Online Appendix to

"Social Performance Incentives in Mission-Driven Firms"

This Online Appendix provides supplementary results for the paper "Social Performance Incentives in Mission-Driven Firms." We report the estimation results of various robustness tests and additional analyses. Specifically, our robustness tests include 1) tests examining whether our findings regarding H2 are robust to controlling for ethical consumption effect, 2) tests examining whether our finding regarding H3 is robust to controlling for satisfaction with plan participation and using an alternative proxy for *Measurability*, 3) tests examining whether the positive moderating effect of *Measurability* is stronger in firms that experience a relatively higher perceived improvement in the performance measurement, 4) tests of H4 and H5 using the ex post (instead of ex ante) beneficiary of the incentive payments and using nonprofit status as an alternative proxy for *Social Controls*, and 5) tests examining whether findings regarding H3 and H5 are robust to potential variations of survey responses over time. Additional tests examine the effects of SPC participation on (1) social performance that is not measured by the SPC program, (2) SE employees' willingness to stay, and (3) SPC firms' operating margins, operating income, sales, expenses, and subsidies, using non-SPC firms as a control group.

1. Tests of H2: Controlling for Ethical Consumption Effect

Our discussion of task complementarity pertains to a *direct* effect of the bonus plan that immediately influences the costs and productivity of effort for multiple tasks, but there could also be an *indirect* effect in which customers' ethical consumption contributes to the improvement of firms' financial performance. Consequently, we control for a potential confounding effect in which the SEs' financial performance improves simply because ethical consumers increase their demand for SEs' products and services (ethical consumption effect), such that SEs become more committed to advancing their social missions (*SPC_Tenure* ×

Ethical_Consumption). *Ethical_Consumption* is a survey item that asks whether firms' social missions help increase their revenues. In particular, the respondent must answer the survey question "Does the fact that your firm addresses social problems help increase its revenues?" in 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). After standardization and additive transformation of survey responses, *Ethical_Consumption* takes on the values within the range of [0, 4.38], with a mean of 2.60 and a standard deviation of 1.

Our empirical results in Table A1 indicate that the coefficients on *SPC_Tenure*×*Task_Complementarity* are still significantly positive, while the coefficients on *SPC_Tenure*×*Ethical_Consumption* are insignificant. This suggests that the social bonus plan's positive spillover mainly takes place through a direct effect, lending further support to our H2.

TABLE A1.
H2: Task Complementarity and Spillover Effect on Financial Performance After Controlling for Ethical Consumption

VARIABLES	(1)	(2)
	Dep var: *OI/Sales*	
SPC_Tenure	0.014	-0.025
	(0.28)	(-0.29)
SPC_Tenure×*Task_Complementarity*	0.043**	0.042**
	(2.22)	(2.13)
SPC_Tenure×*Ethical_Consumption*	-0.001	-0.001
	(-0.10)	(-0.07)
SPC_Tenure×*Formal_Controls*	0.001	-0.003
	(0.08)	(-0.10)
SPC_Tenure×*Formal_Controls*×*Beneficiary_Mission*		0.002
		(0.09)
SPC_Tenure×*Social_Controls*	-0.003	-0.001
	(-0.24)	(-0.05)
SPC_Tenure×*Social_Controls*×*Beneficiary_Mission*		-0.007
		(-0.29)
SPC_Tenure×*Beneficiary_Mission*		0.058
		(0.63)
SPC_Tenure×*Measurability*	-0.006	-0.005
	(-0.51)	(-0.46)
LogAsset	0.010	0.011
	(0.29)	(0.31)
LogFirmAge	0.165	0.208
	(1.32)	(1.60)

Leverage	-0.200***	-0.191***
	(-3.00)	(-2.84)
LogSubsidy	-0.005**	-0.005**
	(-2.14)	(-2.08)
Constant	-0.458	-0.544
	(-0.74)	(-0.88)
Firm FE	Yes	Yes
Observations	462	462
R-squared	0.780	0.782

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels (two-tailed), respectively.

2. Tests of H3: Controlling for Satisfaction with Plan Participation, Use of an Alternative Proxy of Measurability, and Relative Improvement of Measurability After Plan Introduction

2.1. Controlling for Satisfaction with Plan Participation, Use of an Alternative Proxy of Measurability

Our main test of H3 relies on SE managers' perceptions of the measurability of their firms' social performance. The survey measures are intended to capture our construct but may suffer from a reverse causality problem: since CEOs answer the survey only after they begin participating in the program, their satisfaction with the program may influence their survey answers. For instance, managers of more successful SEs under the SPC program could respond more favorably to the questions about the measurability of social performance. To address this potential reverse causality, we control for CEOs' satisfaction with the bonus rewards based on the SPC measurement system, *SPC_Satisfaction*. The CEOs must answer the survey question "How would you rate your satisfaction with the social bonus rewards based on the SPC measurement system?" in 5-point Likert scale from 1 (very dissatisfied) to 5 (very satisfied). After standardization and additive transformation of survey responses, *SPC_Satisfaction* takes on the values within the range of [0, 4.44], with a mean of 3.36 and a standard deviation of 1.

Next, we employ a hard measure of measurability (*Many_Peers*) in place of our main perception measure. Building on a prior study of relative performance evaluation, which documents that peer firms provide more relevant information as the number of similar peers

grows (Gong, Li, and Shin 2011), we predict that as the number of similar firms in the market increases, the focal firm will possess more accurate information on the benchmark prices and costs that are necessary to quantify social performance. *Many_Peers* is an indicator that takes on 1 if the firm has an above-median number of peers in the market in the year. Peers are defined as social enterprises that belong to the same industry classification and same social performance type (according to government SE registration system).

