

How a One-Time Incentive Can Induce Long-Term Commitment to Training

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This paper asks whether a one-time incentive can induce workers to commit to short- and long-term training to remain competitively employable. The incentive was a one-time offer of \$60, given to workers who finished two courses within 4 months. It had a remarkable, positive effect on training participation during this period, and a sustained effect beyond it, but only in the condition where two psychological techniques were used to increase commitment to training and to shape perceptions of the incentive. These results have practical implications for companies and governmental organizations wanting well-trained workforces to sustain growth in competitive environments. (Keywords: Workers, Policy Implementation, Human Resources Management, Human Capital Development, Behavioral Change, Financial Incentives)

In a constantly changing work environment, workers must commit and continue to participate in training in order to stay relevant and competitively employable. Just as workers seek to increase their income through training, companies seek to compete globally with well-trained employees, and governments seek a higher GDP by enhancing the employability of their workforces.

While large businesses have the resources needed to create scalable, in-house, mandatory training programs for their employees, small and medium-sized businesses face challenges in ensuring that their employees are equipped with the relevant skill sets to do their jobs well. Such companies must look to outside organizations or the government to provide training and must rely on employees' self-motivation to actively participate in it. In such contexts, workers' participation in training is likely to be low because courses are undertaken at workers' own discretion, potentially leaving them and their employers out-of-touch with the needs of the market. However, this does not need to be so. As we will show here,

The authors contributed equally. We thank Uri Gneezy and Noah Lim for their helpful comments and suggestions. We also thank Rehan Ali for his first-rate editorial help and assistance, as well as the anonymous training center for research collaboration. Research support was funded by the National University of Singapore's Global Asia Institute and the Singapore Ministry of Education's Academic Research Fund.

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a one-time, outcome-based financial incentive—when leveraged on proven psychological techniques—can effectively induce workers’ long-term commitments to training, thus providing companies and governments an economical and scalable solution to manage workers’ continuous participation in training.

We report findings from a randomized control trial (RCT) conducted in the field in collaboration with a non-profit vocational training center in one

of the high-income economies, as defined by the World Bank based on per capita gross national income. The center offers a range of courses on retail and retail management in order to broaden workers’ skills and improve their short- and long-term employability. To motivate workers to take classes, we offered them a one-time cash incentive of \$60 to take two, two-day courses, each of which costs \$30, within 4 months (the intervention period). Since we were interested in engaging them in vocational training over the long term, we tracked the workers and the courses they took for a further 9.5 months (the post-intervention period), in which no incentive was offered for taking courses. If workers developed a long-term commitment to training, they would continue to participate in it even when there was no monetary incentive to do so.

We used two proven psychological techniques to increase the effectiveness of the \$60 incentive. The first technique was *framing*, which presented the incentive as two free courses via a reimbursement of the course fee rather than an equivalent cash reward. The second technique was *commitment*, which was a costless, non-binding statement of intention to take two courses. We believe that these two techniques, used in combination, would significantly increase the desired long-term effect of using an incentive without involving any additional cost to the training center. In the course of this paper, we will discuss the reasons why these techniques work, separately and in tandem.

This research is part of the rapidly growing literature on the use of financial incentives to initiate and sustain good behavior. For example, such incentives have been used to encourage people to exercise, lose weight, and, in developing countries, to send their children to school.¹ Proponents of such incentives believe that the incentives can directly increase and sustain certain desired behaviors in the short term. They also believe that, when offered for a longer period of time, financial incentives can be used to cultivate a behavior into a habit, resulting in long-term behavioral change. However, evidence in support of this claim is scarce and there is widespread concern that the motivating effects of such incentives are short-lived. To the contrary, this paper reports on one of the earliest studies to investigate and report positive long-term effects from using a one-time financial incentive.

Theory

In theory, workers should be self-motivated to take part in training because of the career benefits it can bring. However, since such benefits can take time to materialize, workers with short-term thinking discount them and become unwilling

to engage in training. Similar issues are observed in other domains of life; for example, people do not exercise despite its tremendous health benefits, and smokers do not quit despite the risks of cardiovascular disease and lung cancer because of self-control problems and misperceptions of the associated consequences.² One of the solutions is to offer financial incentives to people who participate in behavioral change programs to increase their motivation to exercise, lose weight, and quit smoking.³ However, while financial incentives are effective in increasing the frequency with which the incentivized behavior is performed, the effects are frequently short-lived and are not sustained beyond the incentivized period. The potential to cultivate long-term behavioral change increases when incentives are offered repeatedly for a longer period of time,⁴ but this “high incentive” approach is very costly and often non-scalable. Therefore, one critical issue when designing and implementing our short-term financial incentive was to ensure that it induced long-term commitment to training in a way that is cost-effective and scalable.

