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Awards and Rewards: Evidence from an Evaluation of the Metrobank's Search for Outstanding Teachers

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Abstract

Does an award affect the economic success of teachers recognized for excellence? We investigate the impact of the "Metrobank Award for Outstanding Teachers" using a unique dataset from a survey of teachers who competed from 1988 to 2010. Our study is one of the firsts to use income as the primary indicator of success. When the sample is limited to those who were actively teaching in 2014, we find that the Award had a higher impact on awardees who were relatively younger. The intuitive explanation is that "younger" awardees have more years in their career to capitalize on the Award.

Key words: Impact evaluation, RDD, awards, teacher's professional trajectory
JEL: A20, C40, I210, I200

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I. INTRODUCTION

Awards are bestowed to recognize excellence or great contribution in a given field. Examples are Hans Christian Andersen Award for literary pieces, Academy Awards for movies and films, Nobel Prizes for various scholastic fields, and the US John Bates Clark Medal Award for the most outstanding young economist.

Excellence in teaching has been increasingly recognized. The Australian Government bestows various awards for teaching excellence.[1] England has the National Teaching Fellowships Scheme (NTFS), which provides both a reward and professional development to the winners (Skelton 2004). The Carnegie Foundation for the Advancement of Teaching bestow the US Professor of the Year award.[2] In the Philippines, the most prestigious award recognizing excellence in teaching is the Metrobank Foundation Award for Outstanding Teachers, which has been running for 30 years now.

What has been the impact of the Metrobank Award on the economic success of its recipients? Such evaluation is critical to determining if the Award is effective as an intervention and if the process of selecting winners can be productively refined. We examined the evidence of the Award's impact, measuring the effects accrued by the

[1] See Australian Award https://www.csu.edu.au/__data/assets/pdf_file/0003/1326675/OLT-2015_Awards_Instructionsv1.0.pdf and http://www.uq.edu.au/teaching-learning/australian-awards-for-university-teaching

[2] See US Professor of the Year Awards Program http://www.usprofessorsoftheyear.org/About_POY.html

awardees that are attributable only to the Award. This type of impact evaluation is essentially a problem of missing data, because one cannot observe the welfare of the awardees had they not won the award. Without information on the counterfactual, the next best alternative is to compare the outcomes of awardees with those of a comparator group that did not win the award.

The selection process of the Metrobank Foundation Search for Outstanding Teachers (SOT) provides an ideal sample for such an analysis. Annually, 10 awardees are chosen from 20 rigorously selected national finalists. For our methodology, the non-successful finalists are our comparator group. They would have very similar characteristics to group of awardees (the treatment group) such that those who received the Award would have had outcomes similar to those in the comparator group in the absence of the Award. We used two methodologies—multiple linear regression models (MLRM) and regression discontinuity design (RDD)—to isolate the impact of the Award on the income growth of the awardees, thus measuring its causality effect.

Our paper contributes to the growing literature on impact of awards. The first wave of studies shows that awards, including experts' ratings and reviews, provide an important signaling device about the quality of goods (see Reinstein and Snyder 2005; Deuchert, Adjamah, and Pauly 2005; Ginsburgh and van Ours 2003; Nelson et al. 2001; Elliott and Simmons 2008). Akerlof (1970), in his Nobel Prize winning article, recognizes that awards like Nobel Prizes "serve this function of certification" as an institution that reduces quality uncertainty. The second wave of studies endeavored to find evidence on the effect of awards on the economic success of goods (see Ginsburgh

2003; Ginsburgh and van Ours 2003; Ponzo and Scoppa 2015). These studies had mixed results, thus definitive conclusions are on hold.

Related to awards in teaching excellence, Skelton (2004) presented a qualitative evaluation of the NTFS in England. Part of his study examined the impact of the NTFS upon the professional identity of the winning teachers. Recipients of the NTFS award recognized that the award played an important role in their promotion. They also reported that they have felt more confidence in themselves and in their teaching (Skelton 2004).

The distinguishing feature of our study is that we collected data on the respondents' incomes as primary indicator of economic success after getting the Metrobank Foundation Award for Outstanding Teachers. A number of studies focus on an award's impact on the economic success of a good, measured in terms of sales revenues—e.g., Ponzo and Scoppa (2015) on Italian book of fiction, Deuchert et al. (2005) on movies, Friberg and Gronqvist (2012) on wine. An exception to the existing studies is that of Ginsburgh and vans Ours (2003), which focuses on the impact of an award for best musician on their compensation. Ginsburgh and van Ours (2003) used long-playing albums (LPs) and compact disks (CDs) in record catalogues as their success indicator since data on incomes among all contenders were impossible to collect given the worldwide coverage of the competition.

To the best of our knowledge, our study is the first to use average annual income growth as the primary indicator of success. We found that the average annual income growth of the awardees was not significantly different from that of the finalists. However, further classifying the awardees and finalists into actively teaching and no longer

teaching (retired/resigned) in 2014, at the time of the survey, resulted in noticeable significant differences in average annual income growth.

Section II of this paper describes the Metrobank Foundation's search process. Section III analyzes the data, stylized facts, and our constructed indicators of success. We discuss the methodology in Section IV. Section V presents the results of the impact of the Award on teachers and briefly discusses its impact on the awardees' school. Section VI provides concluding remarks and offers some recommendations.

II. THE METROBANK SEARCH FOR OUTSTANDING TEACHERS

Launched in 1985, the Metrobank Foundation Search for Outstanding Teachers (SOT) aims to promote a culture of excellence in education by recognizing the country's best teachers. The Metrobank Foundation SOT is the most prestigious award for teachers in the Philippines, receiving the Grand Anvil[3] distinction from the Public Relations Society of the Philippines (PRSP) in 2010. In the past 30 years, more than 300 exceptional elementary, high school, and college teachers from all over the country had received this highly coveted award.

How are the awardees selected? Each year, the Metrobank Foundation receives an average of 300 nominations nationwide. For the elementary competition, each school is entitled to submit two nominees, one from the primary level (Kinder to Grade III) and another from the intermediate level (Grades IV to VI). For the secondary and tertiary education competitions, each school is entitled to submit one nominee for each

[3] The Grand Anvil is the most prestigious honor conferred on outstanding public relations achievements in the Philippines (see http://anvilgold.prsp.ph/)

competition. Past regional and national finalists of the search who meet the basic eligibility requirements are deemed automatic provincial finalists.

After reviewing the nominees' documents, the preliminary board of judges (PBJ) selects 40 regional finalists, composed of 16, 16, and 8 teachers at the elementary, secondary, and tertiary competition levels, respectively. The 40 regional finalists are interviewed and conduct teaching demonstrations before the PBJ in each competition category. After further screening, which includes personal background checks, the PBJ selects 20 national finalists. These 20 national finalists represent the best of the best among their cohort of nominees.

The final selection of 10 Outstanding Teachers is determined by the final board of judges (FBJ), consisting of high-caliber representatives from different sectors: the senate and/or congress, academe, media, local government, and private sector. In the final selection, all scores of the 20 national finalists are set back to zero. They go through another round of teaching demonstration, write an essay, and are interviewed by the FBJ. The FBJ evaluates them according to the following criteria: personal qualities and character; instructional competence and teaching effectiveness as well as attitude towards the teaching profession; professional and community involvement; and awareness of socio-economic and political issues. The FBJ chooses the 10 Outstanding Teachers. The awardees are typically composed of 4 elementary school teachers, 4 secondary school teachers, and 2 tertiary school teachers. The FBJ may also elect not to give out all Awards if the finalists fall short of the standards it has set.

What is the prize? The monetary prize has been increasing considerably over the years—from PhP 10,000 cash prize per awardee in 1985 to PhP 500,000 in 2014. Each of

the 10 awardees also receives a gold medallion and a trophy while his/her school receives a plaque of recognition. The awardees may receive additional incentives such as participation in an educational tour outside the country (e.g., U.S. and Australia). Their nominators also received certificates of recognition.

The 10 unsuccessful national finalists each receive a cash award in the amount of PhP 20,000 and a certificate of recognition. The regional finalists who do not make it to the national level each receive PhP 10,000.

The whole search takes about 7 months, beginning in February when the call for nomination is issued and culminating in September when the Awards are given during the anniversary celebration of the Metrobank Foundation.

III. THEORETICAL BASIS AND HYPOTHESES

Our analysis is anchored on the theory of signaling, following the seminal papers of Akerlof (1970) and Spence (1974). An award, functioning as a signal, has been receiving attention in the economics discipline. Frey (2005) articulated testable propositions towards an economics of awards. Frey and Neckermann (2010) provide empirical support that suggests awards serve as signal. Frey and Gallus (2014) present a systematic appraisal of the signaling function of awards. Rablen and Oswald (2007) noted that winning an award acts as "one-time innovation" to social statues.

Winning the Metrobank Award is like receiving a stamp or a certification of being a "high quality" teacher from a third party. In an uncertain environment, the Award transmits a signal to both the school administration and the school constituents that the teacher-awardee is one of the best. The cost, including time and effort, associated with

the selection process and the amount of prize determines the credibility and strength of the signal (Frey and Gallus 2014). Given the Metrobank SOT selection process and the cash prize, the Award is taken seriously by the school administrators. The Award can play a critical role in the promotion of the winner as it reduces the search and evaluative cost to the school's administration.

Furthermore, not only does the award serve as a signal to others, it also provides external validation to the winners, which boosts their confidence. The signal to others and this external validation are mutually reinforcing, which together alter the professional trajectory and economic success of the winner. Nelson et al. (2001) have empirically shown that winners of The Academy Awards or The Oscars experienced a significant increase in their subsequent income.