In column (1) of Table A2, we re-estimate equation (3) by adding *SPC_Tenure*×*SPC_Satisfaction* as a control variable. The coefficient on *SPC_Tenure*×*Measurability* is still significantly positive, while the coefficient on *SPC_Tenure*×*SPC_Satisfaction* is insignificant. This helps rule out the alternative explanation that managers of more successful SEs under the SPC program tend to respond more favorably to the questions about the measurability of social performance, resulting in a positive loading on *SPC_Tenure*×*Measurability*.

In column (2) of Table A2, we re-estimate equation (3) with *Many_Peers* in place of *Measurability*. To mitigate the concern that *Many_Peers* could capture SE type–specific effects that are independent of the informativeness of peer firms, we further control for the interaction terms between *SPC_Tenure* and indicators of each social performance type. We find a significantly positive coefficient on *SPC_Tenure*×*Many_Peers*, confirming that our main findings with the survey-based measure (*Measurability*) are robust to using an alternative hard measure of measurability. Overall, the results in columns (1) and (2) suggest that our main findings are robust to tests for 1) a reverse causality concern and 2) a potential bias from using a subjective measure of managers' perception.

2.2. Relative Improvement in the Social Performance Measurement

Our finding that social bonuses' incentive effect is more pronounced in firms with greater perceived measurability could be interpreted as suggesting that the effect of the

incentive plan is driven by SEs whose social performance was easy to measure even before they participated in the plan. To rule out this alternative explanation, we examine whether the improvements in social performance are more pronounced in SEs whose social performance was perceived to be more difficult to measure before the SPC participation but that experienced a relatively greater improvement in the measurement of social performance.

To empirically measure the relative improvement of measurability after the plan participation, we compare the responses to two survey questions: one about the government's subsidy calculation method, the other about the SPC measurement method. Our measure, *Relative_Improve* is defined as the satisfaction with SPC measurement system (5-point Likert scale) minus the satisfaction with government's method for subsidy calculation (5-point Likert scale), deflated by 5. *Relative_Improve* takes on the values within the range of [-0.60, 0.60], with a mean of 0.06 and a standard deviation of 0.25. We interact *Relative_Improve* with *SPC_Tenure*×*Measurability* to examine whether the positive moderating effect of *Measurability* is more pronounced in firms that experienced a relatively greater improvement in social performance measurement through SPC participation. In columns (1) and (3) of Table A2, the coefficients on *SPC_Tenure*×*Measurability*×*Relative_Improve* are significantly positive, indicating that the performance improvement after SPC participation is more pronounced in firms that experienced a relatively greater improvement in social performance measurement after SPC participation. These results are consistent with the performance-improvement effect of incentive plan not being driven by SEs whose performance was easy to measure even before the participation.

TABLE A2.
H3: Satisfaction with Plan Participation, Alternative Measure of Measurability, and a Relative Improvement of Measurement Problem

	(1)	(2)	(3)
VARIABLES	Dep var: *Social_Outcome/Sales*		
SPC_Tenure	-0.084*	0.040	-0.066

	(-1.72)	(1.09)	(-1.54)
SPC_Tenure×Measurability	0.028**		0.031***
	(2.33)		(2.69)
SPC_Tenure×SPC_Satisfaction	0.009		
	(0.77)		
SPC_Tenure×Many_Peers		0.040*	
		(1.68)	
Many_Peers		-0.138	
		(-1.53)	
SPC_Tenure×Measurability×Relative_Improve	0.084**		0.082**
	(2.03)		(1.99)
SPC_Tenure× Relative_Improve	-0.137		-0.122
	(-0.90)		(-0.81)
SPC_Tenure×Social_Service_Type		0.002	
		(0.07)	
SPC_Tenure×Employ_Type		0.017	
		(0.63)	
SPC_Tenure×Environment_Type		-0.037	
		(-1.08)	
SPC_Tenure×Community_Type		-0.056**	
		(-2.19)	
LogAsset	0.005	-0.002	0.005
	(0.14)	(-0.05)	(0.16)
LogFirmAge	-0.245**	-0.135	-0.243**
	(-2.00)	(-1.04)	(-1.99)
Leverage	-0.060	-0.090	-0.062
	(-0.90)	(-1.31)	(-0.93)
LogSubsidy	-0.002	-0.002	-0.002
	(-0.75)	(-0.85)	(-0.78)
Constant	0.637	0.527	0.627
	(1.09)	(0.82)	(1.07)
Firm FE	Yes	Yes	Yes
Social Performance Type FE	No	Yes	No
Observations	553	553	553
R-squared	0.786	0.689	0.785

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels (two-tailed), respectively.

3. Tests of H4 and H5: Ex-post Beneficiary of Bonus Payments and Nonprofit Status

3.1. Ex post Beneficiary of Bonus Payments

To divide the sample into firms that use bonus payments for individual bonuses and firms that reinvest bonus payments in their social missions, our main analyses use the survey question about how CEOs *intend* to use bonus payments. We believe that CEOs' ex ante intention is important in influencing employee motivation because employees are likely to

determine their effort level based on their *expectation* of future payoff. Nonetheless, a firm's track record of using past bonus payments could also influence employees' expectation.