Two Psychological Techniques

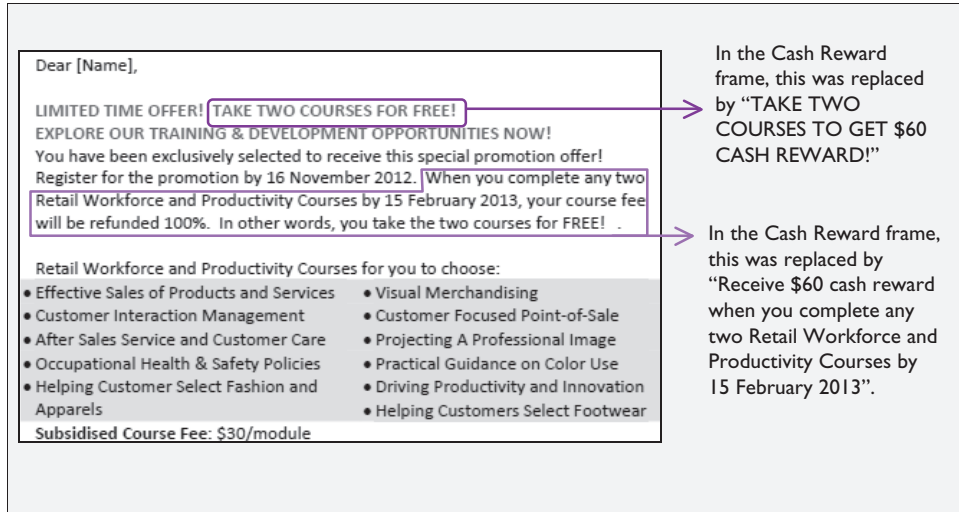
The incentive program we used consisted of three simple steps: workers opt in to the incentive program → complete two courses → receive the \$60 incentive in cash. Within this framework, we used two novel psychological techniques to bring about a long-term impact. The first technique was *incentive framing*. Instead of presenting the financial incentive in the form of a cash reward, we framed it as an opportunity to take two valuable courses for free by offering to fully reimburse the out-of-pocket expenses of enrolling. The second technique was a *commitment requirement* that prompted workers to develop a plan in advance of training by specifying which two courses they wanted to take and when they would take them. These techniques were designed to induce long-term impact by increasing the number of workers drawn into training during the intervention period, and by mitigating the effect of incentive cessation on participation in the post-intervention period, during which no incentive was offered for taking training courses.

Framing

Incentive framing was a technique used to present the \$60 incentive, either as a cash reward or as two free courses via a refund of the course fee (see Figure 1).

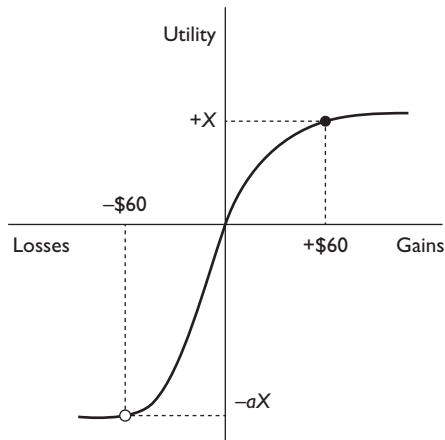
Between the two frames (\$60 cash reward versus two free courses), we expected the “free courses” frame to be more effective in drawing people into training during the intervention period, based on prospect theory. According to this theory, people evaluate outcomes as losses or gains, with a stronger preference for avoiding losses than acquiring gains.⁵ This can be illustrated using a simple graph (Figure 2). A gain of \$60 gives a utility of $+X$ (the black dot), but a loss of \$60 results in a utility of $-aX$ (the outlined white dot), where $a > 1$. Therefore, eliminating the disutility of $-\$60$ should be perceived as more attractive than acquiring the utility of $+\$60$ ($-u(-\$60) > +u(+\$60)$). Based on this theory, we posited that the free courses frame would be perceived as the more attractive incentive since it is the avoidance of a loss (i.e., an out-of-pocket expense, giving a net utility of 0), which would induce a stronger intention to participate in the incentive program than the cash reward, which is a simple gain of X after a loss of $-aX$ (i.e., a net utility of $-(a-1)X < 0$).

