A Simple Approach for Estimating the Relative Membership Growth Potential of Rotary Districts

Wodon, Quentin

Nonprofit Research Project

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Quentin Wodon
Nonprofit Research Project

This brief applies a simple framework for assessing the relative potential for Rotary membership growth in different geographic areas. The analysis is relative in that areas are compared to each other through an econometric procedure. By design about half of the areas are considered as performing comparatively well in that they have membership rates above expectations. The other areas are considered as performing less well because they have membership rates below expectations, and thereby more potential for growth. The simulations entail assessing how much membership growth could be achieved by raising the performance of less well performing areas to their expected levels of performance. The analysis is conducted for Rotary zone 33, which covers part of the Mid Atlantic and South Atlantic regions of the United States. The results for all 15 districts belonging to zone 33 from the application of the methodology to the zone are available in separate briefs for each district. This brief explains the methodology used the analysis.

Introduction

Worldwide membership in Rotary has remained stable at slightly above 1.2 million for some time, but membership in the United States has been declining. Clubs have continued to add new members, but not enough to compensate for attrition among existing members. Reversing the decline in membership has become a top priority for many districts.

This brief does not discuss how to actually achieve membership growth, but it does suggest a framework to identify the geographic areas that could be targeted for growth within Rotary districts, as well as the districts that may have the largest potential for growth within a zone. The methodology was applied to zone 33which covers the Mid Atlantic and South Atlantic region of the United States. The results obtained for each of the 15 Rotary districts in the zone are available in separate briefs.

This brief focuses on the methodology followed to carry the analysis.

The brief is structured as follows. The next section describes the methodology used for measuring membership rates. In the following three sections, results are provided for district 7620 for current, expected, and potential membership. The last two sections discuss the contribution of district 7620 to zone 33 and the question of using zip code data for club location. A conclusion follows.

Defining Membership Rates

How can the performance of a district or area within a district in attracting members into Rotary be measured? One simple way to answer this question would be to measure the membership rate in Rotary in a district or area as the number of Rotarians in that district or area divided by the population living in the district or area. Yet this approach

would not take into account differences in the characteristics of the population living in different districts or areas. So the question is which characteristics should be taken into account when comparing membership rates between districts or areas? This brief takes the position that for measuring membership rates, household income should be taken into account, but not other socio-economic characteristics of the areas.

There is of course no income eligibility threshold to participate in Rotary. Yet at the same time, membership is costly, and together with other expenditures, it may reach or exceed US$ 2,000 per year in some of the clubs located in well off areas (in many clubs, costs are lower). This high cost per member is due in part to the fact that membership in a club often entails participation at weekly meetings – most often at lunch time, so that the cost of lunches has to be paid for. Membership costs also include dues for Rotary districts and Rotary International, as well as other costs. In addition to membership costs, Rotarians often contribute financially to the local and international service projects of their club, as well as to the Rotary Foundation of Rotary International.

Thus, even if there is no income eligibility threshold to be a Rotarian, and even if efforts are made by clubs increase diversity, it is reasonable to assume that membership is most likely to be observed among households with high income levels. In this brief, the membership rate in Rotary is computed as a share of the number of households in an area with incomes above US$100,000 per year. The same income threshold is used for all areas, with the exception of district 7610 (the part of

Virginia closer to the capital city of Washington, DC) and district 7620 (part of Maryland and the capital city) where the threshold is set at $150,000.

The main reason for this choice is that membership rates tend to be much lower in those areas probably in part because the cost of living is so much higher there than in other areas of zone 33. Even when the income threshold is set at $150,000 in those two districts, membership rates remain below those observed in other states in zone 33. While other ways to adjust for differences in cost of living could have been adopted, this method had the advantage of being simple, and the results do not appear to be qualitatively different with other methods in terms of identifying potential areas for growth within districts.

What about other socio-economic characteristics, such as age, gender, race, occupation, employment status, etc.? The position in this brief is that even if the likelihood of membership is higher among some groups, such as white men aged 55 or above, this does not mean that the membership potential is not present among other groups. Precisely because of efforts by Rotary to recruit members from a wide diversity of backgrounds, the membership potential in an area should not be restricted according to other socio-economic characteristics of current members.

But again, the threshold that membership costs imply for who may decide to become a member must be taken into account to generate realistic results. Thus if we denote by HIH the number of high income households in an area, and by Rotarians the number of members in

that area, the membership rate is simply defined as MR=Rotarians/HIH.

An area's membership rate is defined as the number of Rotarians in the area divided by the area's number of high income households. The analysis is carried for both counties and districts.

Defining the level of aggregation

Another question relates to the levels at which membership rates should be computed. The rates can be computed for zones, districts, and counties as well as other large independent administrative entities. They can also be computed for zip codes, but the position in this brief is that counties and similar entities are the lowest levels at which membership rates can be estimated meaningfully.