To assess the robustness of our results, we use *Beneficiary_Mission (ex post)*, which takes on the value of 1 if the firm used bonus payments mainly to further improve in their social missions in 2020 (e.g., acquisition of PP&E, corporate social responsibilities, etc.), and 0 if the firm used bonus payments mainly as individual bonuses in 2020.[1] We also construct *Beneficiary_Mission (ex ante or ex post)*, which takes on the value of 1 for firms that intend to *or* did reinvest the bonuses in their social mission, and 0 otherwise. However, given the global pandemic in 2020, we believe that the ex post measure will be much noisier (in capturing employees' ordinary belief in what their CEOs will do with bonus payments) and more period-specific than our ex ante measure. In our field interviews during 2020, we learned that participating SEs were experiencing severe financial distress, and that CEOs were considering using bonus payments to address urgent problems.

Table A3, column (1) presents the estimation results using the ex post beneficiary of bonus payments instead of the ex ante beneficiary. We find coefficient on *SPC_Tenure*×*Social_Controls*×*Beneficiary_Mission (ex post)* is significant and positive, providing support to H5b. However, we find no evidence supporting H4a, H4b, and H5a. These results likely reflect the fact that, due to global pandemic in 2020, CEOs spent social

[1] In particular, the survey question is as follows:
How did you use the bonus payments that your firm received based on your SE's social performance this year (2020)? Please estimate the percentage for each of the following categories, so that the sum of the estimates is 100%.
1. Executives and employees' salary increases and bonuses: ___%
2. Asset acquisition for new or existing businesses : ___%
3. Product development or technology development : ___%
4. Labor condition improvement : ___%
5. Debt repayment or interest payment : ___%
6. Donation or corporate social responsibility activities : ___%

bonuses only for the most urgent problems, not for their original intended use. In column (2), we use *Beneficiary_Mission (ex ante or ex post)* in place of *Beneficiary_Mission* and find results that are similar to our main findings. The significantly positive (negative) coefficient on *SPC_Tenure*×*Formal_Controls* (*SPC_Tenure*×*Formal_Controls*×*Beneficiary_Mission (ex ante or ex post)*) supports our H4a and H4b. In line with H5a and H5b, we also find a significantly negative (positive) coefficient on *SPC_Tenure*×*Social_Controls* (*SPC_Tenure*×*Social_Controls*×*Beneficiary_Mission (ex ante or ex post)*).

3.2. Nonprofit Status as a Proxy for Social Controls

Many SEs are nonprofits that converted to SEs after the government encouraged them to do so. Prior studies suggest that nonprofit status is advantageous in attracting value-congruent workers (Besley and Ghatak 2005; Francois 2000), so nonprofit status could be correlated with organizations' reliance on social controls. Among our sample for H3–H5, about 22% of firms have a not-for-profit status (e.g., nonprofit organization, social welfare foundation, social cooperative, etc.); the remaining 78% have a for-profit status (e.g., corporation, limited company).

In column (3) of Table A3, we use a nonprofit status indicator (*NPO*) as an alternative proxy of social controls. The Pearson correlation between *Social_Controls* and *NPO* is 0.14 ($p<0.01$). The results using *NPO* as a proxy for social controls are consistent with our main results. Specifically, the coefficient on *SPC_Tenure*×*NPO* is insignificant but negative, while the coefficient on *SPC_Tenure*×*NPO*×*Beneficiary_Mission* is significantly positive. This result further supports our H5a and H5b.

TABLE A3.
H4 and H5: Ex Post Beneficiary of Social Bonuses and Nonprofit Status

	(1)	(2)	(3)
	Dep var: *Social_Outcome/Sales*		
VARIABLES	*Beneficiary_Mission (ex post)*	*Beneficiary_Mission (ex ante or ex post)*	*NPO Status as Proxy of Social Controls*

SPC_Tenure	-0.026	-0.153	-0.276***
	(-0.29)	(-1.54)	(-3.68)
SPC_Tenure×Formal_Controls	-0.012	0.063**	0.053**
	(-0.61)	(2.46)	(2.27)
SPC_Tenure×Formal_Controls×Beneficiary_Mission	0.008	-0.082***	-0.058**
	(0.33)	(-2.92)	(-2.20)
SPC_Tenure×Social_Controls	-0.015	-0.041**	
	(-0.90)	(-2.07)	
SPC_Tenure×Social_Controls×Beneficiary_Mission	0.037*	0.062***	
	(1.72)	(2.60)	
SPC_Tenure×NPO			-0.106
			(-1.15)
SPC_Tenure×NPO×Beneficiary_Mission			0.261***
			(2.73)
SPC_Tenure×Beneficiary_Mission	-0.152*	0.030	0.109
	(-1.69)	(0.31)	(1.59)
SPC_Tenure×Measurability	0.049***	0.050***	0.057***
	(4.15)	(4.18)	(5.14)
LogAsset	0.009	0.009	-0.003
	(0.25)	(0.26)	(-0.10)
LogFirmAge	-0.259**	-0.334**	-0.243*
	(-1.97)	(-2.50)	(-1.91)
Leverage	-0.067	-0.041	-0.030
	(-0.94)	(-0.59)	(-0.44)
LogSubsidy	-0.002	-0.002	-0.001
	(-0.94)	(-0.88)	(-0.59)
Constant	0.596	0.684	0.767
	(0.94)	(1.10)	(1.27)
Firm FE	Yes	Yes	Yes
Observations	516	516	516
R-squared	0.780	0.786	0.800

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels (two-tailed), respectively.

4. Tests of H3 and H5: Over-time Variation in Survey Responses

In our main analyses of H3 and H5, we rely on SE managers' responses to the July 2020 survey to capture the managers' perceived measurability of social performance and a firm's reliance on social controls. We chose the 2020 survey because 1) the SE's CEOs were required to complete it, 2) it contains the most comprehensive questionnaires that directly pertain to the theoretical constructs of interest to us (*Formal Controls, Social Controls, Measurability*, *Beneficiary of SPC Bonuses, Task Complementarity*), and 3) it includes questions about how CEOs ex ante intend to use their firms' social bonuses (i.e., main beneficiary of social bonuses). After constructing our variables using this survey, we apply

them to all sample periods. In doing so, we assume that constructs such as managers' perceptions of measurability, firms' reliance on social controls and formal controls, and ex ante use of social bonuses do not change over time.

