genre. Finally, Zuckerman (1999) found that companies had lower market valuations when their pattern of industry participation did not fit

squarely into the industry categorization system embodied in securities' analysts division of labor. Analysts tended to ignore these diversified companies because they viewed them as illegitimate in the sense of having ambiguous or non-conforming identities. Overall, these findings have been interpreted as evidence that audience understandings play a causal role in the devaluation of organizations, individuals, or products that span multiple categories.

Yet, although the multiple-category penalty has been identified across an impressive range of settings, extant work using observational data has been less than definitive on its cause. Many studies have emphasized the role of audience perceptions and understanding in the devaluation of multiple-category members. However, the devaluation may instead result from producer-side or operational issues, such as being less focused and therefore putting forth lower quality offerings. In that case, generalists' relatively lower appeal among consumers and evaluators would merely reflect underlying variation in capabilities, rather than serving as evidence that audience perceptions play an important role even in the absence of such differences. For example, movie-goers may find films that span several genres less appealing because they have difficulty making sense of them and/or because genre-spanning movies are actually inferior on other dimensions. Researchers have attempted to address this issue to some degree with statistical controls and by devising empirical tests that would differentiate between perceptual and underlying quality issues as causal forces. Nevertheless, it is difficult to completely rule out unmeasured producer-side differences in quality, skill, or ability.

In fact, numerous theories would suggest that operational, rather than cognitive, difficulties explain these findings. Niche-width theory in organizational ecology (Freeman and Hannan 1983) highlights the operational challenges that result from organizations attempting to do many different things at once. According to this theory, organizations face similar constraints in terms of the total effort they can expend. As a result, firms must trade off broader engagement

across many areas for deeper engagement with one. Similarly, the strategic management and finance literatures on corporate diversification report evidence of a diversification discount (Laeven and Levine 2007; Burch and Nanda 2003; Berger and Ofek 1995; Lang and Stulz 1994; Wernerfelt and Montgomery 1988)[1] but attribute the results entirely to operational mechanisms, such as inefficiency due to rent-seeking behaviors, agency problems, or information asymmetries that are more problematic in diversified firms than in focused ones (Ozbas 2005; Scharfstein and Stein 2000; Denis, Denis, and Sarin 1997; Jensen 1996; Rotemberg and Saloner 1994; Berger and Ofek 1995; Bolton and Scharfstein 1990).

Noting that audience- and producer-side accounts of the multiple-category penalty are not necessarily mutually exclusive, Hsu, Hannan and Kocak (2009) develop a theory integrating both perspectives on the devaluation of category spanners. The empirical aspect of their paper nicely illustrates how such processes may occur in tandem. Yet, precisely because the two causes do tend to occur together, it remains to be demonstrated that audiences perceive multiple-category members to be less appealing even in the absence of any underlying quality differences. In this paper, we aim to contribute to the literature on the role of categories in economic and organizational life by providing a more solid empirical foundation as to the existence of an audience-side or perceptually-driven penalty for multiple-category membership in market settings. Our goal is not to compare the magnitude of effects stemming from audience perceptual factors to those from operational ones, but rather to discern whether audience perceptions and sense-making processes drive at least part of the multiple-category discount found in economic settings, even after accounting for functional differences.

We address this issue by employing unique evidence in the form of a natural experiment on a peer-to-peer lending website. The site enables people to borrow directly from one another without formal financial intermediaries such as banks. It incorporates social aspects, such as the

ability for users to join site-specific "groups," that were classified into up to five categories. Labels indicating a borrower's group category affiliations were visible on the website at one time but were exogenously removed. This provides an advantageous setting in which to test the effects of multiple-category membership, net of functional differences.

Using a difference-in-difference analytical strategy, we demonstrate that belonging to a group classified in a greater number of categories reduced the percent funding such group member's listings garnered when labels were present but that the penalty subsided after category labels were removed. Because the only difference between the two time periods is the exogenous shock of label removal, and because we included a control group that experienced all other concurrent changes, we are able to rule out the possibility that quality, motivational, ability or other functional differences caused the penalty. Rather, we conclude that audience perceptions were the main driver. More generally, these analyses provide evidence that the devaluation of multiple-category members in economic contexts can occur even in the absence of any operational differences.

THEORETICAL BACKGROUND AND HYPOTHESES

Much recent research in economic and organizational sociology explores the role of classification structures, or categories, in organizational contexts (Hannan et al. 2007; Hsu 2006; Hsu and Hannan 2005; Rao, Monin, and Durand 2005; Zuckerman et al. 2003; Zuckerman 1999, 2000). Hannan and colleagues (2007) define a clustering of similar organizations as constituting a category when members of an audience, such as employees, critics, or consumers, attach a label to the cluster, reach a high degree of consensus about what the label means, and come to agreement about the set of organizations to which the label applies. Following this, if an actor claims membership in a category and if the audience accepts that claim, the audience concurrently makes inferences as to how the actor will behave and what features it will possess

(Bruner 1957). These category-level expectations might actually fit any particular organization claiming category membership to a greater or lesser degree depending on how closely the actor resembles the typical category member (Rosch and Mervis 1975; Malt and Smith 1984; Porac and Thomas 1990). Thus, category membership generally corresponds in some measure to "real" characteristics of an actor, but, more precisely, it denotes the audience's perception of the actor vis-à-vis some ideal type in the prevailing classification structure (Zerubavel 1997). In this sense, we view category membership in economic settings as a positional attribute denoting an actor's place in an audience's cognitive representation of market participants (cf. Rosa, Porac, Runser-Spanjol, and Saxon 1999; Porac, Thomas, Wilson, Paton, and Kanfer 1995).

From the perspective of organizational audiences, categories are integral because they help in identifying relevant product offerings and choosing among them. Standard models of consumer decision-making posit a two-stage selection process whereby consumers first identify the choice set of all reasonably relevant offers and only then optimize among this smaller set of alternatives (e.g. Howard and Sheth 1969; Payne 1976; Lussier and Olshavsky 1979; Payne, Bettman, and Johnson 1988). Category membership looms large in the first stage because it represents a highly salient marker by which boundaries can be drawn between true contenders and irrelevant ones, thus circumscribing the set of individuals or products receiving a more thorough evaluation (Espeland and Stevens 1998; Lamont and Molnar 2002).

This process of commensuration and evaluation becomes problematic, however, when an offering becomes difficult to classify, either because it does not seem to fit into any category at all or because it fits into too many. In either case, audiences tend to exclude such ambiguous options from further consideration and instead direct their efforts toward evaluating more clearly relevant offerings. This may occur because evaluators are unsure of how to make sense of such offerings (Zuckerman 1999; Hsu 2006) or because they view the lack of focus on a single

category as signaling something negative, such as lack of engagement, commitment, or ability (Zuckerman et al 2003; Hsu et al. 2009). Recent research suggests that this audience-driven account of the penalty for multiple-category membership holds in market settings such as the stock market (Zuckerman 1999), French cuisine (Rao et al. 2005), feature films (Hsu 2006), and eBay (Hsu et al. 2009).

Although the convergent findings from this line of literature support the notion that actors who defy institutionalized classification schemas are punished or ignored because evaluators have difficulty making sense of them or infer a lack of ability, alternative explanations remain. In particular, both the strategic management literature and niche-width theory in organizational ecology offer other explanations as to why multiple-category members might be devalued. These accounts rely on the potential operational difficulties that arise when actors attempt to do many different things at once. Niche-width theory (Freeman and Hannan 1983) begins with the assumption that organizations have equal capacity for total effort expenditures and posits that organizations must allocate their attention among various opportunities by trading off more effort in any one area for less in another. Thus, actors spanning multiple categories must devote fewer resources to any particular category than a specialist would (Freeman and Hannan 1983; Peli 1997; Dobrev, Kim, and Hannan 2001; Hannan et al. 2007)[2]. Therefore, those occupying multiple resource niches have lower appeal in any particular one relative to specialists who focus all their energies (Hsu et al. 2009).

Taken together, then, existing research suggests two possible sources of the penalty for multiple-category membership, namely: 1) devaluation due to audiences having difficulty making sense of or viewing as illegitimate actors that do not fit clearly into culturally shared categories and 2) devaluation driven by operational challenges that result in poorer quality and performance for actors who try to do many different things at once. We seek to disentangle these

two possible sources of the multiple-category penalty by establishing that audience perceptions can drive devaluation, even in the absence of any unmeasured operational differences.