The problem with going to low levels of aggregation such as zip codes is that when a club is located in a particular zip code, this does not mean that its members are from that zip code. For example, consider the Rotary Club of Washington DC which is located in zip code 20036, one of about two dozen zip codes in the District of Columbia. Most members of the club do not live in the zip code area of the club. Instead, most members live elsewhere in the district as well in adjacent areas in Maryland and Virginia. Considering the zip code of the location of the Rotary club of Washington, DC for computing membership rates would clearly not make sense, as there would be a major mismatch between the Rotary membership data for the club and the data on households with high levels of income in its zip code area.

This problem also arises when conducting the analysis at the level of counties, but less so because counties are much larger than zip codes, and all clubs located within a county are factored in when measuring membership rates at the level of the county. This of course does not mean that zip code level data cannot be useful, as discussed later in this brief. But they are not useful for the purpose of estimating membership rates.

Data

In terms of data sources, membership rates are computed at the county and district levels. In addition, for some large cities or other entities with independent administrative status, membership rates are computed at the level of those administrative entities. In district 7620 for example, this is the case for Baltimore City and the District of Columbia. In Virginia where many cities have independent status, in some cases the cities were combined with the county where they are located, while in other cases they were kept as independent areas in the analysis (this decision was based on the number of high income households in the independent entities – when that number was deemed sufficiently large, the entity was kept separate with its own analysis).

The data on Rotary membership are for July 2010. These data were downloaded from a publicly available webpage on the zone's membership blog website. The data were available for all clubs in zone 33. The number of high income households was estimated in each county or area using data from the Census Bureau using the American Community Survey (the estimates are available on the Census Bureau website). These

estimates are for the period 2005-2009 and income levels are expressed in 2009 inflation-adjusted dollars.

As an example, if according to the Census Bureau a county has 25,000 households with incomes above the income threshold (as estimated by the American Community Survey based on data for the period 2005-2009) and 1,000 Rotarians in the county's clubs (as of July 2010), the membership rate is computed as MR=1,000/25,000=4%.

Expected Membership Rates

Membership rates in and by themselves are not good measures of how well different districts are doing in terms of the size of their membership. This is because as shown in figure 1 there is a negative relationship between membership rates and the number of high income households by area. Areas with a larger number of high income households tend to have substantially lower membership rates. It is necessary to take that relationship into account when estimating expected membership rates by area or by district and comparing them with current rates.

There is a strong negative relationship between membership rates and the number of high income households across geographic areas in zone 33.

In figure 1 each dot represents an area within zone 33 (typically a county). The figure shows that the membership rate on the vertical axis tends to be lower in areas with a larger value for the logarithm of the number of high income households on the horizontal axis (the log transformation was used because of

the very broad range of values for the number of high income households by area in zone 33 and the distortion that extreme values might generate in the econometric analysis). The relationship is strong and statistically significant. The line in red through the scatter plot represents expected membership rates given an area's high income population (see Box 2 for details). About half of the districts have membership rates above expectations, while the other half has rates below expectations.

Figure 1: Membership Rate as a function of the Log of the Number of High Income Households by Area in Zone 33, 2010
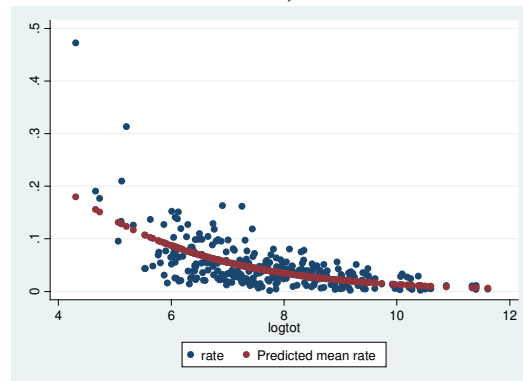
Source: Author

Several hypotheses could be advanced for explaining this relationship apart from the issue of the cost of living which was already partially corrected for by using a different income threshold in the main areas with a very large number of high income households (Delaware, Maryland, Virginia, and the District of Columbia). It could be that in areas with many high income households, work pressures and time availability to participate in Rotary may be more constrained. It could also be that the prestige associated with being a member of Rotary may be lower in those areas,

and the opportunities to be involved in service work through other organizations may be more numerous. These are just a few of many potential explanations that could be suggested for the relationship, and additional potential explanations. But whatever the underlying causes of the negative relationship between the number of high income households and the membership rate, it should not be ignored because it is not reasonable to expect that areas with many high income households will be able to reach the same membership rates as areas with much fewer high income households.

Box 2: Fractional Logit Regression

Since membership rates are bounded by zero and one, the estimation of expected membership in figure 1 is obtained with a fractional logit model (see Wodon, 2012, for details). It must be emphasized however that more complex models could be estimated, and each model would generate different measures of expected membership. The estimates provided here should thus be considered as indicative only. Their main objective is to show how this type of analysis can be conducted, and to give an order of magnitude (as opposed to an exact measure) of the membership potential of various areas.