In addition to dropping 105 firm-years that experience CEO turnover, we next assess whether our findings regarding H3 and H5 are robust to potential variations in survey responses over time. We do this by re-examining the moderating effects of measurability and social controls, this time using the survey items that are available for both the March 2018 and July 2020 surveys when we construct our variables of interest. Since the set of survey questions that overlap between March 2018 and July 2020 is limited, we use a single survey item to measure *Social_Controls* and *Measurability* in Table A4. Unfortunately, no survey items in the 2018 survey pertain to *Formal_Controls*. In particular, *Social_Controls* is based on the item in which respondents choose a rating between "Our firm is focused on the increase in revenues and profit maximization" and "Our firm is focused on providing solutions to social issues." *Measurability* is based on the response to "How strongly do you agree with the measurement of social value created by firms?" We apply the March 2018 survey responses to the observations until 2018, and apply the July 2020 survey responses to the observations in 2019. *Survey2018* is an indicator variable that takes on 1 (0) if the observation is applied with survey responses in 2018 (2020). Mean comparison tests indicate that responses in 2020 are significantly different from those in 2018. The mean value of *Social_Controls* (*Measurability*) in the 2018 survey is 2.29 (3.71), which is significantly different, at the 1% (1%) level, from the 2.73 (4.11) in the 2020 survey.

In Table A4, we find that the results are consistent with the main findings in Table 6. The coefficient on the three-way interaction term *SPC_Tenure* × *Social_Controls* × *Beneficiary_Mission* is positive and significant, consistent with a positive moderating effect of *Social_Controls* being observed only when the bonuses are reinvested in firms' missions.

In addition, the coefficient on *SPC_Tenure*×*Measurability* is positive but weakly significant (p=0.12). Collectively, the evidence in these tests is inconsistent with the concern that variations in survey responses over time considerably alter our results.

TABLE A4.
H3 and H5: Over-time Variation in Survey Responses

VARIABLES	Dep var: *Social_Outcome/Sales*
SPC_Tenure	-0.029
	(-0.39)
SPC_Tenure×*Social_Controls*	-0.013
	(-0.70)
SPC_Tenure×*Social_Controls*×*Beneficiary_Mission*	0.038*
	(1.83)
SPC_Tenure×*Measurability*	0.017†
	(1.55)
SPC_Tenure×*Beneficiary_Mission*	-0.046
	(-0.74)
LogAsset	-0.005
	(-0.10)
LogFirmAge	0.062
	(0.37)
Leverage	-0.009
	(-0.11)
LogSubsidy	-0.002
	(-0.61)
Survey2018	0.109
	(1.56)
Constant	0.202
	(0.23)
Firm FE	Yes
Observations	409
R-squared	0.796

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels (two-tailed), respectively. † denotes significance at 10 percent level at one-tailed test.

5. Impact on Social Performance Metrics Out of SPC Program

Our main analyses only examine social performance improvement as measured by the SPC program. The effect of the program on unmeasured areas of social performance is difficult to predict. On the one hand, the improvement of "measured" social performance could enhance unmeasured dimensions of social performance, as participating SEs obtain new skills and knowledge that could be utilized in those areas. On the other hand,

participating SEs might optimize to improve only in measured performance or engage in deliberate performance management (Chan and Zhang 2020). If this occurs, then they might not enhance—and could even sacrifice—social performance in the unmeasured dimensions. To see the effects of the social bonus plan on unmeasured social performance, we examine alternative social performance metrics provided by the Korean government system on registered SEs.

In addition to financial data, the government system provides information on how SEs use their retained earnings. SEs can reinvest these earnings four ways: to increase employment, to improve social services, to improve labor conditions, and to serve the local community. Among the four dimensions, we use reinvestment for labor conditions and for the local community as alternative performance metrics. Being independent of the SPC measurement system, these two dimensions should reflect SEs' commitment to serving their stakeholders above and beyond maximizing rewarded performance.[2] The sample consists of 2,537 non-SPC firm-year observations (1,463 firms) and 195 SPC observations (86 firms) that are available on the government reporting system during 2016–2019. In column (1) of Table A5, the dependent variable is the number of local residents who benefitted from SEs' community engagement activities (*Community Engagement*). In column (2), the dependent variable is the number of SE workers whose working conditions are improved (*Labor Condition Improvement*).

In both columns, we find significant and positive coefficients on the interaction term *SPC_Dummy ×Time*. While both *Community Engagement* and *Labor Condition Improvement* decline over time for non-SPC firms (as evidenced by the negative coefficients on *Time*), the positive coefficients on *SPC_Dummy ×Time* are consistent with SPC firms decreasing their

[2] Community engagement activities include donations to local facilities for the disabled, scholarships to local high school students, etc. To improve the labor conditions for workers, SEs offer more fringe benefits, provide housing, renovate the workplace, etc.

contribution to local residents and their labor condition improvement less than their non-SPC counterparts do. This suggests that SPC firms work harder than non-SPC firms at maintaining their commitment to resolving social issues, even when those issues are not measured by the SPC program. This finding is evidence of a positive spillover effect, in which SPC participation improves not only measured but also unmeasured dimensions of social performance.