Because consumers and evaluators use category labels to identify and make sense of individuals and products, category labels play a key role in the audience perceptions that have been posited to drive the ignoring and devaluing of multiple-category members. However, labels are not integral to operational difficulties or functional differences that might drive the lowered appeal of multiple-category members; such ability differences would presumably be apparent even in the absence of category labels. This insight provides the impetus for comparing outcomes for equivalent populations of actors when category labels are present and when they are absent. Because labels are key to audience-side sources of devaluation but not to producer-side causes, such a comparison allows us to determine whether audience perceptions alone can result in devaluation. If equivalent populations of category spanners are devalued to a greater extent when labels highlight their identities as crossing categorical boundaries, then we should be more persuaded to believe that audience-driven processes are at work. Thus, we predict:

> *Hypothesis 1: Members of more categories, when labeled as such, will be evaluated more negatively than actors belonging to fewer categories.*

> *Hypothesis 2: The negative effect of multiple-category membership will diminish once category labels are removed.*

RESEARCH SETTING AND DESIGN

Our research design consists of a natural experiment that allows us to disentangle the audience-driven effect of being labeled a member of numerous categories from the alternative producer-side functional explanations that might result in devaluation. Two factors are critical to an appropriate experimental design in this case. The first is being able to compare equivalent treatment and control groups so the effects of any unobservable characteristics are removed. The

second requirement is that subjects cannot actively select into one condition or the other, but rather are assigned for reasons unrelated to either the treatment or outcome. Because of a fortuitous change in functionality that resulted in the removal of category labels, our research setting, a peer-to-peer lending website (www.prosper.com), meets these criteria.

In the words of the website, "Prosper is an online community for lending and borrowing money. Lenders and borrowers come together to bid on personal loans: loans without a bank through peer-to-peer lending." Users of the website who wish to borrow money for any purpose can post an unsecured loan request (a listing) for up to $25,000 to be paid back over three years. Other website users who wish to loan money bid on loan listings by promising to fund a portion of the loan at a particular interest rate. They aim to profit from the interest they will charge. A listing that attracts enough bidders to meet the total loan request becomes a loan.

The website bases its format on micro-lending co-ops in which individuals would band together to lend and borrow outside of formal financial institutions. In the hopes of mimicking this sense of community, the website allowed participants to establish and/or join self-organized groups. These virtual groups are established by a self-appointed "group leader," who is responsible for classifying the group into various categories. These categories serve to signify the group's identity and are used to help new members seek an appropriate group to join. Each group is required to be labeled with at least one category. For example, a group of nurses may choose to band together and categorize their group as, "Nursing." There are 1,552 category labels, any of which can be chosen by a group leader.

Borrowers on the site may choose to join a group. If they do, they are limited to joining only one. Thus, an individual is a member of multiple categories if he belongs to a group that is classified in multiple categories. Category membership is closely connected to an individual's identity because a person's loan listing contains a link to the page of any groups to which they

belong. When viewing an individual's loan request, prospective lenders can see details of the group to which the member belongs. Prominent among this information is the list of category labels with which their group is affiliated.

Figure 1 shows an example of a loan listing posted online by a prospective borrower. Listings include the dollar amount and desired interest rate of the loan. Prospective borrowers also provide a short description of the purpose of the loan and submit financial information (e.g., credit rating, income, debts) verified by a third party. In addition to extensive financial and loan-related information, a listing shows other facets of a prospective borrower's profile, including the borrower's group affiliation. After reviewing such information, lenders then may choose to bid on a loan by offering to fund some portion of the borrower's total request at an interest rate that they can specify.

[Insert Figure 1 about here]

Listings remain active for some time period - usually one or two weeks - specified by the prospective borrower. At the end of the listing period, bids on a loan are summed. If the total amount offered exceeds the amount requested, the loan is considered to be "fully funded." This occurs for approximately 14% of loan requests by group members we examined. In the case of a funded loan, bids are aggregated to form a single loan issued in the name of the website to the borrower.

This context is uniquely suited for testing theories about the cognitively driven devaluation of multiple-category members because, as mentioned earlier, members of the site belonged to groups that were classified into varying numbers of categories. Group affiliation appeared as the hyperlinked name of the group on the page of an individual's loan listing. Clicking on the group link took users to a group page with a more detailed description of the group's mission, as well as information about the number of members, listings and outstanding

loans. Most relevant for the topic here, the page also included labels for the categories with which the group was affiliated. See Figure 2 below for an example of a group with category affiliation labels visible.

[Insert Figure 2 about here]

The category labels groups were affiliated with, once visible on the website, were subsequently removed, providing a natural experiment on the labeling effects of multiple-category affiliation. See Figure 3 for an image of a group page with category labels eliminated. Notice the only change is the removal of the group's categorical affiliations. We view the removal of labels as constituting an exogenous "treatment" that allows us to test how the visibility of the number of categories a group is affiliated with impacts their members, net of any functional differences. If label invisibility does not change the penalty a member of a multiple-category group faces, then the devaluation of multiple-category members likely has nothing to do with audience perceptions or sense-making processes and may instead reflect the underlying functional differences between actors. However, if the penalty attenuates or disappears along with label visibility, then we should be more persuaded to believe devaluation occurs in part because audiences have difficulty making sense of actors who resist clear categorization or because they interpret multiple-category membership as a negative signal for other valued dimensions.

[Insert Figure 3 about here]

METHODS

Data and Sample

Prosper.com freely provides data of activity on their website. We analyzed data in a window 100 days before and 100 days after the removal of category labels, which occurred on September 12, 2007. Of the 82,203 listings within this window, ~21% (17,387) were from

borrowers affiliated with a group and 64,816 (79%) were from non-group members. Since our theory does not speculate on those social actors who are not affiliated with any group (and the advantages or disadvantages of group membership in contexts such as this one), our main observations of interest are these group members. However, we utilized the non-group members in our analytical strategy which we discuss below. We did not consider the 613 listings that spanned the date of label removal, as we were uncertain what would happen to postings that had visible labels one day and none the next. This left us with a total of 81,590 listings – 39,047 before label removal and 42,543 after. Of the 267 different groups that had members posting a loan request before the removal of the labels, over 85% (228) of these groups had members posting after the label removal as well. This suggests the majority of our group members under study were present in both the before (control) and after (treatment) conditions.

If this were a true experiment, each loan request would have been randomly assigned to a treatment or control condition and these conditions would have occurred simultaneously without any other changes. Doing so would allow us to operate under the standard experimental assumption that individuals assigned to the treatment condition do not differ from those assigned to the control condition in any manner related to both the treatment and the outcome. However, because this occurred in a real-world setting, and the time from before label removal to after label removal could have incorporated other changes as well, we needed a "control" group.

To address this concern, we utilized a difference-in-difference (diff-in-diff) analytic strategy (Card and Krueger, 1994; Meyer, 1995) which incorporated the non-group members as a baseline control group. Because the time from label visibility to label removal could potentially also reflect other changes to the environment or website, we required a control group of Prosper users who experienced the potential differences between the before and after time periods, but not the particular treatment of the label removal. Because the non-group members were present

before and after the label removal, but not subject to the label removal itself because they had no labels to be removed – they were ideally suited as a baseline group. This allowed us to isolate the effects of label removal after netting out other changes over this time period. Specifically, we estimated:

$$PercentFunded_i = B_1 \cdot NumCategories_i + B_2 \cdot Before_i + B_3 \cdot (Before_i \cdot NumCategories_i) + B_n \cdot C_i + \varepsilon_i,$$

where $PercentFunded_i$ is the percent funding that listing 'i' received, $NumCategories_i$ is a count of the number of categories listing 'i' had associated with it, and $Before_i$ is an indicator variable set to '1' if listing 'i' appeared before the removal of the labels and '0' otherwise – in essence, our treatment indicator, C_i is a vector of control variable covariates for listing 'i', and ε_i is the error term. B_3 is the coefficient of particular interest here as it estimates the change in the effect of the number of categories on the percent funding a listing received from *before* versus *after* the removal of the labels.

We addressed two additional assumptions of the differences-in-differences methodology. First, from an interview with Prosper.com officials, we do not believe there were any other changes occurring on the website that would have simultaneously affected both group and non-group members. A second assumption of the differences-in-differences approach is whether these two populations were identical before and after. Given the narrow time window of 100-days before and after, we do not believe this is a concern. We also addressed this by including multiple individual level control variables in our analyses.

Measures

Dependent Variables. We analyzed the effect of multiple-category membership on the percent funding that a listing received. Listings only became loans if they receive 100% of the amount requested by the prospective borrower. However, the percent a listing has been funded is

also recorded, which we use as a measure of how much interest or appeal there was in a listing. This variable ranged from 0% to 100%. Of the 81,590 listings in our observation window, only 6,660 (~8%) became loans. As a robustness check, we also estimated the odds that a listing became a loan (got 100% funding) or not, coded as either a 0 or 1.

Independent Variables. The key independent variable in this analysis is how many categories a group was affiliated with. Prior to the removal of category labels, founders of groups were required to choose at least one out of a set of 1,552 possible category labels to describe their group. Groups in this dataset belonged to anywhere between one to five categories. We measured the number of category labels as a count of these labels listed on the group's page. For example, the group "Atlanta Borrowers" was labeled as "Atlanta." We counted this as having 1 label. By contrast, the group "BORROWERS - Free instant Listings" was labeled as belonging to the following categories: "Entrepreneurs," "Latter Day Saints," "Families / Other," "Military / Other," and "Other." This group was operationalized as having five labels. We chose this approach because it reflected the way labels appeared visually on the group pages that prospective lenders could see when evaluating loan listings. Each label appeared as a separate line on the group page. Non-group members were coded with 0 category labels.