With the foregoing discussion, we test the following hypotheses:

1. The 20 finalists, from whom 10 awardees are chosen, have similar characteristics. In the absence of the Award, their professional trajectory and economic success would be the same.
2. The Metrobank Award alters the professional trajectory of awardees. The Award acts as a one-time innovation that lets the awardees enjoy higher income growth after receiving the Award.

IV. DATA AND SUCCESS INDICATORS

We obtained a unique dataset from a survey of teachers who competed at the national level (see Appendices A and B for a detailed description of the survey). The survey, done in March-September 2014, targeted 380 national awardees and finalists from 1988 to 2010. The total sample was adjusted for the number of known deceased and

those that had been in the national finals twice. Sub-target respondents of the respective schools' heads were included. From the 380 target respondents, 252 teachers (about 66%) were interviewed and provided complete information. These 252 respondents constituted the full teacher-sample of our analysis.

Two sets of survey instruments were developed: one questionnaire for teachers and another for the school heads. They collected data on the teachers' professional profiles, socio-demographic characteristics, community involvement, socioeconomic characteristics of their household (including income and expenditure), and their overall perception of the Metrobank Foundation's Search for Outstanding Teachers (SOT) nomination. The data collected from the school heads include statistics on the educational profile of their teachers, performance indicators of the school, physical characteristics of the school, general assessment of his/her colleagues, and overall perception of the Search and the Award.

Who are the National Finalists?

As discussed in Section II, the 20 nominees who make it to the national level represent the best in the annual cohort of nominees. Any one of them could be awardees, except that the Award is conferred to only 10 teachers every year. Hence, 10 teachers are elevated to awardee status and 10 are unsuccessful national finalists. The total number of sample teachers included in the succeeding analysis is 252 teachers: 168 (66%) awardees and 84 (33%) finalists.

Among the 168 awardees, 39, 34, and 27 percent were teaching at the primary, secondary, and tertiary levels, respectively (Table 1). On the other hand, among the 84

finalists, 40, 30, and 30 percent were teaching at the primary, secondary, and tertiary levels, respectively.

TABLE 1
Number of Teachers at the Primary, Secondary and Tertiary Education at the Time of Nomination

Type of respondent	Primary level	Secondary level	Tertiary level	Total
Awardee	65	57	46	168
(%)	(39)	(34)	(27)	(100)
Finalist	34	25	25	84
(%)	(40)	(30)	(30)	(100)
Total	99	82	71	252
(%)	(39)	(33)	(28)	(100)

Pearson Chi-square = 0.4569; p – value = 0.796

Since the Metrobank Award started in the 1980s, a number of the national finalists would no longer be active in the teaching profession. Table 2 shows that about 58 percent of the 252 teachers in the sample were actively teaching in 2014, at the time of the survey, while 42 percent were not. Of the 168 teachers in the awardees group and 84 in the finalists group, 56 percent and 61 percent are still active, respectively.

TABLE 2
Number of Teachers that are Actively and Not Teaching

Type of respondent	Actively teaching	Not teaching	Total
Awardee	94	74	168
(%)	(56)	(44)	(100)
Finalist	51	33	84
(%)	(61)	(39)	(100)
Total	145	107	252
(%)	(58)	(42)	(100)

Pearson Chi-square = 0.5198; p – value = 0.471
Note: "Not teaching" consists of retired and resigned teachers. Based on full sample of 252.

The respondents' status of teaching employment is related to their age. Table 3 presents their average age, both at the time of their nomination and in 2014 when the survey was conducted. The actively teaching respondents were 44 years old on average when they joined the competition, while those no longer teaching were 53 years old. This shows that the latter competed in the Search later in their career. In 2014, the average age of respondents, actively teaching and not teaching, was 48.

TABLE 3
Teacher's Average Age in Years, by Type of Respondent and by Status of Teaching Employment

Type of respondent	Actively teaching		Not teaching	
	During last SOT nomination	2014	During last SOT nomination	2014
Awardee	44	56	53	69
Finalist	44	53	53	69
All	44	55	53	69

Table 4 compares the respondents' educational attainment at the time of their last nomination to Metrobank's SOT and in 2014. The data show vertical movements, with an increased number among those obtaining doctoral degrees. The national finalists who had bachelor's and master's degrees at the time of SOT nomination went on to pursue higher graduate studies.

TABLE 4
Number of Teachers by Educational Attainment

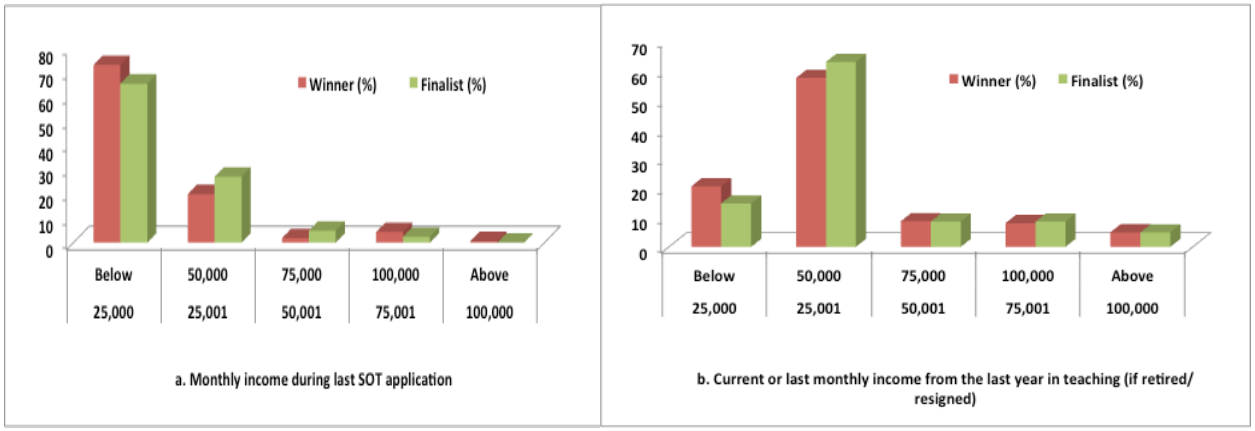
Type of respondent	Bachelor's degree[+]	Master's degree[++]	Doctoral degree [+++]	Total
A. During last SOT nomination				
Awardee	17	102	49	168
(%)	(10)	(61)	(29)	(100)
Finalist	10	50	24	84
(%)	(12)	(60)	(29)	(100)
B. 2014				
Awardee	6	69	93	168
(%)	(4)	(41)	(55)	(100)
Finalist	1	38	45	84
(%)	(1)	(45)	(54)	(100)

[+] Pearson Chi-square = 1.9853; p – value = 0.159
[++] Pearson Chi-square = 0.3649; p – value = 0.546
[+++] Pearson Chi-square = 1.5630; p – value = 0.211

Success Indicators

The distinguishing feature of this study is that the income of the national finalists serves as primary success indicator. To the best of our knowledge, this paper is the first to use income as the main indicator of success for an impact evaluation of an award. We obtained information on their income at the time of SOT nomination and in 2014 (or income at the time of retirement or resignation if no longer teaching). Figure 1 shows that at the time of SOT nomination, 73 percent of the awardees and 65 percent of the finalists had monthly incomes below PhP 25,000.00. In comparison, more of the respondents–58 percent of the awardees and 63 percent of finalists–had incomes between PhP 25,000.00 and PhP 50,000.00 in 2014.

FIGURE 1
Income Class Distribution of the Respondents During SOT Nomination and in 2014



The data on income at the time of SOT nomination and in 2014 allowed us to construct the respondents' average annual income growth. Computing for the annual growth also controls for the differences in the year the Award was received.

Non-pecuniary success indicators include change in educational attainment, material outputs, promotions, training, number of advisees, and community and other public service. Table 6 provides the summary statistics of the success indicators. The non-pecuniary success indicators have zero as minimum value because some national finalists joined the SOT near their retirement age.

TABLE 6
Summary Statistics of the Success Indicators

Success Indicators	Mean	Minimum	Maximum	Standard deviation
Income growth (%)	8	0	75	8.47
Monthly Salary (in PhP in 2014)	45,934	5,000	200,000	31,017
Non-pecuniary (annual average)				
A. Number of Promotions	**0.54**	**0.00**	**6.00**	**0.87**
B. Number of Material Outputs	**12.68**	**0.00**	**804.00**	**56.52**
Instructional Materials	4.98	0.00	150.33	16.14
Published Research	5.89	0.00	787.00	52.12
Original Creative Outputs	1.81	0.00	90.75	7.56
C. Number of Work Loads Units	**4.17**	**0.00**	**46.00**	**5.34**
Teaching Load	2.39	0.00	40.00	4.19
Administrative Work Load	1.43	0.00	10.00	2.17
Research Load	0.37	0.00	15.00	1.43
D. Number of Trainings Attended	**0.54**	**0.00**	**6.00**	**0.87**
Local trainings	0.19	0.00	4.00	0.50
National trainings	0.24	0.00	3.00	0.42
International trainings	0.10	0.00	1.67	0.23
E. Number of Awards Received	**0.59**	**0.00**	**25.00**	**1.78**
Local awards	0.35	0.00	15.00	1.06
National awards	0.21	0.00	7.00	0.59
International awards	0.04	0.00	3.00	0.22

V. MODEL SPECIFICATION AND ESTIMATION

To estimate the impact of the Award, we build statistical models that can isolate the effects of the Award on income growth of the respondents, controlling for other factors that may also influence income growth (e.g., whether the respondent is teaching in basic or in the higher education level). The analysis aimed to measure the impact accrued by the Metrobank awardees that are attributable only to the Award, which serves as signal to the school administrator of the quality of the teacher-awardee. This type of

impact evaluation is essentially a problem of missing data, because one cannot observe the welfare of the awardees (or program participants) had they not been awarded. Since there is no information on the counterfactual, the next best alternative is to compare the success indicators of awardees with those of a comparison group that has not won the award. For this purpose, we picked the annual 10 unsuccessful national finalists to serve as a comparison group as they are very similar to the treatment group, the Awardees. As discussed in section II, any of the 20 national finalists can be an Awardee, except that only 10 finalists are declared awardees annually. As such, those who received the Award would have had outcomes similar to those in the comparison group in the absence of the Award.