TABLE A5. Impact of SPC Participation on Alternative Social Performance Metrics

VARIABLES	(1) *Community Engagement*	(2) *Labor Condition Improvement*
SPC_Dummy	-1.127***	-0.791**
	(-3.40)	(-2.23)
SPC_Dummy×Time	0.234**	0.200**
	(2.18)	(2.09)
Time	-0.350***	-0.272**
	(-2.66)	(-2.33)
LogOI	0.009***	0.006***
	(3.98)	(3.37)
LogSales	0.139**	0.121***
	(2.47)	(3.14)
LogAge	-0.146*	-0.103*
	(-1.84)	(-1.78)
LogEmployees	0.002	0.175***
	(0.03)	(3.40)
LogSubsidy	0.013	0.016
	(0.88)	(1.62)
Corporation	0.255***	0.272***
	(2.30)	(4.12)
Gov_Class1	-0.327*	-0.002
	(-1.96)	(-0.02)
Gov_Class2	-0.468**	-0.154
	(-2.36)	(-1.13)
Gov_Class3	-0.373*	-0.119
	(-1.75)	(-0.75)
Gov_Class4	-0.414**	-0.057
	(-2.13)	(-0.49)
Constant	-2.466**	-3.007***
	(-2.29)	(-4.00)
Industry FE	Yes	Yes
Year FE	Yes	Yes
S.E. Clustered	by Firm	by Firm
Observations	2,732	2,732
R-squared	0.057	0.094
Adj. R-squared	0.047	0.083

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels (two-tailed), respectively.
This table reports the regressions of alternative social performance metrics outside the SPC measurement system. We utilize information on social responsibility activities on the government reporting system as alternative social performance metrics. The sample consists of 2,537 non-SPC observations and 195 SPC observations during 2016–2019. We use the log number of local community beneficiaries (*Community Engagement*) and the log number of workers who benefitted from SEs' activities to improve labor conditions (*Labor Condition Improvement*). *SPC_Dummy* is the indicator of SPC participants. *Time* is defined as the current year – the year of entry to SPC program +1. For non-SPC firms, we assign 2015 as the pseudo-entry year. The positive coefficients on *SPC_Dummy*×*Time* indicate that SPC participants are faster in growing their commitment to the local community and their workers' welfare, compared to non-SPC firms. Among the five categories of government classification of SEs (*Gov_Class1 – Gov_Class5*), *Gov_Class5* is omitted to be the intercept of the regression. Government classifies SEs into five categories depending on their business models. *Gov_Class1* SEs employ workers from vulnerable groups. *Gov_Class2* SEs employ workers from vulnerable groups and provide social services. *Gov_Class3* SEs provide social services. *Gov_Class4* SEs focus on social issues in local community. *Gov_Class5* includes various business models other than the aforementioned four categories.

6. Social Performance Incentives and SE Employees' Willingness to Stay

Prior studies suggest that monetary rewards for motivating prosocial actions could be detrimental to organizational performance, since explicit incentives could crowd out the intrinsic motivation to work in social mission organizations and even reshuffle the employee composition (if self-focused rather than mission-focused employees are attracted) (Chen et al. 2020a, 2020b; Chan and Zhang 2020). However, other studies suggest that clear performance goals generally lead to a stronger attachment to, and a greater willingness to stay with, the organization (Allen and Meyer 1990). By enhancing the workers' commitment to organization, a clear corporate mission and clear performance goals lead to higher organizational performance (Gartenberg et al. 2019).

As we discussed, the SPC program, by presenting tangible outcomes based on a clear and pre-determined goal of social performance, provides SEs with a vehicle for increasing workers' commitment to a social mission. Our field interview with executives in three SPC-participating SEs indeed reveals that SE executives and employees gain a feeling of "being acknowledged" and "self-competence" by visualizing their social impact through the SPC measurement system.

In Table A6, we examine how the introduction of the social bonus plan influences employees' willingness to stay in the current job. We utilize survey responses of SPC and non-SPC firms that responded to the SPC surveys in 2015 and 2018.[3] In column (1), we find that *SPC_Dummy*, the indicator of SPC participation, is positively and significantly associated with the respondent's intention to stay in the firm, *Retention* (α_1=0.666, p<0.01). This suggests that, after controlling for other factors, SPC participation significantly increases the likelihood of employee retention. In column (2), we add the variable *Social_Controls*, which proxies for the firms' reliance on social controls, and its interaction term with *SPC_Dummy*.[4] The main effect of *Social_Controls* has a significantly positive loading on *Retention* (α_3=1.149, p<0.1), consistent with findings, from prior studies, that value-congruent employees have a greater organizational commitment (Chen et al. 2020b; Gartenberg et al. 2019). Further, the interaction term between *SPC_Dummy* × *Social_Controls* has a significantly negative coefficient (α_2=-1.480, p<0.1), suggesting that even though the introduction of social bonuses increases the likelihood of employee retention, its effect is attenuated when firms rely more on social controls (and thus a high level of organizational commitment).

TABLE A6. Social Performance Incentives and Employee Retention

		Dep var: *Retention*	
VARIABLE	Coef.	Estimate (Wald Chi2)	Estimate (Wald Chi2)
SPC_Dummy	α_0	0.666***	1.373***
		(17.68)	(9.39)
SPC_Dummy×*Social_Controls*	α_1		-1.480*
			(2.98)

[3] As we mentioned in footnote 13 of our main article, both SPC and non-SPC firms (randomly selected by the SPC program office) participated in the 2015 and 2018 surveys; the 2020 survey was administered only to SPC firms. The sample for Table A6 consists of 130 firm-year observations of SPC firms (28 observations in 2015 and 102 observations in 2018) and 450 observations of non-SPC firms (184 observations in 2015 and 266 observations in 2018). The survey questionnaires for non-SPC firms are identical to those for SPC firms.