Control Variables. One concern we had was whether any discount we may observe from borrowers was a function of their membership in groups that were actually performing poorly and had bad reputations. So if groups that were categorized in multiple categories had members that often defaulted on their loans, then we should expect their members to be stigmatized and also receive funding at a lower rate. After the removal of group categories, no such stigmatizing signal would be present, thereby leading to their improvement in funding ability. To control for this group-level discount an individual member may receive, we included the group's rating. Group ratings were calculated by the website to represent a group's past success in paying back

loans (their rate of default), and ranged from 1 to 5 stars, with 5 stars representing the most credit-worthy groups.

We also controlled for the borrower's characteristics that might affect a listing's success. These included the member's debt-to-income ratio, homeowner status, number of currently delinquent loans, credit rating and income. For details as to the coding scheme used for credit score and income, see Appendix A. We also controlled for the amount requested and the interest rate of the loan. At the group-level, we included dummy variables for each high-level category with which a group was affiliated, thereby controlling for the possibility that some categories were disliked and that the disliked categories were disproportionately likely to be used by multiple-category groups. Table 1 summarizes the variables and Table 2 reports their correlations.

[Insert Table 1 and Table 2 about here]

Models and Results

We examined whether the number of categories a group was affiliated with affected the percent funding a listing garnered when labels were visible and whether this effect diminished once labels were removed. Because the dependent variable is continuous but bounded between 0 and 1, we utilized a tobit regression (Tobin, 1958) to predict the percent funding. A tobit regression is a form of a censored regression model. In our case, the lower bound was censored at 0 and the upper bound at 1.

We report separate regression models for loans listed before label removal and loans listed after removal, as well as a pooled model that includes a dummy variable equal to 1 for listings occurring before label removal and 0 for listings occurring after. In the pooled model, we then interacted this dummy with the number of categories a group was affiliated with. This

interaction term captures the change in the effect of being labeled in multiple categories, from before to after labels were removed.

Table 3 presents the results of tobit regression models predicting the percent funding a listing received. Model 1 estimates the overall effect of the number of categories with which a listing is labeled along with the control variables for loan listings occurring *before* the removal of the labels. Model 2 reports estimates of the same variables *after* the labels were removed. Model 3 pools all the loan listings, both before and after the label removal. In this model, we include interactions of the before label removal dummy with all variables.

In all three models, the individual-level control variables operate generally as expected. The greater amount of money requested and the greater debt to income ratio, whether a borrower was a homeowner or not decreased the percent funding they received. Similarly, poorer credit scores and lower income reduced the percent funding a borrower received. A willingness to pay a higher interest rate increased the percent a borrower was funded. At the group level, better group ratings were significant in assisting members get greater percent funding, but only after labels were removed. Perhaps this reflects the fact that a lack of informative labels forces lenders to cue in on group ratings. Additionally, the main effect of group membership was positive, indicating that loan requests from group members were more likely to get funded than those from non-group members.

[Insert Table 3 about here]

Results related to the effect of multiple-category groups are consistent with our hypotheses. Model 1 tested the main effect of the number of categories a listing is labeled with on the percent funding received, when category labels were present. Results suggest the greater number of categories a listing is labeled with decreases the percent funding a listing received. Specifically, for each additional category a listing is labeled with decreases the percent they are

funded by 3.5%. Therefore, results support hypothesis 1 and are consistent with previous research that has shown actors affiliated with many categories fare worse than those identified with fewer categories.

We ran two additional models to test hypothesis 2. First, we estimated the effect of the number of categories a listing is labeled with on the percent funding it received after the labels were removed. Results presented in Model 2 are consistent with our contention that once labels were removed, the multiple-category penalty was reduced (i.e. a 3.5% penalty per additional category reduces to 1.1% penalty after label removal).

Model 3 tests this hypothesis more rigorously by pooling all listings, before and after the label removal together, thereby enabling us to analytically identify and test the effect of the label removal. We included the non-group members as well as the group members in the same regression. The coefficient of the interaction of the dummy variable indicating the listing occurred before label removal with the multiple categories variable is negative and significant in Model 3. This interaction term captures the change in the effect of multi-category groups from before to after label visibility. The negative and significant effect indicates the penalty for multiple-category membership was significantly less after labels were removed, supporting Hypothesis 2. In particular, from before to after label removal, listings with an additional category associated with it improved their percent funding by 2.1%. With the addition of the non-group members acting as a control from the before to after period, this represents the change for multiple category listings from the before to after label removal net of any other changes that may have affected this relationship.

Graphically, we demonstrate the effect of number of categories on percent funding from before to after in Figure 4. For comparison purposes, we have set the effect of being in a 1 category group after the removal of the labels at zero. Each line represents the effect the number

of categories has on percent funding a listing receives, net of the factors of group membership and net of the changes experienced by the control group of non-group members. We see that the change in the percent funded varies by the number of categories a group member listing is affiliated with for both the before and after periods, that there is an increasing negative effect as the number of categories increases. In particular, the difference in the slope from the before to after lines demonstrate that after the labels were removed, the disadvantage of being associated with a multiple category group was reduced. We note that the penalty of being in multiple categories did not entirely disappear after labels were removed, which may reflect underlying differences between multiple-category group members and others that were still apparent without labels. However, our main hypothesis, that the effect of being labeled a multiple-category member attenuated when labels were removed, was confirmed.

[Insert Figure 4 about here]

Robustness Checks and Additional Considerations

A simple explanation for the observed results could be that the multiple category group members are, in actuality, worse borrowers – perhaps they defaulted at a higher rate. Under this scenario, the visibility of the labels signaled their riskiness and rational lenders avoided them. However, with the removal of the labels, a valuable and correct signal as to a multi-category member's inadequacies was no longer available to lenders, resulting in the observed pattern. Assuming that lenders would have learned of the poorer payback rate of the multiple category members through previous observations of borrowers on the website, we addressed this concern by estimating the relationship between the likelihood a borrower defaulted on a loan and the number of categories they were affiliated with. In results not reported for brevity, we found no significant effect of the number of categories on the rate of default. This suggests that multiple category members were not, in actuality, worse borrowers.

We conducted several additional analyses to ensure our results were robust. First, as mentioned above, over 85% of the groups which had members listing a potential loan before the removal of the labels also had members listing after the removal. Readers may question how this 15% difference affected the estimates of the before (control) and after (treatment) conditions. If the two populations are not identical, it would be difficult to conclude the treatment was what caused the observed effect. To address this possible difference in the two conditions, we ran the regression model solely on the population of groups that appeared both before and after the removal of labels. This ensured the control and treatment conditions were applied to an identical population of subjects. The findings from this analysis, not reported for brevity, fully corroborate the results presented above on the full population.

An additional concern could be whether using the percent funded was an adequate dependent variable. Because listings only become loans if they received 100% funding from lenders, then getting full funding may seem the appropriate outcome to examine. In additional analyses, we predicted whether or not a listing received full funding. The results, not reported for brevity, fully supported all our hypotheses and corroborated our results.

Second, we addressed the possibility that group composition might have changed over our observation window of 100 days before and after label removal. Note that this would only be an alternative explanation for our results if unattractive members of groups identified by many labels consistently moved out of these groups and into groups with fewer labels and if that alone caused a change in borrowing patterns. We have no reason to believe this occurred. However, we further narrowed the window of observation to 50 days before and after the removal of the labels in order to limit the possibility that substantial exits by weaker members from multi-category labeled groups occurred. Analyses performed on this further limited set of observations, not reported here for brevity, corroborate our findings from the wider window of observation.

Finally, scholars may also be interested in whether the negative effect of belonging to a multiple-category group holds after controlling for how common, familiar, or prevalent the combination of labels is. When a category combination is more prevalent, individuals have more opportunities to observe, learn about, and evaluate that type of combination. Mere exposure theory would suggest that having more opportunities to observe a category combination leads to familiarity and even liking (Zajonc 1968). For example, the combination of a location (such as San Francisco) and an industry (such as High Tech) may not elicit additional confusion, because it is so common. In short, there are certainly some instances whereby categorical combinations are not expected to detrimentally affect a social actor's outcomes. However, our theory is expected to hold on average across most types of category combinations, despite the fact that there may be some category combinations such as the one above that are not devalued. That is, most combinations of multiple labels would be more confusing than single category labeled groups – therefore, on average, multiple-category groups will be seen as disadvantaged.

We did, however, explore this issue in analyses not reported, as it is beyond the scope of this paper. We ran the models reported earlier and included a measure of the relative prevalence of the combination of category labels. The effects reported above for the number of categories a group belonged to remained, even after controlling for relative prevalence.