We used two methodologies to isolate the impact of the Award on the income growth of the Metrobank awardees, thus measuring its causality effect: multiple linear regression models (MLRM) and regression discontinuity design (RDD).

Multiple Linear Regression Model

To capture the impact of the Award on the income growth of the SOT awardees, a multiple linear regression model (MLRM) was built to isolate the influence of other factors of income growth. The regression model is given by equation (1).

(1) $$g_{yi} = \beta_0 + \gamma_i AWARD_i + \underline{X}_i\beta + \varepsilon_i$$

where g_y is the average annual income growth of the teacher; $AWARD = 1$ if the teacher is a Metrobank awardee and 0 if a finalist; $\underline{X}$ is a vector of control variables, which includes demeaned age of the teacher at the time of the Award (actual age less average

age of the group); square of demeaned age; gender of the applicant; regional location; applicant's school level category (elementary, high school, college); and ε is the error term. The impact of the Award is estimated through the γ (gamma) parameter.

As noted in Section III, the award functions as signal to school administrators of the quality of teachers who won the Award. As such, being a Metrobank Awardee can influence their promotion relative to unsuccessful national finalists. Model (1) is augmented with an interaction term of $AWARD$ and the number of promotion after receiving the Metrobank Award (P_i).

(2) $$g_{yi} = \beta_0 + \gamma_i AWARD_i + \rho_i AWARD_i P_i + \underline{X_i}\beta + \varepsilon_i$$

Regression Discontinuity Design

The regression discontinuity design (RDD) is a quasi-experimental technique, wherein the assignment to the treatment and control groups is not random. That is, the treatment and control groups may differ systematically in terms of ways related to the outcome. However, there is an assignment rule that one can use to assign individuals into treatment. This assignment rule is also known in the literature as continuous indicator or forcing variable. The cut-off in treatment assignment is a function of one or more continuous variables that generate a discontinuity in the treatment assignment. The RDD can also be considered as a local randomization around the cut-off, where the outcomes can be analyzed similarly to the randomized control trials (RCT) for observations close enough to the cut-off.

Thistlethwaite and Campbell (1960) first introduced RDD[4] to study the impact of the US National Merit Scholarship Program on students' success in obtaining additional college scholarships and their career aspirations. This award is given to students with at least a minimum score on a scholarship exam. The authors studied the impact of the award on students whose scores are near the cut-off and argued that assignment near the cut-off can be seen as behaving as if random, with the treatment group or awardees just above the cut-off score while the control group or non-awardees are those just below the cut-off.

In the Philippines, DSWD (2014) used RDD to determine the impact of conditional cash transfers on the welfare of households enrolled in the Pantawid Pamilyang Pilipino Program ("4Ps") compared to those who were not. Again, the estimation strategy was to measure the jump in the outcome variable, in this case predicted incomes, of those households below the poverty threshold with children 0-14 years old to that of households above the threshold with children 0-14 years old.

In our study, the RDD methodology is suited for analyzing the impact of the Award on the welfare as measured by the income growth of the SOT national finalists. The continuous indicator that can be used to differentiate between the treatment (awardees) and control (finalists/non-awardees) groups is the final average score (S) of the Final Board of Judges (FBJ).

The individuals that are "just around" the cut-off score are the 20 national finalists. As previously pointed out, any one of them can be an Awardee. Individuals with

[4] More recent studies using this methodology are Imbens and Lemieux (2008); Lee and Lemieux (2010); and Lee and Munk (2008).

scores just below the cut-off (the finalists) are good comparators to those that are just above the cut-off (the awardees). We then compared these two groups. Thus, under certain comparability conditions, proximity at the cut-off can be taken to be random. The Award serves as the treatment or the intervention. In its absence, the earning trajectory of the Metrobank's awardees would be the same.

In quantifying the impact of the Award on income growth, the outcome variable, the basic assumption of RDD is that the outcome variable is a continuous function of the cut-off score prior to the treatment. Econometrically, this is represented by the relationship between the cut-off score S and the outcome variable g_y before the treatment is applied given by equation (3).

(3) $$g_y = \alpha + \beta S + \varepsilon$$

where α and β are the regression coefficients and ε is the error term.

If the Award (treatment) has an effect on the outcome variable (income growth), a jump or discontinuity in the regression line at S is observed. The size of this discontinuity gives the measure of the impact of the Award. Econometrically, this can be shown when, after the treatment, the treatment group is affected by a constant treatment effect, β_0. Equation (3) is then revised to equation (4).

(4) $$Y_i = \alpha + \beta_0 T_i + \beta_i S_i + \varepsilon_i$$

where T_i is the treatment assignment indicator with a value of 1 if the individual is assigned to the treatment group (awardees) and 0 if assigned to the control group (finalists). This assignment is based on the cut-off score as discussed above and is given by equation (5).

(5) $$T_i = \begin{cases} 1 \; if \; S_i \; \geq 0 \\ 0 \; if \; S_i < 0 \end{cases}$$

where $-h < S_i < h$, i.e., within a band h.

The calculation of optimal band h is a function of the distribution of g_y. The determination of the bandwidth is a tradeoff between bias and variance. As the bandwidth is increased or as one moves away from the cut-off, the bias increases. The variance increases when one uses a narrower bandwidth. For this particular study, we used the optimal h proposed by Calonico, Cattaneo, and Titiunik (2014), more popularly known as the CCT bandwidth.

VI. IMPACT OF THE AWARD ON TEACHER'S WELFARE

Using MLRM and RDD, we examined the impact of the Award on the welfare of the Metrobank Foundation awardees using average annual income growth as the proxy variable of welfare. The impact on the pecuniary success indicator is supported by the results using the non-pecuniary success indicators as proxy of welfare.

Table 7 shows the teachers' average annual income growth since the year of nomination until 2014. Overall, the average annual income of the awardees grew by 8.42 percent, while that of the finalists grew by 7.22 percent. The two averages are not significantly different from each other, using the standard t-test.

TABLE 7
Average Annual Growth of Teachers' Income

	Awardee	Finalist	t – stat
Across all samples	8.42	7.22	1.04
	[0.73]	[0.73]	
Not teaching	8.82	7.87	0.38
	[1.52]	[1.63]	
Actively teaching	8.13	6.82	1.42*
	[0.59]	[0.63]	

Note: The growth in income is computed since the year of nomination until 2014.
[ ] Standard error. * significant at 10% level

However, by further classifying the respondents into actively teaching or no longer teaching (retired/resigned) at the time of the survey (2014), significant differences in average annual income growth became noticeable. In particular, the average annual income growth of SOT awardees who were actively teaching in 2014 was 8.13 percent, which is significantly higher than the actively teaching finalists' average growth of 6.82 percent. On the other hand, the difference is not significant for those who were no longer teaching in 2014 (Table 7). The initial analysis indicates the impact of the Award having a significant difference between actively teaching awardees and finalists.

This result is validated using MLRM and further supported by RDD. The outcome similarly points to the impact of the Award on the success of the actively teaching respondents.

Impact of the Award Gleaned from Multiple Linear Regression Model (MLRM)

The empirical results from the regression model in equation (1) are given in Tables 8a and 8b. The estimated model in Table 8a includes all the respondents in the analysis, while the results from the estimated model in Table 8b used the reduced data

set, utilizing only the information from the actively teaching awardees and finalists at the time of the survey.

To test the difference in the income growth (the outcome variable) of "older" and "younger" national finalists of Metrobank's SOT, we used the demeaned age (transformed age) of the national finalists at the time of nomination to the SOT. The demeaned age is just the age of the applicant less the average age, computed at 48 years.

The results in Table 8a show that the average annual income growth of Metrobank awardees is significantly higher, by about 1.43 percentage points, than that of the finalists, controlling for other factors, and is significant at the 10-percent level. The results also showed that other controlling variables such as gender, regional, school level and school type are not significantly related to income growth. The results make sense considering that the two groups in the model (awardees and finalists) can be treated as coming from a single group with basically the same characteristics, where the only difference is the assignment (as if randomly) of being a Metrobank awardee or finalist.

TABLE 8a
Regression Estimates for Determinants of Annual Income Growth, n = 252

Explanatory Variables	Est. Coeff	Robust SE	t-stat
Award (Awardee =1)	1.43*	0.95	1.51
Demeaned Age (Age minus Ave.)	0.01	0.08	0.10
Square of Demeaned Age	0.02*	0.01	1.52
Gender (Male=1)	0.05	1.50	0.03
Regional Location (NCR=1)	-1.80	1.22	-1.47
School Level: Elementary	-1.34	1.42	-0.94
School Level: High School	-1.21	1.20	-1.01
School Type (Public School = 1; Private = 0)	-1.27	2.46	-0.52
Constant	8.50	2.74	3.10

*Significant at the 10% level (one-sided alternative); base for school level category is college level

In Table 8b, the same regression specification as the one used in Table 8a was employed but using only a reduced sample of actively teaching respondents. In this case, the model only considered the respondents (awardees and finalists) who were still actively teaching at the time of the survey in 2014. The results show two variables that are significantly related to income growth: the Award and the demeaned age of the respondents. In particular, the Award tends to increase the average income growth of awardees by about 1.58 percentage points, controlling for other factors.