[4] In the 2015 and 2018 surveys, there is a limited set of survey questions pertaining to firms' reliance on social controls. Specifically, we measure *Social_Controls* with a single item in which participants choose a rating between "Our firm is focused on the increase in revenues and profit maximization" and "Our firm is focused on providing solutions to social issues."

Social_Controls	α_2	0.140*	0.149*
		(3.26)	(3.58)
Subsidy_Dummy	α_3	-0.111	-0.119
		(0.39)	(0.449)
Econ_Issues	α_4	0.565**	0.593**
		(6.03)	(6.58)
Social_Issues	α_5	0.057	0.083
		(0.03)	(0.07)
Other_Issues	α_6	0.339	0.374
		(1.09)	(1.32)
LogFirmAge	α_7	0.027	0.030
		(0.19)	(0.22)
Employee over 30	α_8	-0.080	-0.085
		(0.185)	(0.21)
Gender	α_9	-0.099	-0.097
		(0.68)	(0.65)
Education	α_{10}	0.188	0.212
		(1.87)	(2.36)
TMT_Dummy	α_{11}	0.412***	0.405***
		(8.11)	(7.79)
LogAge	α_{12}	0.294	0.322
		(1.32)	(1.57)
Log_SE_Experience	α_{13}	0.328***	0.338***
		(6.81)	(7.19)
Constant		-2.159**	-2.323**
		(5.10)	(5.82)
Number of Observations		580	580
R-squared		0.127	0.131

Z-statistics are presented in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels, respectively.

This table reports the estimation results of an employee retention model using SPC and non-SPC firms that responded to both the 2015 and 2018 surveys. The dependent variable, *Retention*, is an indicator that takes on 1 if the survey respondent indicates that he/she is willing to stay in the current job, and 0 if he/she is willing to leave the firm or reluctant to stay in the current job. *SPC_dummy* is the indicator of SPC firms. *Social_Controls* is proxied by a single item: "Please rate between 'Our firm focuses on profit maximizing' and 'Our firm mainly pursues social value creation' on a scale of 0 to 10." *Subsidy_Dummy* indicates that the firm has received government subsidies. *Econ_Issues*, *Social_Issues*, and *Other_Issues* take on 1 if the respondents answer that their SE focuses on addressing economic issues, social problem issues, and other issues, respectively. *LogFirmAge* is the log of firm age, and *Employee over 30* is the indicator of firms with more than 30 employees. *Gender*, *Education*, *TMT_Dummy*, *LogAge*, and *Log_SE_Experience* stand for gender, education level (i.e., bachelor's degree or higher), top-management indicator, log of CEO age, and the log of years he/she has worked in social economy sector, respectively.

7. Effect of SPC Participation on Firms' Sales, Expenses, and Subsidies Using Non-SPC Firms as a Control Group

Our main analyses do not have a natural control group. Although we cannot observe social performance, as measured by the SPC measurement system, for nonparticipating SEs,

we do have financial data of other SEs available on government SE registration system. In this section, we examine how financial performance changes after SPC participation, using non-SPC firms as a control group. The sample consists of 2,984 non-SPC observations (the 3,006 non-SPC firm-years in our selection model, less 22 observations with zero sales) and 797 SPC-firm observations during 2014–2019. *SPC_Dummy* is the indicator of SPC participants. *Time* is the trend variable that counts the length of the period after the SPC participation. We assume that the non-SPC firms uniformly participated in the SPC program in 2015.

Table A7 reports financial performance of SPC and non-SPC firms. Columns (1), (4), and (7) show the estimation results of the full sample. Columns (2), (5), and (8) show the subsample test results of firms with higher task complementarity between social and financial tasks. Column (3), (6), and (9) show the results of firms with a lower task complementarity. Since we do not have social performance information for non-SPC firms, we measure task complementarity by SEs' social performance type. Since Social Service–type and Community-type SEs have a higher correlation between social and financial performance than other types, we code *Task_Complementarity (Type)* to take on 1 if an SE primarily performs Social Service–type or Community-type functions. The Social Service type is classified as a "service" provider in the Korean SIC and as *Gov_Class2* (or *Gov_Class3*) by the government SE system. The Community type is classified as non-manufacturing provider in the Korean SIC and as *Gov_Class4* by the government SE system.[5]

In column (1), we find that non-SPC firms' operating margin ratio improves over time, as evidenced by the positive coefficient on *Time*. The insignificant coefficient on *SPC_Dummy*×*Time* provides no evidence that SPC participation harms firms' operating margin ratio. SPC participants with high task complementarity improve their operating

[5] *Gov_Class2* SEs employ workers from vulnerable groups and provide social services. *Gov_Class3* SEs provide social services. *Gov_Class4* SEs focus on social issues in local community.

margin ratio over time, as evidenced by the positive coefficient on *SPC_Dummy*×*Time* in column (2).

In column (4), non-SPC firms' operating income, on average, increases over time, as evidenced by the positive coefficient on *Time*. The significant and negative coefficient on *SPC_Dummy*×*Time*, however, almost offsets the positive coefficient on *Time*, suggesting that an average SPC participant has a harder time increasing its operating income, compared to an average non-SPC counterpart. Nonetheless, this is not the case for SPC firms that have high task complementarity, as seen in column (5).

In column (7), we find that non-SPC firms' sales decline over time, while SPC firms appear to maintain their sales level (*SPC_Dummy*×*Time* + *Time*=0). This finding is driven by SPC firms with a high task complementarity, as evidenced by the insignificant coefficient on *SPC_Dummy*×*Time* in column (9) and the significant coefficient on it in column (8).