FIGURE 1. Framing Technique Used to Shape Perceptions of the Incentive



Note: Course titles have been reworded to anonymize the training center.

FIGURE 2. Using Loss Aversion to Explain the Effect of Incentive Framing



We also expected the framing technique to negate a major potential short-coming of using a one-time incentive, which is that using a cash incentive as a reward for short-term effort may actually reduce long-term commitment to training. This argument stems from mental accounting theory, according to which, people engage in cognitive bookkeeping to keep track of the expenses and rewards associated with a task.⁶ When performing a task that requires an investment of effort, a

person opens a mental account and debits the effort as an expense. When the person receives benefits from the effort, he or she credits the benefits. This last step is crucial in determining a person’s continuous engagement in a task because once the benefits are credited, the person closes the mental account and withdraws effort from the task. One implication of this is that when pursuing a goal that requires a long-term commitment, receiving a reward in the short term may in fact cause premature disengagement.⁷ Naturally, this effect is counterproductive in interventions such as ours, which pay people an incentive within the short term while looking to encourage long-term engagement in a task. In our case, paying workers \$60 for taking two courses might in fact lead them to prematurely disengage from further training. One way to negate this effect is to shape the workers’ perceptions of the incentive away from a reward for short-term effort, a purpose served by our framing technique. Specifically, when we told the workers that they were offered two free courses and issued the \$60 cash incentive as a refund of the fees incurred for taking the two courses, the workers would perceive the incentive as a monetary transaction that offset the incurred expense of taking the courses (i.e., a reimbursement) and not as a reward. Since the workers did not receive a reward for their efforts in taking courses, they would keep their mental accounts open and remain engaged in training.

Commitment Requirement

The second technique we used was a commitment requirement. When the commitment requirement was present, workers were required to specify which two courses they would take and when they would take them. The workers were explicitly prompted to make these selections when they opted in to the incentive program by filling in and returning the reply slip (Figure 3). These selections were not required when the commitment requirement was absent.

The commitment was non-binding and selections could be modified or cancelled, free of charge, so that the commitment would not deter participation.

FIGURE 3. Commitment Requirement Used to Induce Commitment to Training

Yes, I would like to register for the promotion. I understand that I have to finish two Retail Workforce and Productivity courses by 15 February 2013 to get 100% of the course fees refunded.

To complete your registration and be eligible to participate in the promotion, you must indicate two of the following courses you plan to take, and the dates of the courses (please tick).

Course	Date	Course	Date
<input type="checkbox"/> Effective Sales of Products and Services (8 hours, 1 day, 9am-6pm)	<input type="checkbox"/> 12 Nov 2012 <input type="checkbox"/> 12 Dec 2012 <input type="checkbox"/> 11 Jan 2013	<input type="checkbox"/> Visual merchandising (16 hours, 2 days, 9am-6pm)	<input type="checkbox"/> 24-25 Oct 2012 <input type="checkbox"/> 14-15 Nov 2012 <input type="checkbox"/> 29-30 Nov 2012 <input type="checkbox"/> 13-14 Dec 2012
<input type="checkbox"/> Customer Focused Point-of-Sale (16 hours, 2 days, 9am-6pm)	<input type="checkbox"/> 24-25 Oct 2012 <input type="checkbox"/> 15-16 Nov 2012 <input type="checkbox"/> 28-29 Nov 2012 <input type="checkbox"/> 3-4 Dec 2012 <input type="checkbox"/> 20-21 Dec 2012 <input type="checkbox"/> 7-8 Jan 2013 <input type="checkbox"/> 24-25 Jan 2013	<input type="checkbox"/> Practical Guidance on Color Use (16 hours, 2 days, 9am-6pm)	<input type="checkbox"/> 9-10 Jan 2013 <input type="checkbox"/> 28-29 Jan 2013 <input type="checkbox"/> 14-15 Nov 2012 <input type="checkbox"/> 10-11 Dec 2012 <input type="checkbox"/> 15-16 Jan 2013
<input type="checkbox"/> Customer Interaction Management (16 hours, 2 days, 9am-6pm)	<input type="checkbox"/> 21-22 Nov 2012 <input type="checkbox"/> 17-18 Dec 2012 <input type="checkbox"/> 21-22 Jan 2013	<input type="checkbox"/> Driving Productivity and Innovation (16 hours, 2 days, 9am-6pm)	<input type="checkbox"/> 24-25 Oct 2012 <input type="checkbox"/> 28-29 Nov 2012 <input type="checkbox"/> 5-6 Dec 2012 <input type="checkbox"/> 7-8 Jan 2013
<input type="checkbox"/> Occupational Health & Safety Policies (8 hours, 1 day, 9am-6pm)	<input type="checkbox"/> 17-19 Oct 2012 <input type="checkbox"/> 29-31 Oct 2012 <input type="checkbox"/> 7-9 Nov 2012	<input type="checkbox"/> Projecting A Professional Image (16 hours, 2 days, 9am-6pm)	<input type="checkbox"/> 22-23 Nov 2012 <input type="checkbox"/> 3-4 Dec 2012 <input type="checkbox"/> 9-10 Jan 2013