TABLE 8b
Regression Estimates for Determinants of Annual Income Growth, Active Teachers

Explanatory Variables	Est. Coeff	Robust SE	t-stat
Award (Awardee=1)	1.58**	0.88	1.80
Demeaned Age of Applicant (Age minus ave)	-0.15***	0.07	-2.00
Square of Demeaned Age	0.0003	0.01	0.04
Gender (Male=1)	-0.47	1.03	-0.46
Regional Location (NCR=1)	-1.54	1.18	-1.30
School Level: Elementary	-1.37	1.22	-1.13
School Level: High School	-0.60	1.12	-0.53
School Type (Public School = 1; Private = 0)	1.00	1.87	0.53
Constant	6.34	2.15	2.95

*** Significant at the 5% level; ** significant at the 10% level (two-sided)

The other variable that is significantly related to income growth is the demeaned age of the applicant. The results show that national-finalists with ages higher than the average age at the time of their nomination tend to have lower income growth compared with national-finalists whose ages are lower than the average. In particular, for every one-year increase from the average age, the estimated average income growth decreases by

about 0.15 percentage point, controlling for other factors. This result supports the previous observation that the impact of winning the Metrobank's SOT is relatively higher for awardees who are younger at the time of their nomination. The intuitive explanation is that "younger" Metrobank SOT awardees have more years in their career to capitalize on the Award.

We augmented equation (1) with an interaction term of $AWARD$ and the number of promotion after receiving the Metrobank Award (P_i). Due to uncertain environment, the award serves as signal to school administrators of the quality of the teacher-awardee. Winners have higher income growth because they are promoted more often and get higher compensation in each promotion compared to non-winners.

The t-test in Table ___ shows that for active teachers at the time of the survey, the average number of promotions is significantly higher for winners compared to finalists (2.07 times v. 1.67), significant at the 10% level (one-sided alternative).

TABLE ___
Difference on the Average Number of Promotions, Active Teachers

Category	Number of Teachers	Mean	SE	t-stat
Winners	85	2.07	0.20	1.31
Finalists	46	1.67	0.19	

Table ___ shows the results of model 2. For active teachers at the time of the survey, the interaction between winners and number of promotions is positive and significant. This implies the impact on the average income growth of promotion is higher

for winners compared to finalists. The frequency (from the t-test) and incremental increase (most probably the number of steps or ranks) are higher for winners compared to the unsuccessful national finalists.

TABLE ___
Regression Results for Determinants of Annual Income Growth

Explanatory Variables	Full data			Active Teachers only		
	Est. Coeff	Robust SE	t-stat	Est. Coeff	Robust SE	t-stat
Award (Awardee=1)	1.03	1.06	0.97	0.7	1.14	0.62
Demeaned Age of Applicant (Age minus ave)	0.01	0.08	0.15	-0.12*	0.09	-1.31
Square of Demeaned Age	0.01*	0.01	1.47	0	0.01	-0.11
Gender of Applicant (Male=1)	0.63	1.12	0.56	-0.69	1.11	-0.62
Regional Location (NCR=1)	-2.29***	0.95	-2.42	-1.73*	1.31	-1.32
Elementary School Applicant (indicator var)	-0.05	1.12	-0.04	-0.95	1.26	-0.76
High School Applicant (indicator var)	0.43	1.04	0.42	-0.18	1.18	-0.15
School Type (Public School = 1; Private = 0)	0.49	1.48	0.33	0.72	2.13	0.34
Interaction Term (Awardee*No. of Promotions)	0.41*	0.27	1.53	0.57**	0.34	1.69
Constant	5.35	1.85	2.9	6.58	2.5	2.63

*** significant at the 5% level; * significant at the 10% level (one-sided alternative)
** significant at the 10% level (two-sided);

Impact of the Award Using Regression Discontinuity Design

The results from utilizing MLRM shows that the other control variables such as age, gender, location, and school type are not significantly related to income growth. This justifies further analysis using Regression Discontinuity Design (RDD). This supports the idea that two groups in the model, awardees and finalists, can be regarded as basically having the same characteristics, where the only difference is the "as-if random" assignment of being a Metrobank awardee or finalist.

Applying RDD reduced the number of observations following the Calonico, Cattaneo and Titiunik (CCT, 2014) bandwidth. From the original 252 teachers, the number of observations was reduced to 67 for all respondents. For actively teaching respondents, the number was reduced from 141 to 58 respondents after applying the CCT bandwidth. For respondents with age less than or equal to 48 years, the number was reduced from 136 teachers to 42 teachers after applying the CCT bandwidth.

Table 9 presents the empirical results using RDD. The estimated impact of the Award on the average annual income growth of all teachers (awardees and finalists)—about 1.58 percentage points—is not significant. However, when only the actively teaching respondents at the time of the survey were included in the analysis, the estimated impact on the awardees is 2.51 percentage points and is significant at the 10-percent level (one-sided alternative). This is consistent with the results of the previous analyses using MLRM and the standard comparison of means.

TABLE 9
RDD Estimates. Impact of the Award on Teachers' Average Income Growth

Outcome		Impact (% points)
Average income growth (all teachers)	Impact (percentage point)	1.58
	Standard error	2.03
	z-stat	0.78
Average income growth (actively teaching)	Impact (percentage point)	2.51
	Standard error	1.95
	z-stat *	1.29
Average income growth (age less than or equal to 48)	Impact (percentage point)	3.59
	Standard error	2.16
	z-stat **	1.66

Note: *significant at the 10% one-sided test; ** significant at the 5% one-sided test. CCT bandwidth is the Calonico, Cattaneo and Titiunik bandwidth (2014).

We also estimated the impact of winning the SOT using the subset of respondents who were 48 years old (the entire respondents' average age at the time of SOT nomination) or younger. The results show a relatively higher impact—at 3.59 percentage points—of the Award on the average annual income of the awardees (Table 9). This implies that the impact of the Award is relatively bigger for "younger" awardees than "older" awardees.

While the use of RDD has its limitation of reducing the number of sample due to the application of bandwidth around the cut-off, its great advantage is the transparent graphical analysis. Figure 2 plots the growth in income versus standardized scores of the final board of judges. Figure 2a is a scatter plot of the reduced sample of both active and non-active teachers. Figure 2b shows the regression function fit of the 58 active teachers after applying the first order global polynomial. The figure clearly shows a jump in the relationship of the income growth and the normalized judges score around the cut-off score. This jump represents the impact of the Metrobank Award, estimated at 2.51 percentages higher for the winners relative to the finalists.

The use of RDD allows for transparent graphical analysis. The intercept for the treatment group moves to $\alpha + \beta_0$, where β_0 is the constant effect. This constant effect quantifies the effect of the treatment, in this case the Award. Moreover, RDD can isolate the impact of the Award.

FIGURE 2a
Scatterplot of Income Growth Rate
(Reduced sample, Active and Non-active)

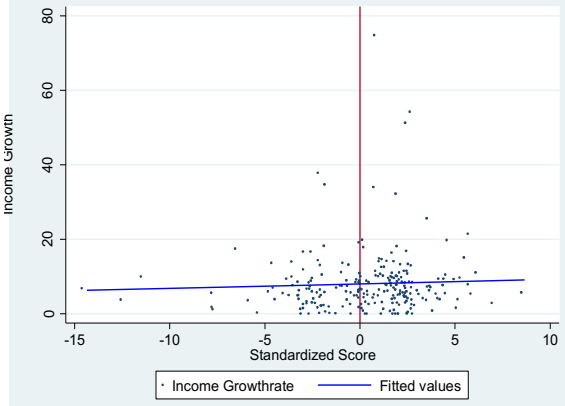
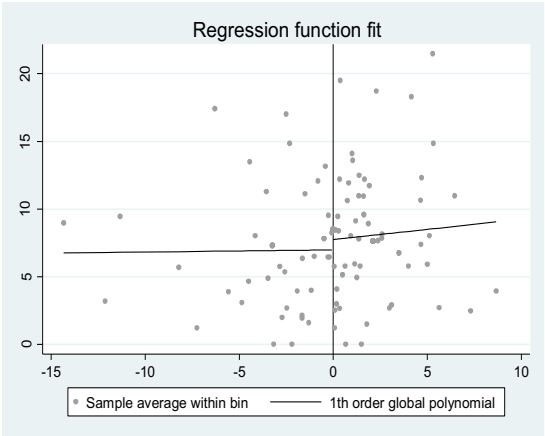


FIGURE 2b
Linear Regression Discontinuity
(Reduced Sample, Active Teacher)



Source: Authors' estimate using the data

Using the range of estimated impact of the Award presented in Table 9, we simulated the cumulative effect on incomes over the remaining working life of the awardees. The awardees are estimated to be actively teaching for 21 more years after receiving the Award, since the average age of the awardees is 44 years old and the retirement age is 65 years old. Table 10 presents the results of the cumulative value of the impact of the Award.

TABLE 10
Cumulative Value of the Impact of the Metrobank Award (in PhP)

		Annual Increase		
Year	MLRM	Scenario 1	Scenario 2	Scenario 3
	1.49 percentage points	1.58 percentage points	2.51 percentage points	3.59 percentage points
1	8,046	8,532	13,554	19,386
2	8,166	8,667	13,896	20,082
3	8,288	8,804	14,246	20,803
4	8,411	8,943	14,605	21,550
5	8,536	9,084	14,973	22,323
6	8,663	9,228	15,350	23,125
7	8,792	9,373	15,737	23,955
8	8,923	9,522	16,133	24,815
9	9,056	9,672	16,540	25,706
10	9,191	9,825	16,957	26,629
11	9,328	9,980	17,384	27,585
12	9,467	10,138	17,822	28,575
13	9,608	10,298	18,271	29,601
14	9,751	10,461	18,732	30,663
15	9,896	10,626	19,204	31,764
16	10,043	10,794	19,688	32,905
17	10,193	10,964	20,184	34,086
18	10,345	11,138	20,693	35,309
19	10,499	11,314	21,214	36,577
20	10,655	11,492	21,749	37,890
21	10,814	11,674	22,297	39,250
Total (PhP)	**196,671**	**210,527**	**369,227**	**592,578**

Note: average income (2014 = 45000)

Since the impact of the Award is from 1.58 to 3.59 percentage points, the cumulative value of the impact of the Award ranges from PhP 210,527 to PhP 592,578. This is in addition to the cash prize each of the awardees received at the time of bagging the Award.