Recall that SPC participants are less likely to decrease their contributions to their local communities and employees than non-SPC firms are (Table A5). Combined, our results in Table A7 suggest that, compared to non-SPC firms, SPC firms are more likely to suffer financially due to their greater commitment to social missions. However, this negative effect of SPC participation on financial performance is significantly mitigated in firms with high task complementarity between social and financial performance.

In Table A8, we examine how operating expenses and subsidies change after SPC participation, using non-SPC firms as a control group. In column (1), *SPC_Dummy*×*Time* is positively associated with operating expenses (*Log(Expenses)*), suggesting that, during the SPC participation period, SPC participants incur more expenses than their non-SPC counterparts. This negative effect of SPC participation on firms' financial performance could be due to the SPC participants' greater commitment to social missions.

In column (2), *SPC_Dummy*×*Time* has no significant association with *LogSubsidy*,

suggesting that SPC participation does not significantly change the amount of subsidies and donations.

Table A7. Operating Margin, Operating Income, and Operating Revenues of SPC and Non-SPC Firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OI/Sales			Dep Var: *Log(OI)*			*Log(Sales)*	
VARIABLES		Task Complementarity (Type) = 1	Task Complementarity (Type) = 0		Task Complementarity (Type) = 1	Task Complementarity (Type) = 0		Task Complementarity (Type) = 1	Task Complementarity (Type) = 0
SPC_Dummy	-0.024	-0.075	0.009	4.542**	-0.181	7.459***	0.187	0.130	0.329**
	(-0.46)	(-0.94)	(0.09)	(2.53)	(-0.05)	(2.84)	(1.54)	(0.44)	(2.19)
SPC_Dummy×Time	0.023	0.043*	0.018	-2.165***	-0.483	-3.176***	0.067**	0.127**	0.026
	(0.99)	(1.71)	(0.38)	(-4.10)	(-0.58)	(-4.02)	(2.33)	(2.58)	(0.59)
Time	0.022*	-0.003	0.029*	2.292***	1.121*	2.542***	-0.051**	-0.086**	-0.041*
	(1.78)	(-0.23)	(1.87)	(9.03)	(1.87)	(9.13)	(-2.53)	(-1.99)	(-1.77)
LogSubsidy	-0.005	-0.005	-0.003	-0.263***	-0.374***	-0.194***	0.020***	0.014**	0.023***
	(-1.55)	(-1.46)	(-0.69)	(-4.57)	(-3.90)	(-2.68)	(4.46)	(2.06)	(4.13)
ΔLogSubsidy	-0.000	0.001	-0.001	-0.016	0.000	-0.032	-0.003	-0.009**	-0.001
	(-0.12)	(0.42)	(-0.31)	(-0.48)	(0.00)	(-0.85)	(-1.36)	(-2.20)	(-0.54)
ΔLogOI	0.003***	0.003***	0.003***	0.467***	0.400***	0.499***	0.003***	0.001	0.004***
	(7.86)	(5.08)	(6.39)	(41.50)	(18.13)	(40.02)	(3.33)	(0.51)	(3.31)
ΔLogSales	-0.001	-0.003	-0.000	-0.007	-0.073	0.015	0.003	-0.005	0.006
	(-0.63)	(-1.47)	(-0.14)	(-0.17)	(-0.84)	(0.36)	(0.86)	(-0.70)	(1.47)
LogAge	0.016	0.067**	-0.011	-0.118	0.525	-0.310	0.702***	0.721***	0.693***
	(0.49)	(2.06)	(-0.27)	(-0.17)	(0.39)	(-0.38)	(11.73)	(6.08)	(10.13)
Corporation	0.077***	0.020	0.113***	5.753***	4.723***	6.463***	0.094	-0.131	0.166**
	(3.64)	(0.59)	(4.62)	(7.09)	(3.23)	(6.63)	(1.38)	(-0.96)	(2.09)
Registered_Dummy	1.047**	1.605*	1.780***	10.286**	18.090***	15.545***	-0.038	-0.201	-0.817***
	(2.23)	(1.90)	(3.56)	(2.14)	(3.02)	(5.17)	(-0.08)	(-0.50)	(-3.54)
Gov_Class1	0.084	-1.053	0.003	0.526	-8.793	-1.571	0.851*	0.925*	1.669***
	(0.17)	(-1.24)	(0.07)	(0.11)	(-1.34)	(-0.79)	(1.83)	(1.87)	(10.96)
Gov_Class2	0.059	-1.084	0.028	-2.705	-11.379*	-5.679**	0.701	1.014**	1.373***
	(0.12)	(-1.27)	(0.62)	(-0.55)	(-1.93)	(-2.15)	(1.47)	(2.29)	(7.00)
Gov_Class3	0.039	-1.058	-0.152	0.358	-8.506	1.701	0.803*	1.059**	1.391***
	(0.08)	(-1.24)	(-0.66)	(0.07)	(-1.47)	(0.43)	(1.66)	(2.38)	(3.67)
Gov_Class4	-0.002	-1.237	-0.020	-0.763	-10.409	-2.177	0.598	0.810	1.450***
	(-0.00)	(-1.45)	(-0.34)	(-0.16)	(-1.58)	(-0.97)	(1.26)	(1.56)	(8.39)
Gov_Class5	0.081	-1.059	1.459**	-1.204	-9.434*	11.650	0.512	0.918**	-0.631
	(0.158)	(-1.24)	(2.58)	(-0.25)	(-1.72)	(1.33)	(1.12)	(2.34)	(-1.52)