This portion was not included in the reply slip for the ‘no commitment’ condition.

Despite being non-binding, we predicted that the commitment requirement would increase the rate of participation in training. This was based on research that suggests that when people create a specific plan to perform certain actions in a particular situation (“I intend to do x in situation y ”), it increases the likelihood of the plan being implemented, compared to a more general plan (“I intend to achieve x ”).⁸ For example, in a large-scale, work-site study, a reminder that encouraged employees to write down the date and time at which they planned to get a flu vaccine increased the vaccination rate by 4.2%, from 33.1% in the control condition to 37.3% in the treatment condition.⁹ Similarly, we expected that workers who were required to commit to two specific courses would be more likely to actually complete training courses as planned, in comparison with those who were not required to.

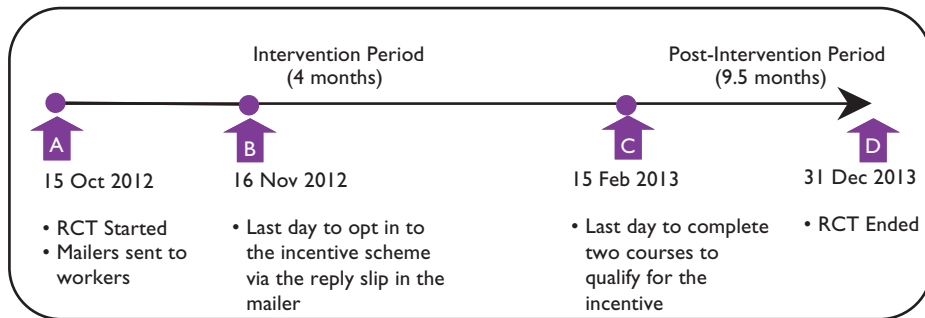
More importantly, we expected the commitment requirement to increase the number of courses taken, not only during the intervention period, but also in the post-intervention period. This prediction is based on the notion that when pursuing a goal that requires a sustained commitment, a person’s commitment to that goal increases if they are mobilized to take action towards achieving it.¹⁰ If the commitment requirement could mobilize the workers to take training courses, it should also result in a more sustained commitment to training, resulting in fewer workers disengaging from training once the incentive was no longer offered.

We tested the effects of incentive framing and the commitment requirement in a 2x2 factorial design (incentive as cash reward vs. free courses; commitment vs. no commitment), along with a no-incentive control condition, giving five experimental conditions in total. We predicted that the two techniques would jointly affect training participation during the post-intervention period and that the workers in the “free courses, commitment” condition would show the strongest long-term commitment to training because the commitment requirement would increase their commitment to training, and the “free courses” frame of the incentive would preserve this commitment by not causing them to disengage from training after receiving the reimbursement for course fees.

Experimental Procedure

The RCT consisted of an intervention period and a post-intervention period. The intervention period lasted 4 months, from 15 October 2012 to 15 February 2013 (points “A” and “C” in Figure 4, respectively). As noted, workers in the four incentive conditions were offered an incentive of \$60 to take two courses during this period. The workers had to opt in to qualify for the incentive by simply indicating “Yes, I would like to register for the promotion” on a reply slip and mailing it back to the training center. They had one month in which to do so (point “B”). The intervention period was immediately followed by the post-intervention period, during which no incentive was offered for any courses undertaken by the workers. The post-intervention period ended on 31 December 2013 (point “D”).