Impact of the Award on the teachers' career (using non-income success indicators)

The results of the analysis using non-income success indicators point to a similar direction as that using income as indicator. In terms of workload, we observed a significant difference between the different workloads of the awardees and finalists after participation in the SOT: the finalists had more workload (Table 12).

TABLE 12
Number of Work Load of Teachers After Nomination in SOT

Work load category	Actively teaching			Not teaching		
	Awardee	Finalist	t - stat	Awardee	Finalist	t - stat
Teaching	8.75	13.55	2.14**	18.12	22.00	1.41*
	[1.22]	[2.05]		[1.53]	[2.30]	
Administrative	15.09	15.60	0.17	8.64	7.85	0.30
	[1.77]	[2.44]		[1.52]	[1.93]	
Research	1.66	3.50	2.27**	2.29	1.97	0.26
	[0.34]	[0.91]		[0.70]	[1.04]	
Total	25.19	32.65	2.61***	29.05	31.82	0.84
	[1.71]	[2.24]		[1.70]	[3.10]	

Note: [ ] Standard error. * significant at 10% level, ** at 5% level, *** at 1% level
+ Current load or load from last year in teaching if retired/resigned

Similarly, we found a significant difference between the awardees and finalists who were actively teaching at the time of the survey in terms of instructional materials production (Table 13). The awardees produced relatively more than the finalists.

TABLE 13
Number of Material Outputs of Teachers After Nomination in SOT

Material outputs category	Actively teaching			Not teaching		
	Awardee	Finalist	t - stat	Awardee	Finalist	t - stat
Instructional material	37.36	12.98	1.29*	43.46	39.82	0.23
	[13.68]	[3.13]		[8.92]	[12.22]	
Published research	30.21	10.02	0.93	18.65	120.61	1.60*
	[15.69]	[2.15]		[4.61]	[95.35]	
Original creative output	5.87	12.14	1.09	25.09	15.21	0.56
	[1.52]	[7.38]		[11.52]	[4.40]	
Total	73.45	35.14	1.31*	87.20	175.64	1.28
	[20.83]	[9.02]		[13.63]	[39.56]	

Note: [ ] Standard error. * significant at 10% level

Winning the SOT also made a significant difference in terms of opportunity to undergo training abroad for both actively teaching and no longer teaching respondents (Table 14a). Awardees obtained relatively more training abroad than the finalists. Some of the training cited by the respondents include the International Conference in Educational Research, International Conference of School Heads, International Leadership Training for Educators and Education Management, International Conference for Globalization and Sustainability, World Conference on Artificial Intelligence in Education, Association of Southeast Asian Institutions of Higher Learning International Conference, as well as going on postdoctoral studies. This is because an additional perk of being an SOT awardee is that Metrobank Foundation supports teachers' participation in international conferences. As Table 14b shows, there is a significant difference between the awardees and finalists among the actively teaching respondents in terms of the average number of training programs they attended that have been coursed through Metrobank Foundation.

TABLE 14a
Number of Trainings Attended by the Teachers After Nomination in SOT

Training programs+	Actively teaching			Not teaching		
	Awardee	Finalist	t - stat	Awardee	Finalist	t – stat
Local	1.71	1.59	0.21	1.27	2.00	0.86
	[0.34]	[0.46]		[0.33]	[1.04]	
National	2.62	1.86	0.89	1.59	2.24	0.98
	[0.40]	[0.37]		[0.32]	[0.68]	
International	1.44	0.84	1.42*	0.53	0.21	1.36*
	[0.29]	[0.19]		[0.15]	[0.09]	
Total	5.94	4.29	1.53*	3.39	4.45	0.79
	[0.71]	[0.63]		[0.53]	[1.64]	

Note: Include postdoctoral studies. [ ] Standard error. * significant at 10% level

Table 14b
Number of Metrobank-aided Trainings Attended by the Teachers After Nomination in SOT

	Actively teaching			Not teaching		
	Awardee	Finalist	t - stat	Awardee	Finalist	t - stat
Number of training programs	0.68	0.08	2.66***	0.18	0.12	0.48
	[0.16]	[0.04]		[0.06]	[0.09]	

Note: [ ] Standard error. *** significant at 1% level

The Award also serves a signal to the community of the performance of the winning teacher, at least locally. Table 15 shows that there is a significant difference between the awardees and finalists among the actively teaching respondents in terms of professional or community awards. Examples of such awards received by respondents are Best Community Worker, Ulirang Guro Award, Natatanging Guro Award, Dakilang Guro Award, Outstanding Teacher of the Division, Most Popular Administrator, Banwahanon Award, and Jose Rizal Award for Education.

Table 15
Number of Professional or Community Awards Received by the Teachers After Nomination in SOT

Type of award	Actively teaching			Not teaching		
	Awardee	**Finalist**	**t - stat**	**Awardee**	**Finalist**	**t - stat**
Local	2.67	1.74	1.71**	2.08	1.85	0.42
	[0.37]	[0.26]		[0.29]	[0.51]	
National	1.24	1.38	0.47	1.24	1.33	0.27
	[0.17]	[0.26]		[0.18]	[0.30]	
International	0.22	0.12	0.84	0.24	0.30	0.39
	[0.07]	[0.07]		[0.09]	[0.13]	
Total	4.12	3.24	1.26	3.57	3.48	0.10
	[0.46]	[0.43]		[0.39]	[0.85]	

Note: [ ] Standard error. ** significant at 5% level

Does a teacher winning the Metrobank Award contribute to the success of the school?

We also examined whether or not the impact of the Award extends to the awardee's school and immediate community. We used the data obtained from the principal or school head, which include their perception of whether or not the Award contributed to the improvement of the school. Table 16 shows the distribution of school heads who provided complete information. Some schools have had two or more finalists or awardees. A school that has had an awardee is counted under "awardee."

TABLE 16
Distribution of School Heads by School Level

	Awardee's school[+ +]	Finalist's school[+]	Total
Primary Level	56	29	85
(%)	(66)	(34)	(100)
Secondary Level	35	23	58
(%)	(60)	(40)	(100)
Tertiary Level	17	10	27
(%)	(63)	(37)	(100)
Total	108	62	170
(%)	(64)	(36)	(100)

[+] If all SOT applicants from the school are finalists
[+ +] If at least one of the SOT applicants from the school is a awardee
Note: Data shown are the ones with complete information.

We used three broad indicators to represent the welfare of the school: 1) physical characteristics of the school such as the appearance of dormitories, cafeteria, and surroundings; 2) the school's ability to raise funds; and 3) values of teachers, which we defined to be the general attitude toward the profession, students, peers, and school administrators. Table 16 shows the impact of having an SOT awardee by school level and by location. In terms of physical characteristics, there is a significant difference between schools having awardees and those having finalists at the secondary level (Table 17a), as well as between schools in the rural areas and those in urban areas (Table 17b). The interviews revealed that the change in physical characteristics is prominent in the school dormitories.

Table 17a
Impact of Having an SOT Awardee on the School, By School Level

	Primary		t - stat	Secondary		t - stat	Tertiary		t - stat
	W	F		W	F		W	F	
School's physical characteristic	1.93 [0.30]	2.10 [0.45]	0.33	2.91 [0.55]	1.74 [0.52]	1.47*	2.06 [0.63]	2.70 [0.97]	0.58
School's ability to raise funds	0.88 [0.14]	1.28 [0.23]	1.5*	0.91 [0.20]	0.78 [0.23]	0.42	0.76 [0.12]	0.50 [0.16]	0.66
Colleagues' overall values	4.77 [0.41]	4.28 [0.60]	0.68	3.89 [0.57]	4.70 [0.66]	0.91	3.65 [0.82]	4.90 [1.07]	0.93

Note: [ ] Standard error. * significant at 10% level

Table 17b
Impact of Having SOT Finalists on the School, By School Location

	Rural		t - stat	Central/Other urban		t - stat
	Awardee's school	Finalist' school		Awardee's school	Finalist's school	
School's physical characteristics	1.92 [0.57]	0.90 [0.45]	1.34*	2.42 [0.29]	2.62 [0.40]	0.39
School's ability to raise funds	0.62 [0.20]	0.65 [0.25]	0.11	1.00 [0.13]	1.12 [0.18]	0.55
Colleagues' overall values	2.88 [0.66]	2.45 [0.77]	0.43	4.67 [0.35]	5.52 [0.39]	1.52*

Note: [ ] Standard error. * significant at 10% level

Moreover, the interviews with the SOT awardees/finalists and their school heads revealed that the Award has created an incentive to build a tradition of developing teachers who are potential finalists/awardees in the SOT. Table 18 shows the difference between schools with awardees and finalists in terms of having succeeding applicants in the SOT after the school had successfully fielded a candidate to the national level of the SOT. The difference is significant at the primary/secondary level.

Table 18
Number of Succeeding Applicants, By School Level

	Awardee's school	Finalist's school	t - statistics
Basic education (primary/secondary)	0.98 [0.18]	0.40 [0.10]	2.27**
Tertiary	0.53 [0.36]	1.30 [0.47]	1.29

Note: [ ] Standard error. ** significant at 5% level

VII. CONCLUDING REMARKS

The Metrobank Foundation Award for Outstanding Teachers is the most prestigious award in the Philippines that recognizes excellence in teaching. More than 300 exceptional elementary, high school, and college teachers from all over the country have received this highly coveted award since its first conferment in 1985. Now, 30 years later, we ask whether the Award has affected the economic earnings and professional trajectory of its recipients.