Constant	-1.096***	-0.501***	-1.776***	-4.228	-2.188	-9.879**	17.900***	18.445***	17.671***
	(-4.39)	(-2.86)	(-3.63)	(-1.49)	(-0.37)	(-2.48)	(80.82)	(41.67)	(61.20)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
S.E. Clustered	by Firm	by Firm	by Firm	by Firm	by Firm	by Firm	by Firm	by Firm	by Firm
Observations	3,781	973	2,808	3,781	973	2,808	3,781	973	2,808
R-squared	0.134	0.1736	0.174	0.269	0.267	0.278	0.247	0.310	0.243
Adj. R-Squared	0.127	0.147	0.164	0.263	0.244	0.270	0.241	0.288	0.235

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels, respectively.
For non-SPC firms, *Task_Complementarity (Type)* takes on 1 if an SE primarily performs Social Service–type or Community-type performance. (The Social Service type is classified as a "service" provider in the Korean SIC and as *Gov_Class2* (or *Gov_Class3*) by the government SE system. The Community type is classified as non-manufacturing provider in the Korean SIC and as *Gov_Class4* by the government SE system. The government classifies SEs into five categories, depending on their business models. *Gov_Class1* SEs employ workers from vulnerable groups. *Gov_Class2* SEs employ workers from vulnerable groups and provide social services. *Gov_Class3* SEs provide social services. *Gov_Class4* SEs focus on social issues in the local community. *Gov_Class5* includes business models other than the aforementioned four categories.) *LogAge* is the log of the firm age. *LogSales* (*LogOI*) is the log of the firm's sales (operating income), and Δ*LogSales (*Δ*LogOI)* is the change of *LogSales* (*LogOI*) from year t-1 to year t. *LogOI* is defined as log of absolute value of OI multiplied by -1 for negative OI. *LogSubsidy* is the log of the government subsidies and donations. Δ*LogSubsidy* is the change of *LogSubsidy. Gov_Class1*, *Gov_Class2*, *Gov_Class3*, *Gov_Class4*, and *Gov_Class5* are government classification indicators. We also control for industry fixed effects. The base-year (i.e., the year before the SPC participation) observations of SPC firms lack the data to calculate change variables, since they lack the 1-year lagged data of sales, operating income, and subsidies. For the base-year observations of SPC participants, we proxy Δ*LogSales*, Δ*LogOI*, and Δ*LogSubsidy* with observations from the first year of the participation.

Table A8. Operating Expenses and Subsidies of SPC and Non-SPC Firms

	(1)	(2)
	Dep var:	
VARIABLES	*Log(Expenses)*	*LogSubsidy*
SPC_Dummy	0.156	-2.538***
	(1.39)	(-3.52)
SPC_Dummy ×Time	0.075***	-0.295
	(2.78)	(-1.33)
Time	-0.072***	1.317***
	(-3.81)	(13.40)
LogSubsidy	0.022***	
	(5.39)	
Δ*LogSubsidy*	-0.003	
	(-1.34)	
Δ*LogSale*	0.004	-0.146***
	(1.09)	(-6.92)
LogSale		0.703***
		(6.31)
Δ*LogOI*	0.000	0.026***
	(0.06)	(3.76)
LogOI		-0.050***
		(-6.90)
LogAge	0.700***	-0.960***
	(12.39)	(-3.89)
Corporation	0.034	-0.656***
	(0.52)	(-2.60)
Registered_Dummy	-0.481	2.122
	(-1.03)	(0.74)
Gov_Class1	0.842*	-1.797
	(1.76)	(-0.62)
Gov_Class2	0.698	-1.323
	(1.43)	(-0.45)
Gov_Class3	0.789	-1.906
	(1.60)	(-0.64)
Gov_Class4	0.628	-2.005
	(1.30)	(-0.69)
Gov_Class5	0.508	-1.790
	(1.08)	(-0.61)
Constant	18.300***	0.369
	(89.96)	(0.15)
Industry FE	Yes	Yes
S.E. Clustered	by Firm	by Firm
Observations	3,781	3,781
R-squared	0.244	0.247
Adj. R-Squared	0.238	0.241

We present t-statistics in parentheses. *, **, and *** correspond to 10 percent, 5 percent, and 1 percent significance levels, respectively.

Log(Expenses) is defined as the log of (Sales-OI), and *LogSubsidy* is the log of the government subsidies and donations. *LogAge* is the log of the firm age. *LogSales* (*LogOI*) is the log of the firm's sales (operating income), and Δ*LogSales (*Δ*LogOI)* is the change of *LogSales* (*LogOI*) from year t-1 to year t. *LogOI* is the log of absolute value of OI multiplied by -1 for negative OI. *LogSubsidy* is the log of the

government subsidies and donations. Δ*LogSubsidy* is the change of *LogSubsidy*. *Gov_Class1*, *Gov_Class2*, *Gov_Class3*, *Gov_Class4*, and *Gov_Class5* are government classification indicators. Government classifies SEs into five categories depending on their business models. *Gov_Class1* SEs employ workers from vulnerable groups. *Gov_Class2* SEs employ workers from vulnerable groups and provide social services. *Gov_Class3* SEs provide social services. *Gov_Class4* SEs focus on social issues in local community. *Gov_Class5* includes various business models other than the aforementioned four categories. We also control for industry fixed effects. The base-year (i.e., the year before the SPC participation) observations of SPC firms cannot be used to calculate change variables, since they lack the 1-year lagged data of sales, operating income, and subsidies. For the base-year observations of SPC participants, we proxy Δ*LogSales*, Δ*LogOI*, and Δ*LogSubsidy* with observations from the first year of the participation.

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