DISCUSSION

One of the principle sociological contributions to our understanding of markets is the idea that rewards are in part determined by one's social position rather than being solely a function of individual attributes, such as preferences, skills, and effort (cf. White 1970; Podolny 1993; Sorensen 1996; Gould 2002). Recent work in economic sociology treats category membership as a form of social position and finds that actors fare poorly when they attempt to spread their efforts broadly across categories. Our use of a natural experiment with a difference-in-difference

strategy allowed us to more clearly disentangle the potential causes of this effect. We showed that multiple-category labels operate as a causal force for devaluation even when controlling for unmeasured differences between multiple-category members and their peers who belong to fewer categories. Members of multiple categories are penalized merely for being branded as such.

We believe the findings from this particular setting represent a conservative estimate of the effect of being labeled a member of multiple categories. The categories in our setting were descriptors group leaders choose from drop-down boxes to label their groups. A priori, they do not appear to be the powerful, institutionalized forces with a myriad of mechanisms demanding conformity many researchers (e.g. Meyer and Rowan 1977; DiMaggio and Powell 1983) suggest social categories represent. Yet, even in a setting where transgression of the category structure might not be expected to entail severe social sanctions, we found strong effects stemming from cognitive processes inherent in evaluation. In other settings, our findings suggest category labels are likely to exacerbate any underlying differences in quality, motivations or other attributes. This underscores the fact that category labels accentuate and amplify identity.

Building upon the theoretical foundation developed elsewhere and strengthened empirically in this paper, future work should attempt to more directly explore how evaluators view and experience multiple-category members. The findings reported here are consistent with the extant literature in cognitive psychology, which suggests that ambiguous objects often arouse confusion. However, our results are also consistent with the idea that individuals make negative inferences about multiple-category members, such as them being less able or less committed (Durkheim 1893), even when these inferences are incorrect. It would be insightful to have more direct evidence on the extent to which confusion, as compared to negative perceptions, accounts for the multiple-category penalty.

In addition, while our work has focused on documenting the challenges broadly faced by those who do not fit into the prevailing categorization system, it would be useful to explore different ways in which an actor might be perceived not to fit. Is it worse for a social actor to not fit into any category or to fit into too many? For example, is a film classified as horror and comedy seen as being outside the category system altogether, or is it seen as a partial member of two potentially incompatible genres? Our data did not allow for examination of the particular perceptual mechanisms involved in devaluing multiple-category members, but future research should explore this by measuring impressions of multiple-category members in a more nuanced manner.

Finally, as we noted earlier, the effects of multiple-category membership held even when controlling for the relative prevalence or familiarity of the particular category combination. However, a useful line of future work should attempt to understand how certain combinations of categories are more or less confusing. One path to take could be to more clearly parse out the presumed positive effects of cognitive familiarity from the potential negative crowding or competitive effects with which it might also be associated.

APPENDIX A

CREDIT SCORE CODES

Code	Credit Score Equivalent [1]
AA Credit	760 +
A Credit	720-759
B Credit	680-719
C Credit	640-679
D Credit	600-639
E Credit	560-599
HR Credit	520-559
NC Credit	No Credit Score

[1] Credit scores are based of Experian Scorex PLUS, Experian is an independent credit scoring agency

INCOME CODES

Code	Definition
Income 0	Not Displayed
Income 1	$0 or Un-Verifiable
Income 2	$1 - $24,999
Income 3	$25,000 – $49,999
Income 4	$50,000 – $74,999
Income 5	$75,000 – $ 99,999
Income 6	$100,000+
Income 7	Not Employed

REFERENCES

Allison, P. D. (1984) *Event History Analysis: Regression for Longitudinal Event Data.* Sage, Thousand Oaks, CA.

Banerjee, A. (1992) A Simple Model of Herd Behavior. *Quarterly Journal of Economics* 107 797–817.

Barron, D. N., West, E., & Hannan, M. T. (1994) A Time to Grow and a Time to Die: Growth and Mortality of Credit Unions in New York City, 1914-1990. *American Journal of Sociology* 100(2) 381-421.

Berger, P., & Ofek, E. (1995) Diversification's Effect on Firm Value. *Journal of Financial Economics* 37 39-65.

Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992) A Theory of Fads, Fashion, Custom and Cultural Change as Informational Cascades. *Journal of Political Economy* 100 992-1026.

Bikhchandani, S., Hirshleifer, D., & Welch, I. (1998) Learning From the Behavior of Others: Conformity, Fads, and Informational Cascades. *Journal of Economic Perspectives* 12(3) 151–170.

Bolton, P., & Scharfstein, D. S. (1990) A Theory of Predation Based on Agency Problems in Financial Contracting. *American Economic Review* 80 93–106.

Bruner, J. (1957) On Perceptual Readiness. *Psychological Review* 64 123-152.

Burch, T., & Nanda, V. (2003) Divisional Diversity and the Conglomerate Discount: Evidence from Spinoffs. *Journal of Financial Economics* 70(1) 69-98.

Campa, J. M., & Kedia, S. (2002) Explaining the Diversification Discount. *Journal of Finance* 57(4) 1731-1762.

Card, D. and A.B. Krueger. (1994) Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania, *American Economic Review*, v. 84, n. 4, pp. 774–775.

Denis, D., Denis, D., & Sarin, A. (1997) Agency Problems, Equity Ownership, and Corporate Diversification. *Journal of Finance* 52 135–160.

DiMaggio, P., & Powell, W. (1983) The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review* 48(2) 147-60.

Dobrev, S., Kim, T., & Hannan, M. T. (2001) Dynamics of Niche Width and Resource Partitioning. *American Journal of Sociology* 106 1299–1337.

Durkheim, E. 1893 (1997). *The Division of Labor in Society*. Free Press, New York.

Espeland, W. N., & Stevens, M. L. (1998) Commensuration as a Social Process. *Annual Review of Sociology* 24 313-343.

Freeman, J., & Hannan, M. T. (1983) Niche Width and the Dynamics of Organizational Populations. *American Journal of Sociology* 88(6) 1116-45.

Gould, R. (2002) The Origins of Status Hierarchies: A Formal Theory and Empirical Test. *American Journal of Sociology* 107(5) 1143-78.

Hampton, J. A. (1997) Conceptual Combinations: Conjunction and Negation of Natural Concepts. *Memory and Cognition*, 25 888-909.

Hannan, M.T. (2010) Partiality of Memberships in Categories and Audiences. *Annual Review of Sociology*, Vol. 36: 159-181.

Hannan, M.T., Polos, L., & Carroll, G. (2007) *Logics of Organization Theory: Audiences, Codes and Ecologies.* Princeton University Press, Princeton, NJ.

Howard, J. A., & Sheth, J. N. (1969) *The Theory of Buyer Behavior.* John Wiley & Sons, Inc., New York, NY.

Hsu, G., Hannan, M. T., & Kocak, O. (2009) Multiple Category Membership in Markets: An Integrative Theory and Two Empirical Tests. *American Sociological Review* 74: 150-169.

Hsu, G., & Hannan, M. T. (2005) Identities, Genres and Organizational Forms. *Organization Science* 16(5) 474-490.

Hsu, G. (2006) Jacks of All Trades and Masters of None: Audiences' Reactions to Genre Spanning in Feature Film Production. *Administrative Science Quarterly* 51 420-450.

Jensen, M. (1996) Agency Costs of Free Cash Flow, Corporate Finance and Takeovers. *American Economic Review* 76 323-329.

Laeven, L., & Levine, R. (2007) Is There a Diversification Discount in Financial Conglomerates? *Journal of Financial Economics* 85 331-367.

Lamont, M., & Molnar, V. (20020 The Study of Boundaries in the Social Sciences. *Annual Review of Sociology* 28 167-195.

Lang, L., & Stulz, R. (19940 Tobin's Q, Corporate Diversification, and Firm Performance. *Journal of Political Economy* 102 1248–1280.

Long, J. S. (1997) *Regression Models for Categorical and Limited-Dependent Variables.* Sage, Thousand Oaks, CA.

Lussier, D. A., & Olshavsky, R. W. (1979) Task Complexity and Contingent Processing in Brand Choice. *Journal of Consumer Research* 6 154- 65.

Malt, B., & Smith, E. (1984) Correlated Properties in Natural Categories. *Journal of Verbal Learning and Verbal Behavior* 23(2) 250-269.

Meyer, B.D. (1995) Natural and Quasi-Experiments in Economics. *Journal of Business & Economic Statistics*, Vol. 13, No. 2, 151-161.

Meyer, J., & Rowan, B. (1977) Institutionalized Organizations: Formal Structures as Myth and Ceremony. *American Journal of Sociology* 83 340-363.

Murphy, G. L. (2004) *The Big Book of Concepts*. The MIT Press, Cambridge, MA.

Ozbas, O. (2005) Integration, Organizational Processes, and Allocation of Resources. *Journal of Financial Economics* 75 201-242.

Payne, J. W. (1976) Task Complexity and Contingent Processing in Decision Making: An Information Search and Protocol Analysis. *Organizational Behavior and Human Performance* 16 366-87.