Using a unique dataset from a survey of SOT awardees and finalists who participated in the SOT from 1988 to 2010, we investigated the impact of the Award on the economic success of the recipients using a comparison of means, a multiple linear regression model (MLRM), and a regression discontinuity design (RDD). Our main findings are that winning teachers who are still in active service obtained more subsequent rewards relative to teachers that are no longer in service.

We used the respondents' average annual income growth as the primary income-indicator of success. When we considered the entire sample, we found no significant difference in the average annual income growth of the awardees and the finalists using a standard t-test. However, when we classified the respondents into actively teaching and

no longer teaching (retired/resigned) at the time of the survey (2014), the difference in average annual income growth became noticeable. The SOT awardees who were still actively teaching in 2014 had an average annual income growth of 8.13 percent, which is significantly higher than the finalists' average of 6.82 percent.

This result was bolstered when the data were analyzed using MLRM and RDD. We used the MLRM to isolate the influence of other factors of income growth. On the other hand, the selection method of the SOT provides a perfect sample for using RDD, which is a quasi-experimental technique. While only 10 Awards are given out annually, anyone from the SOT's 20 national finalists can be an awardee. Hence, individuals with scores just below the cut-off are good comparators to those who are just above the cut-off.

We used MLRM on the full sample and on the actively teaching sample. When applied to the latter, the Award tends to increase the average income of the awardees by about 1.49 percentage points. The results also show that respondents with ages higher than the sample's average age at the time of SOT nominations tend to have lower income growth compared to respondents whose ages were lower than the average.

With RDD, when only the actively-teaching sample at the time of the survey was included in the analysis, the estimated impact of the Award on the awardees increased to 2.51 percentage points and is significant at the 10-percent level (one-sided alternative). The impact is not significantly different, however, when all respondents in the sample were included in the analysis. This result is consistent with those of the previous analyses, using the comparison of means and MLRM.

The results are robust when we considered the non-income success indicators such as production of material outputs, participation in international trainings, and local community awards received. These indicators showed a significant impact of the Award on the awardees relative to the finalists.

Moreover, the Award has a relatively higher impact on awardees who were younger during the time of SOT nomination than those who were older. The intuitive explanation is that the "younger" SOT awardees have more years in their career to capitalize on the Award. The results suggest that age cut-off might be warranted for the Award to have maximum impact on the winning teacher's professional trajectory. Indeed, other meritorious awards have age cut-offs. For example, the Ten Outstanding Young Scientists Award (Philippines) has an age limit of 41 years old; John Bates Clark Medal Award for Young Economists (USA), 40 years old; and MacArthur Fellows Genius Grant (USA), 20-40 years old.

References:

Akerlof, G. 1970. "The Market of Lemons: Quality Uncertainty and the Market Mechanism." *The Quarterly Journal of Economics* 84(3): 488-500.

Becker, G. and N. Tomes. 1976. "Child Endowments and the Quantity and Quality of Children." *The Journal of Political Economy* 84(4): S143-S162.

Becker, G. and N. Tomes. 1986. "Human Capital and the Rise and Fall of Families." *Journal of Labor Economics* 4(3): S1-S39.

Calonico, S., M. D. Cattaneo, and R. Titiunik. 2014. "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs." *Econometrica* 82(6): 2295-2326.

Department of Social Welfare and Development (DSWD). 2014. Keeping Children Healthy and in School: Evaluating the Pantawid Pamilya Using Regression Discontinuity Design Second Wave Impact Evaluation Results, November 2014 Report.

Deuchert, E., K. Adjamah, and F. Pauly. 2005. "For Oscar glory or Oscar money?" *Journal of Cultural Economics* 29(3): 159-176.

Elliott, C. and R. Simmons. 2008. "Determinants of UK Box Office Success. The Impact of Quality Signals." *Review of Industrial Organization* 33(2): 93-111.

Friberg, R. and E. Gronqvist. 2012. "Do Expert Reviews Affect the Demand for Wine?" *American Economic Journal: Applied Economics* 4(1): 193-211.

Frey, B. S., 2005. "Knight Fever - Towards an Economics of Awards," CESifo Working Paper No. 1468; IEW Working Paper No. 239. Available at SSRN: http://ssrn.com/abstract=717302

Frey, B. S. and J. Gallus. 2014. "Awards are a special kind of signal," Center for Research in Economics, Management and the Arts Working Paper No. 2014-04. http://www.crema-research.ch/papers/2014-04.pdf

Frey, B. S. and S. Neckermann. 2010. "Awards as Signals," CESifo Working Paper Series No. 3229. Available at SSRN: http://ssrn.com/abstract=1699131

Ginsburgh, V. and J. van Ours. 2003. "Expert Opinion and Compensation: Evidence from a Musical Competition." *American Economic Review* 93(1): 289-296.

Ginsburgh, V. 2003. "Awards, Success and Aesthetic Quality in the Arts." *Journal of Economic Perspectives* 17(2): 99-111.

Imbens, G.W. and T. Lemieux. 2008. "Regression Discontinuity Designs: A Guide to Practice." *Journal of Econometrics* 142(2): 615-635.

Lee, D. and T. Lemieux. 2010. "Regression Discontinuity Designs in Economics." *Journal of Economic Literature* 48(2): 281-355.

Lee, H. and T. Munk. 2008. "Using Regression Discontinuity Design for Program Evaluation," Section on Survey Research Methods of the Joint Statistical Meetings, 1675-1682, American Statistical Association, USA.

Nelson, R.A., M.R. Donihue, D.M. Waldman, and C. Wheaton. 2001. "What's an Oscar worth?" *Economic Inquiry* 39(1): 1-6.

Ponzo, M. and V. Scoppa. 2015. "Experts' Awards and Economic Success: Evidence from an Italian Literary Prize," *Journal of Cultural Economics*, First online: 21 January 2015: (1-72), http://dx.doi.org/10.1007/s10824-015-9239-4

Rablen, M. and A.. Oswald. 2008. "Mortality and immortality: The Nobel Prize as an experiment into the effect of status upon longevity," *Journal of Health Economics*, 27(6): 1462-1471.

Reinstein, D. and C. Snyder. 2005. "The Influence of Expert Reviews on Consumer Demand for Experience Goods: A Case Study of Movie Critics." *The Journal of Industrial Economics* 53(1): 27-51.

Skelton, A. 2004. "Understanding 'teaching excellence' in higher education: a critical evaluation of the National Teaching Fellowships Scheme," *Studies in Higher Education*, 29(4): 451-468.

Spence, A. M. 1973. “Job Market Signaling,” *Quarterly Journal of Economics,* 87: 355-374.

Spence, A. M. 1974. *Market Signaling*. Cambridge: Harvard University Press.

Thistlethwaite, D. and D. Campbell. 1960. "Regression-Discontinuity Analysis: An alternative to the ex post facto experiment.″ *Journal of Educational Psychology* 51(6): 309-317.

APPENDIX A. CONDUCT OF THE SURVEY

Survey

Appendix Figure 1 shows the national finalists' distribution across the country: 58 percent in Luzon, 23 percent in the Visayas, and 19 percent in Mindanao. Understandably, due to proximity and relatively easy access to information about the SOT, the National Capital Region (Manila) has the biggest number of national finalists, with 131 teachers. Manila is followed by Region 6, with 62 national finalists.

To shed light on the research question of this study, two sets of survey instruments were developed: questionnaire for the Teachers (12 pages) and questionnaire for the School Heads (7 pages) (see Attachment 1 and Attachment 2). For areas with only one targeted respondent (e.g., Palawan), a "for mail" version of the survey instrument was developed. This version was also used for some of those who were abroad and could not be interviewed via Skype or phone.

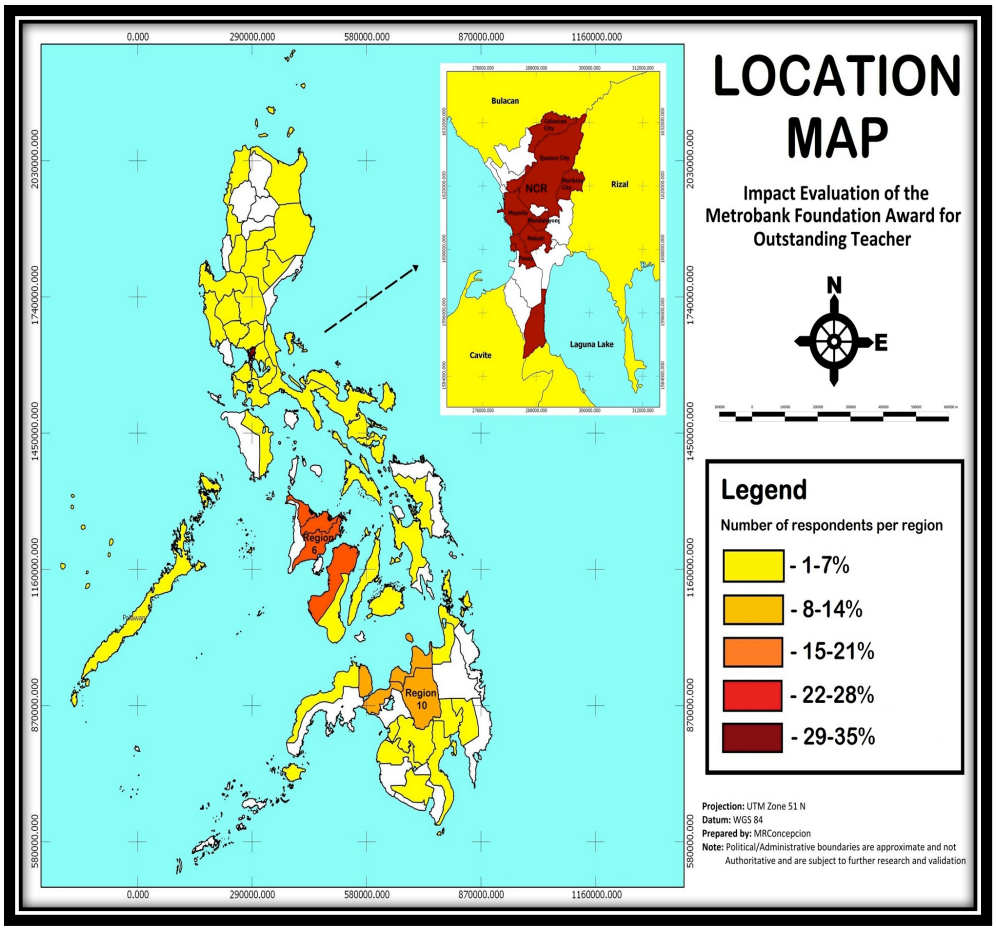
The survey collected data on teachers' professional profile, socio-demographic characteristics, community involvement, socioeconomic characteristic of the teachers' household including income and expenditure, and their overall perception of the Metrobank Foundation Search for Outstanding Teachers (SOT). The data collected by the survey from the school head include statistics on the educational profile of their teachers, performance indicators of the school, physical characteristics of the school, and school head's general assessment of his/her colleagues and overall perception of SOT.