Throughout the intervention and post-intervention periods, the training center conducted business as usual and did not change its day-to-day operations for workers in any of the experimental conditions. Per normal practice, workers who signed up to take training courses, including those involved in the trial, booked

FIGURE 4. Timeframe

the courses and settled the \$30 course fee before attending the courses. Workers in this RCT took the same courses as workers from the general public who were not involved in the RCT.

A total of 4,000 workers (83.5% female, 16.5% male) were contacted, of whom 78.5% attended secondary education (high school) or below. For worker demography, see Table 1. These 4,000 workers were randomly drawn from the training center's database of inactive workers, defined as those who did not complete any courses in the five years prior to the start of the RCT. The 4,000 workers were then randomly assigned to one of the five conditions in the 2x2+1 design. This resulted in 800 workers in each experimental condition.

Procedure and Intervention Details

At the start of the RCT, the training center sent all 4,000 workers a mailer consisting of a cover letter explaining the purpose of the mailer, a booklet describing the objectives and training outcomes of the courses,¹¹ a four-month course schedule, a reply slip, and a pre-paid, reply envelope. The workers received different versions of the cover letter and reply slip, depending on the framing and commitment condition they were in (refer to Figure 1 and Figure 3). In order to test our theory, we held the payment mechanism constant across the two framing conditions; all workers, including those in the "free courses" condition, paid the tuition fee upfront and received the incentive payment afterwards. Hence, we were able to isolate the effect of framing and account for differences, if any, in the participation rate between the two framing conditions. Similarly, the conditions of the commitment were held constant and workers in both commitment conditions could change or cancel their course bookings free of charge. Therefore, we could isolate the psychological effect of the commitment requirement and test its effect on training participation independent of other material costs (e.g., a deposit) typically involved in a commitment.

Dependent Measures and Data Analysis

Our dataset contained two sets of measures: outcome measures and intermediate measures on the effectiveness of our interventions. To test the effectiveness of

TABLE I. Worker Demography

	Control		Cash, No Commitment		Cash, Commitment		Free Courses, No commitment		Free Courses, Commitment		
	n	%	n	%	n	%	n	%	n	%	
Age	15-19	36	4.50	43	5.38	28	3.50	34	4.25	37	4.63
	20-29	144	18.00	144	18.00	129	16.13	134	16.75	144	18.00
	30-39	148	18.50	157	19.63	152	19.00	144	18.00	132	16.50
	40-49	238	29.75	202	25.25	227	28.38	228	28.50	213	26.63
	50-59	191	23.88	194	24.25	209	26.13	195	24.38	215	26.88
	> 60	40	5.00	59	7.38	53	6.63	64	8.00	54	6.75
	Unknown	3	0.38	1	0.13	2	0.25	1	0.13	5	0.63
Gender	Male	132	16.50	128	16.00	116	14.50	144	18.00	154	19.25
	Female	668	83.50	672	84.00	684	85.50	656	82.00	646	80.75
Education	Primary	146	18.25	147	18.38	143	17.88	147	18.38	141	17.63
	Secondary	482	60.25	475	59.38	489	61.13	484	60.50	480	60.00
	Pre-University	93	11.63	92	11.50	80	10.00	85	10.63	94	11.75
	> Degree	54	6.75	60	7.50	64	8.00	59	7.38	58	7.25
	Unknown	25	3.13	26	3.30	24	3.00	25	3.13	27	3.38

our interventions in increasing the workers' long-term commitments to training, we analyzed two outcome measures, both taken at the end of the post-intervention period: the number of courses completed; and the rate of participation, which is the percentage of workers who completed at least one course.

To provide insights on how incentive framing and the commitment requirement affected workers' perceptions of the incentive and their commitments to vocational training, we analyzed three intermediate measures on the effects of these interventions: the proportion of workers who opted in to the incentive scheme ("opt-in rate"); of those who opted in, the proportion that completed two courses ("completion rate"); and the total number of courses completed during the intervention period.

Results

Intermediate Measures

We conducted a 2x2 analysis of variance (ANOVA) model using the opt-in rate as the dependent variable. As expected, more workers opted in to the incentive program when the \$60 incentive was framed as free courses rather than as a cash reward (Table 2, "Opt-In" column). On average, 6.63% of those in the free courses conditions expressed interest, which was 1.44% higher than that of workers in the cash reward conditions; this difference was statistically significant at the 10% level ($F(1, 3196) = 2.97$; $p = 0.09$). These findings are consistent with the assumption that workers in the "cash reward" condition perceived the \$60 as a reward gain and those in the "free courses" condition, as a reversal of an incurred loss. Neither the main effect of the commitment requirement nor its interaction with framing was statistically significant.