Payne, J. W., Bettman, J. R., & Johnson, E. J. (1988) Adaptive Strategy Selection in Decision Making. *Journal of Experimental Psychology: Learning, Memory and Cognition* 14 534-552.

Péli, G. (1997) The Niche Hiker's Guide to Population Ecology: A Logical Reconstruction of Organizational Ecology's Niche Theory. *Sociological Methodology* 27 1–46.

Podolny, J. (1993) A Status-based Model of Market Competition. *American Journal of Sociology* 98(4) 829-72.

Pollock, T. G., & Rindova, V. P. (2003) Media Legitimation Effects in the Market for Initial Public Offerings. *Academy of Management Journal* 46 631–642.

Porac, J., & Thomas, H. (1990) Taxonomic Mental Models in Competitor Definition. *Academy of Management Review* 15 224-240.

Porac, J. F., Thomas, H., Wilson, F., Paton, D., & Kanfer, A. (1995) Rivalry and the Industry Model of Scottish Knitwear Producers. *Administrative Science Quarterly* 40 203–27.

Rao, H., Monin, P., & Durand, R. (2005) Border Crossing: Bricolage and the Erosion of Categorical Boundaries in French Gastronomy. *American Sociological Review* 70(6) 968-91.

Rao, H., Greve, H., & Davis G. (2001) Fool's Gold: Social Proof in the Initiation and Abandonment of Coverage by Wall Street Analysts. *Administrative Science Quarterly* 46 502–526.

Rosa, J. A., & Spanjol, J. (2005) Micro-level Product-Market Dynamics: Shared Knowledge and its Relationship to Market Development. *Journal of the Academy of Marketing Science* 33(2) 197-216.

Rosa, J. A., Porac, J. F., Runser-Spanjol, J., & Saxon, M. (1999) Sociocognitive Dynamics in a Product Market. *Journal of Marketing* 63 64-77.

Rosch, E., & Mervis, C. (1975) Family Resemblances: Studies in the Internal Structure of Categories. *Cognitive Psychology* 7 573-605.

Rotemberg, J., & Saloner, G. (1994) Benefits of Narrow Business Strategies. *American Economic Review* 84(5) 1330-1349.

Scharfstein, D. S., & Stein, J. C. (2000) The Dark Side of Internal Capital Markets: Divisional Rent-seeking and Inefficient Investment. *Journal of Finance* 55(6) 2537-2564.

Smith, E. E., & Medin, D. L. (1981) *Categories and Concepts*. Harvard University Press, Cambridge, MA.

Sorensen, A. (1996) The Structural Basis of Social Inequality. *American Journal of Sociology* 101(5) 1333-1365.

Tuma, N. B., & Hannan, M. T. (1984) *Social Dynamics: Models and Methods*. Academic Press: Orlando, Florida.

Villalonga, B. (2004) Diversification Discount or Premium?: New Evidence from the Business Information Tracking Series. *Journal of Finance* 59(2) 479-506.

Wernerfelt, B., C. A. Montgomery. (1988) Tobin's *q* and the Importance of Focus in Firm Performance. *American Economic Review* 78 246–250.

White, H. (1970) *Chains of Opportunity: System Models of Mobility in Organizations.* Harvard University Press, Cambridge, MA.

Zajonc, R. B. (1968) "Attitudinal effects of mere exposure." Journal *of Personality and Social Psychology Monographs*, 9: 1–27.

Zerubavel, E. (1997) *Social Mindscapes: An Invitation to Cognitive Sociology.* Harvard University Press, Cambridge, MA..

Zuckerman, E., Kim, T., Ukanwa, K. & von Rittman, J. (2003) Robust Identities or Non-Entities: Typecasting in the Feature-Film Labor Market. *American Journal of Sociology* 108(5) 1018-74.

Zuckerman, E. (1999) The Categorical Imperative: Securities Analysts and the Illegitimacy Discount. *American Journal of Sociology* 104(5) 1398-1438.

Zuckerman, E. (2000) Focusing the Corporate Product: Securities Analysts and Dediversification. *Administrative Science Quarterly* 45 591-619.

Figure **1**
Screen Shot of Prosper Loan Request

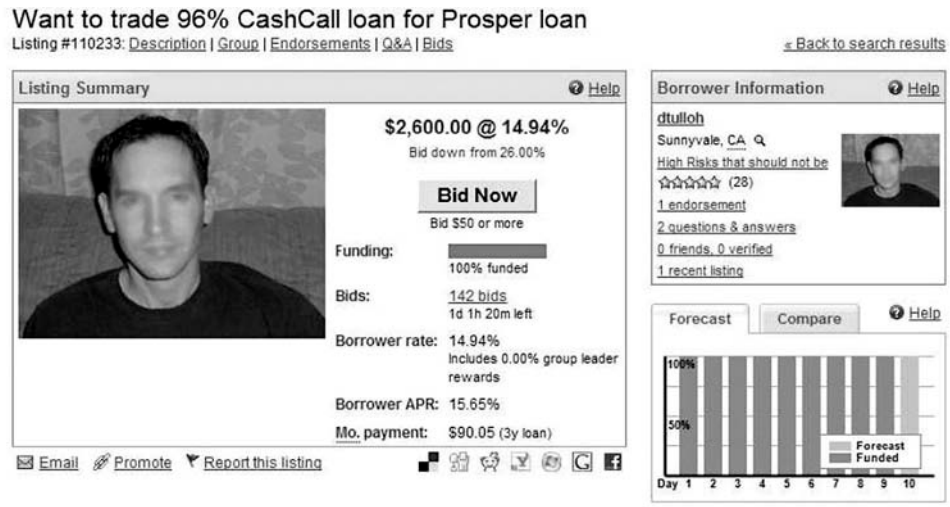

Figure **2**
Screen Shot of Group Page with Category Labels Visible

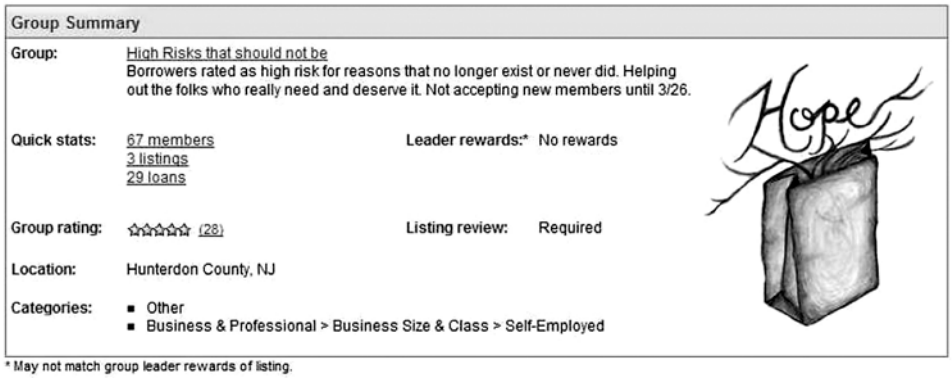

Figure **3**
Screen Shot of Group Page After Category Labels Were Removed

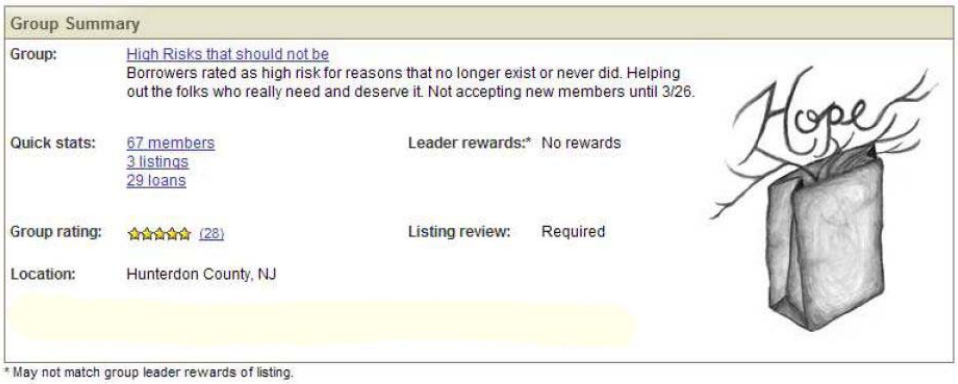

Figure 4
Change in Effect of Multiple Category Membership to Percent Funding Received
(Before versus After Label Removal)