The default method of the survey was a face-to-face directed interview. Self-administered survey was conducted among 2 percent of the respondents. This is where we used the "for mail" version of the questionnaire.

The respective school heads of the identified national finalists were also interviewed. In cases where the Principal/Dean was not available during the survey period or was not familiar with the national finalist, the Officer-in-Charge or a recognized key person by the school head was interviewed.

Excerpts of their overall perception of the SOT and the Award are provided in Attachment 3.

Appendix Figure 1. Project Location Map



The survey was conducted from March to September 2012 (see Appendix Table 1). The lists of respondents were obtained from the database of Metrobank Foundation. A

combination of quantitative and qualitative research methods was employed. The face-to-face interview, secondary data review, and personal observation of the researchers were used in gathering pertinent data from the respondents and their respective schools. Secondary data and information, which include the teacher's curriculum vitae, service record, performance evaluation rating, school performance indicator and school mean percentage score on National Achievement Test or Board Licensure Examination, were requested in advance to expedite the interview process.

Appendix Table 1. Survey timeline

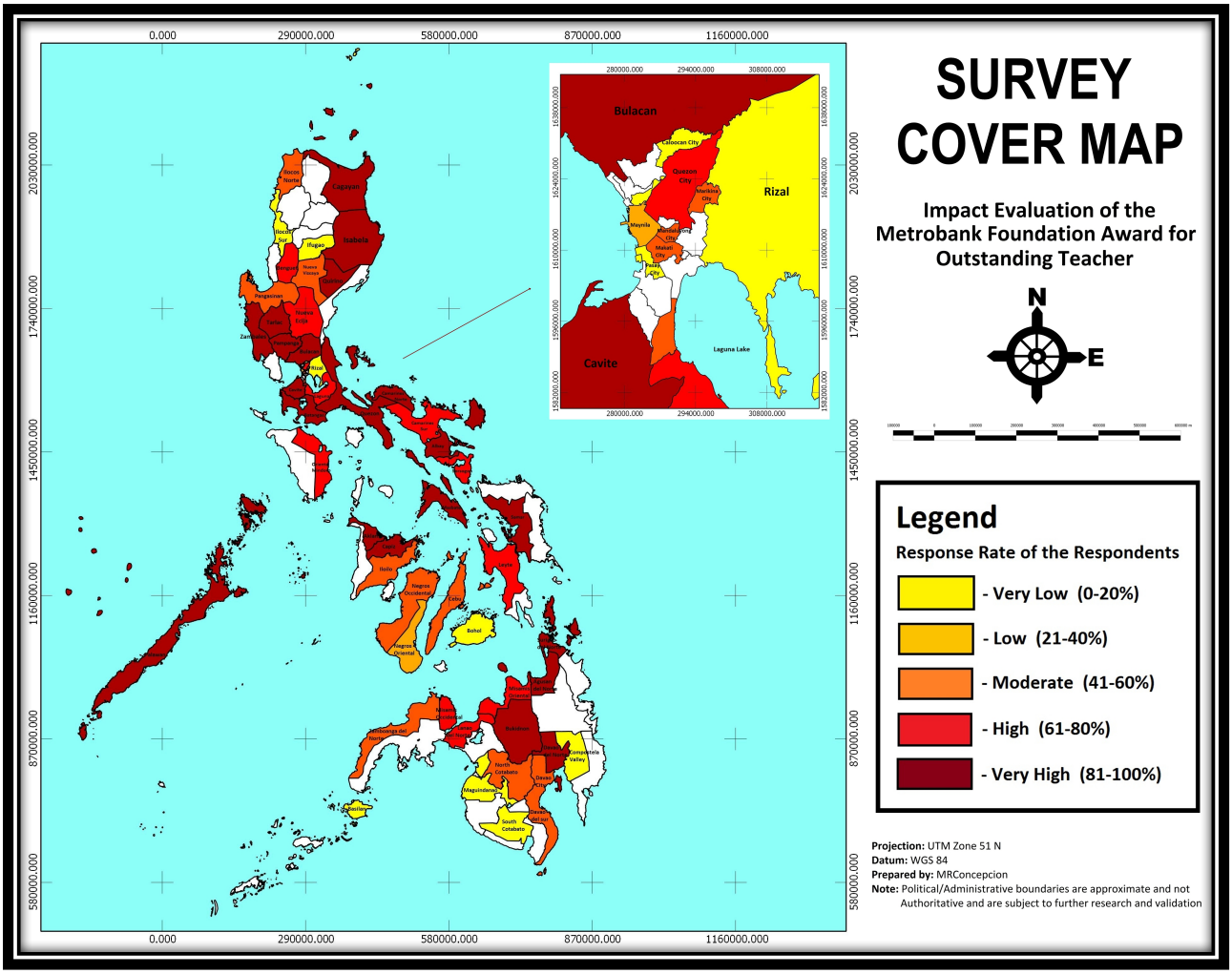
PROJECT SITES	March				April				May				June				July				August				September			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
CAR	■	■																										
Region I				■	■																							
Region II		■	■	■																								
Region III			■	■																								
Region IV-A					■	■	■	■					■	■														
Region IV-B					■						■	■																
NCR	■	■	■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Region V	■	■																										
Region VI	■	■	■	■																								
Region VII			■	■								■	■	■	■	■												
Region VIII					■	■			■	■	■																	
Region IX											■	■	■	■	■													
Region X									■	■	■	■	■	■														
Region XI								■	■																			
Region XII									■	■	■																	
CARAGA										■	■	■																
ARMM													■	■														

Note: ■ Accomplished Survey

The survey covered 63 provinces (Appendix Figure 2): Benguet, Ifugao, Ilocos Norte, Ilocos Sur, Pangasinan, Batanes, Cagayan, Isabela, Nueva Vizcaya, Quirino, Bulacan, Nueva Ecija, Pampanga, Tarlac, Zambales, Batangas, Cavite, Laguna, Quezon, Rizal, Oriental Mindoro, Palawan, Metro Manila, Albay, Camarines Norte, Camarines

Sur, Catanduanes, Masbate, Sorsogon, Aklan, Capiz, Iloilo, Negros Occidental, Bohol, Cebu, Negros Oriental, Leyte, Samar, Zamboanga City, Zamboanga del Norte, Zamboanga Sibugay, Basilan, Bukidnon, Camiguin, Lanao del Norte, Misamis Occidental, Misamis Oriental, Davao del Norte, Davao del Sur, Compostela Valley, North Cotabato, South Cotabato, Agusan del Norte, Surigao del Norte, and Maguindanao.

Appendix Figure 2. Survey Cover Map



From the 380 target respondents, 262 teachers (about 69%) were interviewed (see Appendix Table 2). Some teachers refused to be interviewed (3%) and some could not be reached (28%). Table 1 also gives the disaggregation by awardee and finalist. Among the 283 school heads, about 73 percent were interviewed.

Appendix Table 2. Overall response rate of teachers and school head.

Teacher	Awardee	Finalist	Total
Target respondents	244	136	380
(%)	(100)	(100)	(100)
Interviewed	172	90	262
(%)	(70)	(66)	(69)
Refused to be interviewed	3	8	11
(%)	(1)	(6)	(3)
Currently abroad (no more leads)	23	10	33
(%)	(9)	(7)	(9)
No lead at all	46	28	74
(%)	(19)	(21)	(19)

School Head	Awardee	Finalist	Total
Target respondents	190	93	283
(%)	(100)	(100)	(100)
Interviewed	135	71	206
(%)	(71)	(76)	(73)
No lead	55	22	77
(%)	(29)	(24)	(27)

Experience and Challenges in the Conduct of the Survey

In the conduct of the survey, the team was overwhelmed by the positive response of the teachers, who were very accommodating and enthusiastic to tell their story. They even shared significant life lessons from their personal encounters, attesting to their selection as Outstanding Teachers.

Nevertheless, conducting the project was not all smooth-sailing. The team encountered some challenges that affected the schedule of the survey. These include the availability and willingness of the respondents to participate in the survey; accessibility and security issues in some areas in Mindanao; annual school events and activities conducted during the summer that coincided with the survey period (e.g., Palarong Pambansa, Brigada Eskweka, and K-12 teachers' training); and difficulty to locate some respondents who are already retired and no longer connected with the schools they were affiliated with during the time of the Award.