The relationship in figure 1 is used to define an expected membership rate for each area, denoted by EMR. For each area with a membership rate below its expected level, the area's realized membership rates RMR is defined as the ratio of the actual membership rate, MR, divided by the expected membership rate, EMR. That is, if MR<EMR, RMR=MR/EMR. When the membership rate is higher than the expected rate, the membership potential of the area or district s considered fulfilled, so that RMR is capped at 100%.

Potential Membership Gains

In order to assess potential membership gains by area, simulations are conducted on the basis of the differences between actual and expected membership rates for areas with membership rates below expectations. Two simulations are implemented. In both simulations the areas that have a higher membership rate than the expected rate keep their membership rate constant. The difference between the two simulations relates to the treatment of areas with membership rates below expected levels.

(1) 100% gap reduction: This case assumes that all areas with lower membership rates than expected see their membership rate bumped up to the expected level. Thus, the membership rate under simulation 1, denoted by MRS1, is defined as MRS1=EMR if MR<EMR, and as MRS1=MR if MR≥EMR.

(2) 50% gap reduction: A more reasonable – but still ambitious – goal would be to reduce by half the gap between actual and expected membership for areas that have lower than expected membership rates. Under this simulation, the membership rate MRS2 is defined as MRS2=MR + 0.5(EMR-MR) if MR<EMR, and MRS2=MR if MR≥EMR.

Two simulations are carried for potential membership rates: (1) all areas with lower membership than expected see their membership rate reach the expected level; (2) only half of the gap between actual and expected membership is bridged for areas with lower than expected rates.

Membership gains under the two simulations are obtained by taking into account both the increase in membership rates and the high income population of an area. Under the first simulation, the membership gain of an area is defined as $MGS1=(MRS1-MR)*HIH$, and similarly for the second simulation, the gain is computed as $MGS2=(MRS2-MR)*HIH$. Areas within a district can then be ranked according to their potential membership gains. And similarly, after aggregating the results obtained for various areas into district gains, it is feasible to assess which districts in a zone may have the largest potential for gains in membership.

Zip Code Data

It was mentioned earlier that data at the zip code level were not appropriate for computing membership rates because too many members would not live in the specific zip code where the clubs in that zip code are located. This would lead to a mismatch between data on club membership and the number of high income households in an area.

This does not mean that information on zip codes cannot be used to select the location of new clubs in an area when it has been determined that this broader area is targeted for an increase in membership. To illustrate this, consider the District of Columbia area in district 7620. In July 2010, the District of Columbia had two clubs. A third club was opened in 2012 in the Dupont circle neighborhood. The fact that a club was open in the District of Columbia is interesting. Indeed, as discussed in the membership potential brief for district 7620 in this series, the district was identified as one of the main areas for potential growth in the district. But it is also worth noting that the new club is located in the same zip code (20036) as the Rotary club of Washington, DC. The two clubs are 15 minutes apart in walking distance while the third club, the Rotary Club of Capitol Hill, is located further away.

Zip code data can be used to select the location of new clubs in broader areas targeted for membership growth.

It remains to be seen whether there will be substantial competition between the Dupont Circle and Washington DC clubs for attracting members. One mitigating factor is that the Washington DC club meets at lunch time, while the Dupont Circle club meets in the evening. But from the point of view of this brief, the choice of the location for the Dupont Circle club makes sense, even if it is not based solely on the number of high income households in the neighborhood.

Specifically, two factors suggest that the choice of the location of the Dupont Circle was appropriate. First, among the two dozen zip codes in the District of Columbia, the zip code of the club is ranked relatively high (eighth) in terms of average income levels for DC's population and the population living in that zip code is also relatively large.

This means that the club could attract some local residents, and that it is also located in a comparatively wealthy (and lively) area of the city.

But in addition this zip code is also located downtown in an area with substantial business activity that may help in attracting individuals working there, even if they do not live there. This is a good illustration of the fact that while it would not make much sense to rely on zip code data for membership rate analysis because zip codes tend to cover areas that are too small for that purpose, zip code data can still be used for deciding where to locate new clubs within broader areas identified for membership growth.

Conclusion

This brief has presented a very simple approach for conducting an analysis of the membership potential of service clubs such as Rotary by geographic area. A more technical description of the approach is available in Wodon (2012). Results from the analysis are provided for the 15 districts belonging to zone 33 in subsequent briefs in this series.

These results should be considered as indicative only given that alternative modeling approaches could have been used for assessing membership growth potential and would have yielded different results. Still, it is hoped that the analysis will be of some value for District officials developing strategies for membership growth.

Reference
Wodon, Q., 2013. *Estimating the Potential for Membership Growth in Service Clubs: Framework and Application to Rotary*, Washington, DC: The Nonprofit Research Project.

Disclaimer and Acknowledgments

The Nonprofit Research Project

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