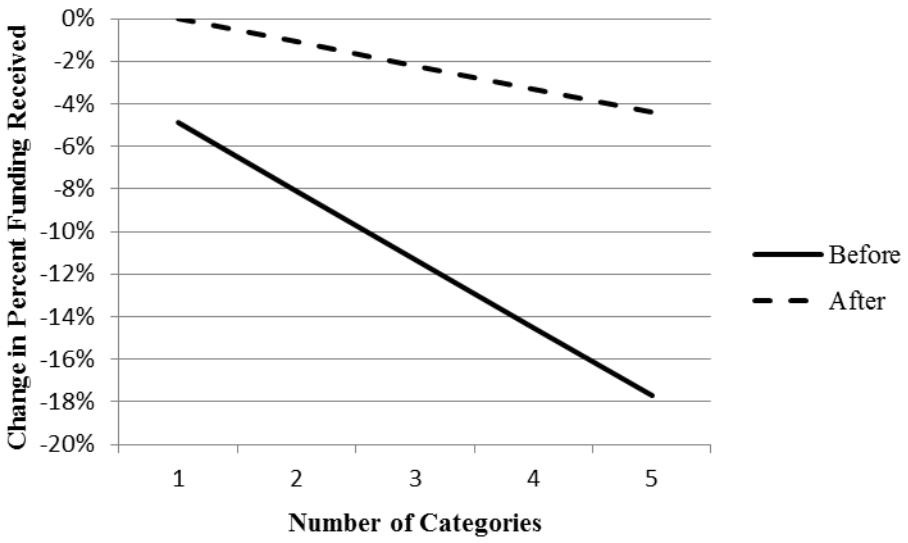

Table 1: Summary Statistics
Observations: 81,590

Variable	Mean	Std. Dev.	Min	Max
Percent Funded	0.120	0.282	0	1
Amount Requested	8141.269	6216.032	1000	25000
Interest Rate	0.180	0.072	0	0.36
Debt To Income Ratio	3.752	4.972	0	74
Is a Homeowner (=1)	0.534	1.275	0	10.01
Number Current Delinquencies	0.344	0.475	0	1
Number of Previous Listings	2.851	2.972	1	49
AA Credit Rating[(1)]	0.029	0.168	0	1
A Credit Rating[(1)]	0.021	0.144	0	1
B Credit Rating[(1)]	0.048	0.215	0	1
C Credit Rating[(1)]	0.102	0.303	0	1
D Credit Rating[(1)]	0.159	0.365	0	1
E Credit Rating[(1)]	0.187	0.390	0	1
HR Credit Rating[(1)]	0.454	0.498	0	1
Income Category 1[(2)]	0.001	0.026	0	1
Income Category 2[(2)]	0.186	0.389	0	1
Income Category 3[(2)]	0.453	0.498	0	1
Income Category 4[(2)]	0.221	0.415	0	1
Income Category 5[(2)]	0.076	0.265	0	1
Income Category 6[(2)]	0.055	0.228	0	1
Group Rating of 1[(3)]	0.184	0.387	0	1
Group Rating of 2[(3)]	0.003	0.055	0	1
Group Rating of 3[(3)]	0.001	0.028	0	1
Group Rating of 4[(3)]	0.003	0.057	0	1
Group Rating of 5[(3)]	0.007	0.086	0	1
Group Rating of NR[(3)]	0.007	0.082	0	1
Religion Label	0.043	0.202	0	1
Civic Label	0.015	0.122	0	1
Sports Label	0.005	0.072	0	1
Ethnicity Label	0.005	0.072	0	1
Regional Label	0.023	0.151	0	1
Military Label	0.031	0.173	0	1
Education Label	0.051	0.221	0	1
Non-Professional Label	0.003	0.055	0	1
Hobbies Label	0.027	0.162	0	1
Art Label	0.008	0.086	0	1
People Label	0.077	0.266	0	1
Science Label	0.015	0.121	0	1
Other Label	0.048	0.214	0	1
Before Label Removal Flag	0.479	0.500	0	1
In a Group Flag	0.211	0.408	0	1

Number Categories	0.874	1.792	0	5

Table **2: Correlations**
Observations: 81,590

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)	Days to First Bid or Close	1.000						
(2)	Got at Least 1 Bid	-0.176	1.000					
(3)	Percent Funded	-0.319	0.395	1.000				
(4)	Amount Requested	-0.057	0.051	-0.030	1.000			
(5)	Interest Rate	-0.149	0.263	0.035	-0.051	1.000		
(6)	Debt To Income Ratio	0.187	-0.142	-0.188	-0.170	0.039	1.000	
(7)	Is a Homeowner (=1)	0.033	-0.050	-0.058	0.078	0.000	-0.021	1.000
(8)	Number Current Delinquencies	-0.087	0.103	0.113	0.178	-0.072	-0.074	-0.017
(9)	Number of Previous Listings	-0.056	0.060	0.014	-0.177	0.156	0.049	-0.021
(10)	AA Credit Rating[(1)]	-0.124	0.116	0.213	0.145	-0.139	-0.119	0.005
(11)	A Credit Rating[(1)]	-0.117	0.109	0.250	0.120	-0.160	-0.106	-0.006
(12)	B Credit Rating[(1)]	-0.146	0.140	0.203	0.162	-0.106	-0.142	0.004
(13)	C Credit Rating[(1)]	-0.140	0.140	0.150	0.155	-0.047	-0.177	0.009
(14)	D Credit Rating[(1)]	-0.074	0.087	0.033	0.079	0.031	-0.164	0.016
(15)	E Credit Rating[(1)]	0.011	0.008	-0.081	-0.077	0.096	0.014	-0.006
(16)	HR Credit Rating[(1)]	0.270	-0.287	-0.284	-0.246	0.069	0.349	-0.014
(17)	Income Category 1[(2)]	0.007	-0.007	-0.008	0.008	-0.009	-0.005	0.052
(18)	Income Category 2[(2)]	0.069	-0.082	-0.062	-0.108	-0.012	0.012	0.383
(19)	Income Category 3[(2)]	0.048	-0.043	-0.062	-0.123	0.015	0.062	-0.156
(20)	Income Category 4[(2)]	-0.040	0.052	0.037	0.067	0.010	-0.020	-0.116
(21)	Income Category 5[(2)]	-0.065	0.051	0.067	0.110	-0.007	-0.045	-0.069
(22)	Income Category 6[(2)]	-0.085	0.086	0.106	0.209	-0.016	-0.073	-0.065
(23)	Group Rating of 1[(3)]	-0.125	0.145	0.116	-0.091	0.113	0.006	-0.014
(24)	Group Rating of 2[(3)]	-0.007	0.014	0.019	-0.003	0.003	0.013	-0.002
(25)	Group Rating of 3[(3)]	-0.010	0.021	0.021	-0.014	0.023	0.001	-0.003
(26)	Group Rating of 4[(3)]	0.010	0.002	0.010	-0.012	0.000	0.003	0.001
(27)	Group Rating of 5[(3)]	-0.025	0.038	0.053	-0.018	0.001	-0.004	-0.009
(28)	Group Rating of NR[(3)]	0.008	-0.005	-0.010	0.001	-0.001	0.008	0.020
(29)	Religion Label	-0.064	0.075	0.045	-0.026	0.031	-0.003	0.001
(30)	Civic Label	0.015	0.005	0.001	-0.029	0.015	0.020	-0.007
(31)	Sports Label	-0.007	0.021	0.042	-0.004	0.006	-0.005	-0.004
(32)	Ethnicity Label	0.004	-0.001	0.000	-0.016	0.013	0.008	0.005
(33)	Regional Label	0.000	0.009	0.021	-0.036	0.015	0.008	-0.003
(34)	Military Label	-0.043	0.055	0.003	-0.039	0.028	0.012	0.006
(35)	Education Label	0.019	0.002	0.020	-0.047	0.027	0.016	-0.001
(36)	Non-Professional Label	-0.015	0.026	0.025	-0.009	0.011	-0.006	0.003
(37)	Hobbies Label	-0.003	0.014	0.025	-0.027	0.018	0.004	0.004
(38)	Art Label	-0.056	0.063	0.065	0.021	-0.001	-0.038	0.003
(39)	People Label	-0.036	0.060	0.042	-0.040	0.042	0.015	0.003
(40)	Science Label	-0.041	0.047	0.062	0.007	0.007	-0.022	0.004

(41)	Other Label	-0.028	0.064	0.015	-0.060	0.040	0.018	0.000
(42)	Before Label Removal Flag	-0.088	-0.135	0.009	0.011	-0.010	0.035	0.033
(43)	In a Group Flag	-0.124	0.152	0.130	-0.094	0.110	0.005	-0.010
(44)	Number Categories	-0.109	0.137	0.117	-0.081	0.102	0.003	-0.008