In most cases, the targeted respondents were very cooperative and willing to participate in the survey. This is especially true for teachers in the province, more so if the teacher was an awardee. On the other hand, for some reason, several teachers from Manila were hesitant and not as cooperative as their counterparts in the province.

Appendix B. Profile of the SOT Award National Finalists

We provide below the average profile of the teachers who competed at the national level. Appendix Table 3 shows the information of teachers who obtained a scholarship for their studies.

Appendix Table 3. Distribution of Respondents with Scholarship Based on Their Highest Educational Attainment During the SOT Nomination and at the Time of the Survey (2014)

		Bachelor's degree	Master's degree	Doctoral degree	Total
A. During last SOT nomination					
	Awardee	10	40	29	79
	(%)	(13)	(51)	(37)	(100)
	Finalist	2	16	16	34
	(%)	(5)	(47)	(47)	(100)
B. 2014					
	Awardee	3	13	28	44
	(%)	(7)	(30)	(64)	(100)
	Finalist	0	2	14	16
	(%)	(0)	(13)	(88)	(100)

It has been established in the literature that family background, especially that of parents, contributes positively to the success of children (see the seminal works of Becker and Tomes 1976 and 1986). Appendix Table 4a gives background information of the teachers' parents and siblings. The average family size that the teachers grew up in consists of about 8 family members (range from 2 to 16 members). The average age of teachers' parents ranges from 55 to 75 years old; most of them are retired. The average age of the teachers' siblings ranges from 55 to 57 years old (App Table 4a).

Appendix Table 4a. Profile of Parents and Siblings of the Respondents

	Type of respondent	
	Awardee	Finalist
Family size (average)	8	8
Deceased	3	3
Age (average)		
Father	72	68
Mother	75	73
Siblings	57	55
Retired (count)		
Father	89	43
Mother	68	30
Siblings (average)	6	6

Appendix Table 4b. Educational Background of Parents and Siblings of the Respondents

	Type of respondent		Percentage [Standard deviation]	
	Awardee	Finalist	Awardee	Finalist
Father				
No formal education	8	1	4.85	1.22
Elementary level	49	20	29.70	24.39
High School level	43	27	26.06	32.93
College level	48	24	29.09	29.27
Graduate studies	14	8	8.48	9.76
Vocational Course	3	2	1.82	2.44
Mother				
No formal education	6	4	3.64	4.82
Elementary level	60	27	36.36	32.53
High School level	40	28	24.24	33.73
College level	46	15	27.88	18.07
Graduate studies	8	8	4.85	9.64
Vocational Course	5	1	3.03	1.20
Across all family members (average)				
No formal education	1	1	[0.53]	[0.35]
Elementary level	1	1	[1.30]	[1.35]
High School level	1	1	[1.41]	[1.73]
College level	4	4	[2.84]	[2.08]
Graduate studies	1	1	[0.74]	[0.68]
Vocational Course	1	1	[0.57]	[0.66]

Note: Numbers for educational level may include those who had taken some years but may have not necessarily finished the degree. The residual from the total awardees and finalists is due to no response.

Appendix Table 4b provides information on the educational background of both parents and siblings. Among the awardees and finalists, the father's educational attainment is evenly distributed, with about 30 percent having reached elementary, high school and college level. About 4-8 percent are PhD holders. The mother's educational attainment, on the other hand, is more skewed to those reaching elementary and high school levels only. A few had attained graduate education. It is also worthy to note that about 30 percent of the awardees and finalists have parents who were also teachers.

Appendix Table 4c shows that 11 and 20 percent of fathers and mothers, respectively, of the awardees and 14 and 16 percent of mothers and fathers, respectively, of finalists are teachers. It should be noted, however, that a large number of parents of the national finalists were working in the agriculture, forestry and fishing sector.

Appendix Table 4c. Occupational Industry Background of the Respondents' Parents

	Education	Agriculture, forestry and fishing	Others	No work	Total
Awardee					
Father	18	56	83	10	168
(%)	(11)	(33)	(49)	(6)	(100)
Mother	33	18	41	75	168
(%)	(20)	(21)	(24)	(45)	(100)
Finalist					
Father	12	23	40	8	84
(%)	(14)	(14)	(48)	(10)	(100)
Mother	14	10	24	35	84
(%)	(17)	(12)	(29)	(42)	(100)

Note: "Others" is aggregate information on the occupational industry background other education (16) and AFF (1) with codes following the PSA-NSO system. Residual is "no response."

The characteristics of the teachers' own family also matters. We compared the profile of the family of both the awardees and finalists. Following the NSO definition, household is defined as a social unit consisting of a person living alone or group of persons that sleeps in the same housing unit and has a common arrangement in the preparation and consumption of food. Among the 252 national finalists, only 29 percent live with multiple families in one household (Appendix Table 5a). The typical family size consists of about 5 members (Appendix Table 5b). It should be noted that this size is smaller than the family size of their first generation. On average, each family has one member attending school, working abroad, and studying abroad. In terms of educational attainment, a teachers' family of 5 members would have, on average, two members who had finished college and two members who had obtained either a master's or doctoral degree (Appendix Table 5c).

Appendix Table 5a. Number of Teachers Who Live with Multiple Families in One Household

	Yes	No	No response	Total
Awardee	44	120	4	168
(%)	(26)	(71)	(2)	(100)
Finalist	29	50	5	84
(%)	(35)	(60)	(6)	(100)
Total	73	170	9	252
(%)	(29)	(67)	(4)	(100)

Appendix Table 5b. Profile of Teachers' Own Households

Average number	Type of respondent	
	Awardee	Finalist
Household size	5	5
Household member currently attending school	1	1
Household member working abroad	1	1
Household member studying abroad	1	1

Appendix Table 5c. Respondents' Average Number of Family Members, By Educational Attainment

	Type of respondent	
	Awardee	Finalist
Elementary level	0	0
High school level	1	1
College level	2	2
Graduate Study	2	2
Vocational course	0	0
No formal education	0	0

The survey also asked about some indicators of the quality of standards of living. These include the type of building the family resides in, type of construction materials of the building the family lives in, and information on the teachers' family assets. On average, the teachers have been living in their current residence for about 22-25 years. A good number of awardees and finalists live in a single house (Appendix Table 6a). Appendix Table 6b provides additional information on the type of materials the roof is made of: 231 (92%) of the teachers indicated that the roof of their house is made of strong materials.

Appendix Table 6a. Type of Building/House of the Respondents' Residences

	Single house	Duplex	Apartment	Condo and commercial units	Other housing units	No response	Total
Awardee	131	15	5	11	4	2	168
(%)	(78)	(9)	(3)	(7)	(2)	(1)	(100)
Finalist	68	6	3	5	1	1	84
(%)	(81)	(7)	(4)	(6)	(1)	(1)	(100)
Total	199	21	8	16	5	3	252
(%)	(79)	(8)	(3)	(6)	(2)	(1)	(100)

Appendix Table 6b. Type of Construction Materials for the Roof of the Respondents' Residences

	Strong materials	Light materials	Mixed but predominantly strong materials	No response	Total
Awardee	156	1	10	1	168
(%)	(93)	(.6)	(6)	(.6)	(100)
Finalist	75	3	4	2	84
(%)	(89)	(4)	(5)	(2)	(100)
Total	231	4	14	3	252
(%)	(92)	(2)	(6)	(1)	(100)

Appendix Table 7a and 7b provide the tenurial status of the house and lot the family resides in. About 90 percent of the national finalists owned the house and lot where their family lives. In addition, about 30 percent of the national finalists also owned a second house (Appendix Table 8).

Appendix Table 7a. Tenure Status of the Land/Lot Occupied by the Respondents' Families

	Owned and titled	Owner - like (rights)	Rented	Rent - free with owner's permission	No response	Total
Awardee	144	14	4	5	1	168
(%)	(86)	(8)	(2)	(3)	(.6)	(100)
Finalist	61	10	4	7	2	84
(%)	(73)	(12)	(5)	(8)	(2)	(100)
Total	205	24	8	12	3	252
(%)	(81)	(10)	(3)	(5)	(1)	(100)

Appendix Table 7b. Tenure Status of the Housing Unit Occupied by the Respondents' Families

	Owned	Rented	Rent - free	No response	Total
Awardee	155	8	4	1	168
(%)	(92)	(5)	(2)	(.6)	(100)
Finalist	72	5	5	2	84
(%)	(86)	(6)	(6)	(2)	(100)
Total	227	13	9	3	252
(%)	(90)	(5)	(4)	(1)	(100)

Appendix Table 8. Respondents' Ownership of Another Housing Unit

	Yes	No	No response	Total
Awardee	53	114	1	168
(%)	(32)	(68)	(.6)	(100)
Finalist	32	50	2	84
(%)	(38)	(60)	(2.)	(100)
Total	85	164	3	252
(%)	(34)	(65)	(1)	(100)

Information on the presence or absence of various assets was also obtained to also indicate the respondents' standard of living. Appendix Table 9 shows that vehicles, appliances, and gadgets are the most common assets owned by both awardees and finalists.

Appendix Table 9. Assets Owned by the Respondents.

	During last SOT nomination		2014	
Number	Awardee	Finalist	Awardee	Finalist
Housing unit	133	63	149	72
(%)	(79)	(75)	(89)	(86)
Land	139	62	147	70
(%)	(83)	(74)	(88)	(83)
Mechanized farm equipment	5	2	8	4
(%)	(3)	(2)	(5)	(5)
Livestock and poultry	20	11	26	16
(%)	(12)	(13)	(15)	(19)
Vehicles	86	44	114	60
(%)	(51)	(52)	(68)	(71)
Appliance and gadgets	158	80	160	82
(%)	(94)	(95)	(95)	(98)
Boats	2	0	1	1
(%)	(1)	(0)	(.6)	(1)
Jewelries	75	42	84	45
(%)	(45)	(50)	(50)	(54)