	Variable	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**
(9)	Number of Previous Listings	-0.020	1.000					
(10)	AA Credit Rating[(1)]	0.093	-0.054	1.000				
(11)	A Credit Rating[(1)]	0.134	-0.053	-0.026	1.000			
(12)	B Credit Rating[(1)]	0.112	-0.051	-0.039	-0.033	1.000		
(13)	C Credit Rating[(1)]	0.145	-0.027	-0.058	-0.050	-0.076	1.000	
(14)	D Credit Rating[(1)]	0.011	0.005	-0.075	-0.064	-0.098	-0.146	1.000
(15)	E Credit Rating[(1)]	-0.014	0.059	-0.083	-0.071	-0.108	-0.162	-0.208
(16)	HR Credit Rating[(1)]	-0.203	0.022	-0.158	-0.134	-0.206	-0.307	-0.396
(17)	Income Category 1[(2)]	-0.010	-0.013	0.004	-0.001	0.001	-0.003	0.000
(18)	Income Category 2[(2)]	-0.148	-0.033	-0.025	-0.034	-0.032	-0.034	-0.011
(19)	Income Category 3[(2)]	-0.107	0.032	-0.043	-0.066	-0.049	-0.058	-0.020
(20)	Income Category 4[(2)]	0.098	0.011	0.021	0.010	0.014	0.036	0.024
(21)	Income Category 5[(2)]	0.129	-0.009	0.039	0.053	0.037	0.045	0.019
(22)	Income Category 6[(2)]	0.166	-0.026	0.055	0.124	0.094	0.066	0.001
(23)	Group Rating of 1[(3)]	0.002	0.346	-0.016	-0.018	0.000	0.016	0.002
(24)	Group Rating of 2[(3)]	-0.006	0.028	-0.004	-0.004	0.008	-0.001	0.016
(25)	Group Rating of 3[(3)]	-0.009	0.037	-0.002	-0.001	-0.006	-0.010	-0.004
(26)	Group Rating of 4[(3)]	-0.007	0.028	-0.009	-0.004	0.001	-0.008	-0.008
(27)	Group Rating of 5[(3)]	0.005	0.033	0.014	0.017	0.013	0.010	-0.008
(28)	Group Rating of NR[(3)]	-0.004	0.049	0.002	0.007	-0.010	-0.002	0.007
(29)	Religion Label	0.007	0.170	-0.006	-0.011	0.006	0.009	0.014
(30)	Civic Label	0.003	0.082	-0.013	-0.009	-0.010	-0.007	-0.009
(31)	Sports Label	0.000	0.050	0.010	0.005	0.003	0.006	0.019
(32)	Ethnicity Label	-0.013	0.085	-0.013	-0.001	-0.001	-0.010	-0.003
(33)	Regional Label	0.004	0.122	-0.014	-0.005	0.001	-0.005	0.002
(34)	Military Label	0.011	0.139	-0.012	-0.013	-0.009	-0.002	0.006
(35)	Education Label	0.002	0.188	-0.019	-0.017	-0.001	-0.011	0.011
(36)	Non-Professional Label	0.006	0.025	-0.002	0.001	0.013	0.012	0.001
(37)	Hobbies Label	0.008	0.119	-0.010	-0.004	-0.002	0.007	0.005
(38)	Art Label	0.011	0.023	0.009	0.004	0.024	0.031	0.033
(39)	People Label	0.012	0.220	-0.011	-0.020	0.002	0.004	0.015
(40)	Science Label	0.008	0.068	0.005	-0.001	0.025	0.020	0.019
(41)	Other Label	0.007	0.213	-0.015	-0.018	-0.011	-0.006	0.006
(42)	Before Label Removal Flag	-0.032	-0.057	-0.025	-0.001	-0.020	-0.022	-0.026
(43)	In a Group Flag	-0.001	0.367	-0.014	-0.014	0.002	0.018	0.009
(44)	Number Categories	0.005	0.346	-0.013	-0.013	0.006	0.021	0.010

	Variable	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(16)	HR Credit Rating[(1)]	-0.437	1.000					
(17)	Income Category 1[(2)]	0.001	0.000	1.000				
(18)	Income Category 2[(2)]	-0.041	0.092	-0.013	1.000			
(19)	Income Category 3[(2)]	0.025	0.085	-0.024	-0.434	1.000		
(20)	Income Category 4[(2)]	0.021	-0.072	-0.014	-0.255	-0.485	1.000	
(21)	Income Category 5[(2)]	-0.003	-0.084	-0.008	-0.137	-0.260	-0.153	1.000
(22)	Income Category 6[(2)]	-0.018	-0.121	-0.006	-0.115	-0.219	-0.129	-0.069
(23)	Group Rating of 1[(3)]	0.024	-0.020	-0.008	-0.018	0.010	0.016	-0.001
(24)	Group Rating of 2[(3)]	-0.001	-0.012	0.007	-0.014	0.005	0.008	-0.006
(25)	Group Rating of 3[(3)]	0.003	0.010	-0.001	-0.007	0.001	0.009	-0.008
(26)	Group Rating of 4[(3)]	0.013	0.004	-0.002	-0.004	0.003	0.006	-0.002
(27)	Group Rating of 5[(3)]	0.003	-0.018	0.003	0.001	-0.001	-0.009	0.013
(28)	Group Rating of NR[(3)]	0.001	-0.003	-0.002	0.003	0.002	-0.001	-0.006
(29)	Religion Label	0.012	-0.022	-0.006	-0.010	-0.003	0.010	-0.002
(30)	Civic Label	0.023	0.004	0.001	-0.012	0.003	0.014	0.001
(31)	Sports Label	-0.007	-0.018	-0.002	-0.013	0.010	0.001	0.001
(32)	Ethnicity Label	-0.003	0.016	-0.002	-0.007	0.007	0.002	0.004
(33)	Regional Label	-0.001	0.008	-0.001	-0.010	0.006	0.002	0.007
(34)	Military Label	0.011	0.000	-0.005	-0.002	-0.009	0.004	0.005
(35)	Education Label	0.020	-0.005	0.000	-0.002	0.001	0.016	-0.017
(36)	Non-Professional Label	0.011	-0.022	-0.001	-0.005	0.009	-0.005	0.004
(37)	Hobbies Label	0.010	-0.011	0.001	0.001	-0.001	0.005	-0.003
(38)	Art Label	0.005	-0.062	-0.002	-0.005	-0.001	-0.001	0.010
(39)	People Label	0.016	-0.017	-0.004	-0.013	0.006	0.009	-0.004
(40)	Science Label	0.012	-0.048	-0.003	-0.008	-0.002	0.014	-0.005
(41)	Other Label	0.012	0.005	-0.004	-0.003	-0.007	0.005	0.004
(42)	Before Label Removal Flag	-0.007	0.055	0.027	0.045	0.024	-0.032	-0.016
(43)	In a Group Flag	0.025	-0.030	-0.007	-0.017	0.010	0.016	-0.002
(44)	Number Categories	0.023	-0.033	-0.007	-0.015	0.007	0.014	-0.001

	Variable	(22)	(23)	(24)	(25)	(26)	(27)	(28)
(23)	Group Rating of 1[(3)]	-0.011	1.000					
(24)	Group Rating of 2[(3)]	0.002	-0.026	1.000				
(25)	Group Rating of 3[(3)]	0.003	-0.013	-0.002	1.000			
(26)	Group Rating of 4[(3)]	-0.005	-0.027	-0.003	-0.002	1.000		
(27)	Group Rating of 5[(3)]	0.003	-0.041	-0.005	-0.002	-0.005	1.000	
(28)	Group Rating of NR[(3)]	0.001	-0.039	-0.005	-0.002	-0.005	-0.007	1.000
(29)	Religion Label	0.009	0.433	0.014	0.028	-0.012	0.001	-0.010
(30)	Civic Label	-0.009	0.202	0.055	-0.004	0.262	0.035	-0.010
(31)	Sports Label	-0.004	0.129	0.067	-0.002	-0.004	0.026	0.021
(32)	Ethnicity Label	-0.011	0.120	-0.004	-0.002	0.011	0.022	0.107
(33)	Regional Label	-0.004	0.305	0.025	0.047	-0.002	0.027	0.000
(34)	Military Label	0.012	0.347	-0.010	0.013	0.015	0.042	0.041

(35)	Education Label	-0.008	0.434	0.038	0.007	0.031	0.018	0.061
(36)	Non-Professional Label	-0.004	0.096	0.050	-0.002	-0.003	-0.005	0.055
(37)	Hobbies Label	-0.004	0.299	0.035	0.038	-0.010	0.044	0.022
(38)	Art Label	0.004	0.171	-0.005	-0.003	-0.005	0.046	-0.002
(39)	People Label	0.000	0.558	0.053	0.059	-0.016	0.002	0.049
(40)	Science Label	-0.002	0.246	0.041	-0.004	0.027	-0.007	-0.010
(41)	Other Label	0.005	0.432	0.022	0.018	0.033	0.049	0.042
(42)	Before Label Removal Flag	-0.031	0.113	0.007	0.003	0.002	0.018	0.030
(43)	In a Group Flag	-0.011	0.916	0.107	0.055	0.110	0.167	0.159
(44)	Number Categories	-0.008	0.916	0.098	0.060	0.107	0.125	0.118

	Variable	(31)	(32)	(33)	(34)	(35)	(36)	(37)
(30)	Civic Label	0.110	1.000					
(31)	Sports Label	0.136	-0.009	1.000				
(32)	Ethnicity Label	0.157	0.008	0.026	1.000			
(33)	Regional Label	0.113	0.064	0.175	0.340	1.000		
(34)	Military Label	0.589	0.164	0.016	-0.013	0.081	1.000	
(35)	Education Label	0.117	0.202	0.078	0.029	0.351	0.031	1.000
(36)	Non-Professional Label	-0.004	0.166	0.012	-0.004	0.133	0.095	0.075
(37)	Hobbies Label	0.064	0.340	0.170	-0.012	0.387	0.002	0.497
(38)	Art Label	0.321	-0.011	0.081	-0.006	0.013	0.006	0.034
(39)	People Label	0.652	0.230	0.056	0.214	0.339	0.412	0.540
(40)	Science Label	0.482	-0.005	-0.003	0.008	-0.017	-0.022	0.291
(41)	Other Label	0.458	0.077	0.049	0.060	0.153	0.583	0.275
(42)	Before Label Removal Flag	0.028	0.000	0.011	-0.014	0.000	0.004	0.016
(43)	In a Group Flag	0.408	0.238	0.139	0.139	0.299	0.345	0.449
(44)	Number Categories	0.482	0.239	0.152	0.151	0.348	0.392	0.480

	Variable	(38)	(39)	(40)	(41)	(42)	(43)	(44)
(37)	Hobbies Label	0.054	1.000					
(38)	Art Label	0.037	0.030	1.000				
(39)	People Label	0.056	0.392	0.221	1.000			
(40)	Science Label	0.114	0.009	0.541	0.378	1.000		
(41)	Other Label	0.058	0.142	0.007	0.425	0.025	1.000	
(42)	Before Label Removal Flag	-0.002	0.014	0.062	0.032	0.061	-0.061	1.000
(43)	In a Group Flag	0.107	0.322	0.168	0.557	0.237	0.435	0.119
(44)	Number Categories	0.117	0.311	0.196	0.620	0.275	0.471	0.110

	Variable	(43)
(45)	Number Categories	0.942

Table **3**

Tobit Regression on the Percent Funding a Listing Received

	(1)		(2)		(3)	
Amount Requested	-0.000***	(0.000)	-0.000***	(0.000)	-0.000***	(0.000)
Interest Rate	3.111***	(0.047)	1.416***	(0.028)	1.494***	(0.031)
Debt To Income Ratio	-0.005***	(0.001)	-0.004***	(0.000)	-0.004***	(0.000)
Is a Homeowner (=1)	-0.020***	(0.002)	-0.016***	(0.002)	-0.017***	(0.002)
Number Current Delinquencies	0.010	(0.006)	-0.004	(0.004)	-0.003	(0.005)
Number of Previous Listings	-0.001	(0.001)	-0.005***	(0.001)	-0.005***	(0.001)
A Credit Rating(1)	-0.155***	(0.022)	-0.241***	(0.016)	-0.249***	(0.018)
B Credit Rating(1)	-0.418***	(0.020)	-0.397***	(0.015)	-0.411***	(0.016)
C Credit Rating(1)	-0.716***	(0.019)	-0.636***	(0.014)	-0.659***	(0.016)
D Credit Rating(1)	-0.953***	(0.019)	-0.847***	(0.014)	-0.877***	(0.015)
E Credit Rating(1)	-1.227***	(0.019)	-0.982***	(0.014)	-1.016***	(0.016)
HR Credit Rating(1)	-1.372***	(0.019)	-1.076***	(0.014)	-1.116***	(0.016)
Income Category 1(2)	0.103	(0.073)			0.091	(0.065)
Income Category 3(2)	0.056***	(0.008)	0.017**	(0.006)	0.018**	(0.006)
Income Category 4(2)	0.117***	(0.009)	0.041***	(0.007)	0.043***	(0.007)
Income Category 5(2)	0.159***	(0.012)	0.068***	(0.009)	0.070***	(0.010)
Income Category 6(2)	0.221***	(0.014)	0.109***	(0.010)	0.113***	(0.011)
Group Rating of 2(3)	0.006	(0.042)	0.064	(0.037)	0.067	(0.040)
Group Rating of 3(3)	0.147	(0.077)	0.407***	(0.068)	0.422***	(0.074)
Group Rating of 4(3)	0.017	(0.047)	0.096**	(0.037)	0.099*	(0.040)
Group Rating of 5(3)	0.047	(0.026)	0.101***	(0.025)	0.106***	(0.027)
Group Rating of NR(3)	-0.224***	(0.029)	-0.112***	(0.030)	-0.114***	(0.033)
Religion Label	0.127***	(0.023)	-0.042*	(0.020)	-0.044*	(0.022)
Civic Label	-0.063*	(0.025)	-0.049**	(0.019)	-0.050*	(0.020)
Sports Label	0.071*	(0.034)	0.094**	(0.031)	0.098**	(0.034)
Ethnicity Label	-0.137**	(0.045)	-0.006	(0.030)	-0.006	(0.033)
Regional Label	0.025	(0.021)	-0.035*	(0.017)	-0.037*	(0.018)
Military Label	-0.030	(0.023)	-0.047*	(0.018)	-0.048*	(0.020)
Education Label	-0.134***	(0.017)	-0.038**	(0.015)	-0.039*	(0.016)
Non-Professional Label	0.089	(0.046)	0.089*	(0.037)	0.094*	(0.040)
Hobbies Label	-0.012	(0.021)	-0.003	(0.016)	-0.003	(0.018)
Art Label	0.066*	(0.029)	0.014	(0.040)	0.014	(0.044)
People Label	-0.057***	(0.017)	0.044**	(0.014)	0.045**	(0.015)
Science Label	0.039	(0.030)	0.058*	(0.030)	0.059	(0.032)
Other Label	0.017	(0.020)	0.008	(0.011)	0.009	(0.012)
BeforeXAmount Requested					-0.000***	(0.000)
BeforeXInterest Rate					1.367***	(0.050)
BeforeXDebt To Income Ratio					-0.001	(0.001)
BeforeXIs a Homeowner (=1)					-0.002	(0.003)
BeforeXNum Current Delinquent					0.013	(0.007)
BeforeXNum Previous Listings					0.004**	(0.001)
BeforeXA Credit Rating(1)					0.103***	(0.027)
BeforeXB Credit Rating(1)					0.017	(0.024)
BeforeXC Credit Rating(1)					-0.016	(0.023)
BeforeXD Credit Rating(1)					-0.021	(0.023)
BeforeXE Credit Rating(1)					-0.138***	(0.023)
BeforeXHR Credit Rating(1)					-0.173***	(0.023)
BeforeXIncome Category 3(2)					0.034***	(0.010)
BeforeXIncome Category 4(2)					0.067***	(0.011)
BeforeXIncome Category 5(2)					0.080***	(0.015)
BeforeXIncome Category 6(2)					0.096***	(0.016)
BeforeXGroup Rating of 2(3)					-0.058	(0.055)

BeforeXGroup Rating of 3[(3)]					-0.284**	(0.101)
BeforeXGroup Rating of 4[(3)]					-0.082	(0.058)
BeforeXGroup Rating of 5[(3)]					-0.060	(0.036)
BeforeXGroup Rating of NR[(3)]					-0.095*	(0.042)
BeforeXReligion Label					0.162***	(0.030)
BeforeXCivic Label					-0.008	(0.030)
BeforeXSports Label					-0.026	(0.045)
BeforeXEthnicity Label					-0.119*	(0.052)
BeforeXRegional Label					0.062*	(0.026)
BeforeXMilitary Label					0.017	(0.029)
BeforeXEducation Label					-0.084***	(0.022)
BeforeXNon-Professional Label					-0.008	(0.058)
BeforeXHobbies Label					-0.008	(0.026)
BeforeXArt Label					0.047	(0.051)
BeforeXPeople Label					-0.100***	(0.021)
BeforeXScience Label					-0.021	(0.042)
BeforeXOther Label					0.002	(0.022)
BeforeXIn a Group					0.226***	(0.023)
BeforeXNumber Categories					-0.021***	(0.006)
Before Label Removal					-0.254***	(0.024)
In a Group	0.397***	(0.018)	0.136***	(0.016)	0.140***	(0.017)
Number Categories	-0.035***	(0.004)	-0.011**	(0.004)	-0.011**	(0.004)
Constant	0.486***	(0.020)	0.739***	(0.015)	0.748***	(0.016)
Observations	39,047		42,543		81,590	

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001, Standard errors in parentheses*

Endnotes

[1] Recently, some work in this area has begun to debate whether diversification has a causal effect in lowering firm value or whether the diversification discount may instead be due to selection effects, namely that firms choosing to diversify tend to be lower-performing to begin with (e.g., Villalonga 2004; Campa and Kedia 2002). We view these emergent findings as further reason to explore the effects of multiple-category membership using a research design that eliminates selection effects.

[2] Because niche width theory assumes that all organizations have the same total capacity for performance, it is not applicable to situations where generalists enjoy economies of scale/scope (Hannan et al. 2007). The setting under consideration here meets that assumption.