We next focused on the 189 workers who opted in, and examined the number of courses they completed during the intervention period with a 2x2 ANOVA. As expected, workers in the conditions where the commitment requirement was used completed more courses on average than their counterparts in the "no commitment" conditions ($M_{\text{commitment}} = 1.51$ vs. $M_{\text{no-commitment}} = 1.13$; $F(1, 185) = 6.39$, $p = 0.01$). Neither the effect of framing nor its interaction with the commitment requirement was statistically significant (effect of framing: $p = 0.11$; interaction: $p > 0.50$).

TABLE 2. Opt-In Rate and Course Completion Conditional on Opt-In

Condition	Opt-In:		Among Workers who Opted in:	
	#	%	# of courses completed during intervention	% of workers who received the incentive
Cash, No Commitment	39	4.88	1.03	17 (43.59%)
Cash, Commitment	44	5.50	1.36	26 (59.09%)
Free Courses, No Commitment	53	6.63	1.23	27 (50.94%)
Free Courses, Commitment	53	6.63	1.66	34 (64.15%)
Total	189	—	—	104 (55.0%)

The commitment requirement also helped the workers earn the cash incentive. In the commitment conditions, 61.86% of those who opted in completed two courses and received the incentive. In contrast, only 47.83% of the workers in the “no commitment” conditions received it. A logistic regression with the completion of two courses as the dependent variable (“1” if two courses were completed, “0” otherwise), and framing and the commitment requirement as the independent variables showed that the effect of the commitment requirement was statistically significant ($\chi^2(1) = 3.85, p = 0.05$). Therefore, the commitment requirement did result in intention being converted into action. Again, neither the effect of framing nor its interaction with the commitment was statistically significant.

We also examined the total number of courses completed on an intention-to-treat¹² basis by including all 4,000 workers in the analysis, regardless of whether they had opted in. We first tested whether the incentive increased course taking and participation by comparing the four incentive conditions (averaged) and the control condition. On average, six times more courses (8.65 versus 1.38 per 100 workers) were completed in the incentive conditions than in the control condition (Figure 5, white bars), a difference that is statistically significant at the 1% level ($t(3998) = 4.77, p < 0.001$). In terms of the participation rate (Figure 6, white bars), 6 out of the 800 workers in the control condition completed at least 1 course, yielding a participation rate of 0.75%. In the incentive conditions, the participation rate significantly increased to an average of 4.63% (test of equality of proportions, $z = 5.10, p < 0.001$). Thus, the financial incentive dramatically increased the number of courses completed and the rate of participation.

We then examined the relative effectiveness of the four designs of the incentive using a 2x2 ANOVA on an intention-to-treat basis. The results showed that on average, workers in the “free courses” conditions completed more courses than those in the “cash reward” conditions (10 versus 7.32 courses per 100 workers). The main effect of framing is statistically significant at the 10% level ($F(1, 3196) = 3.29, p = 0.07$). Also, workers in the conditions where the commitment was required

FIGURE 5. Mean Number of Courses Completed (per 100 workers) in the Short- and Long-Term (error bars show ± 1 SEM)

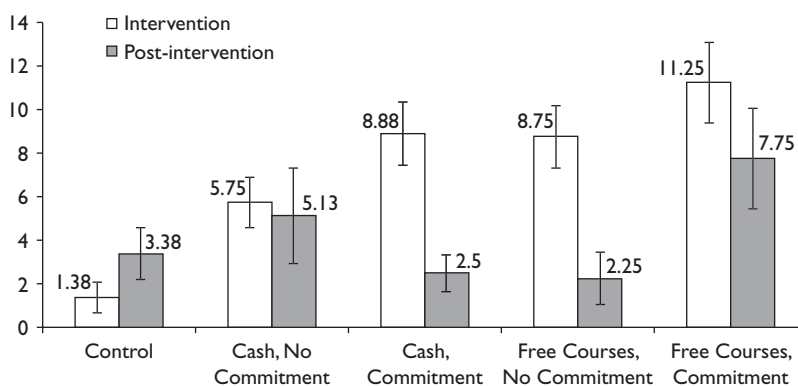
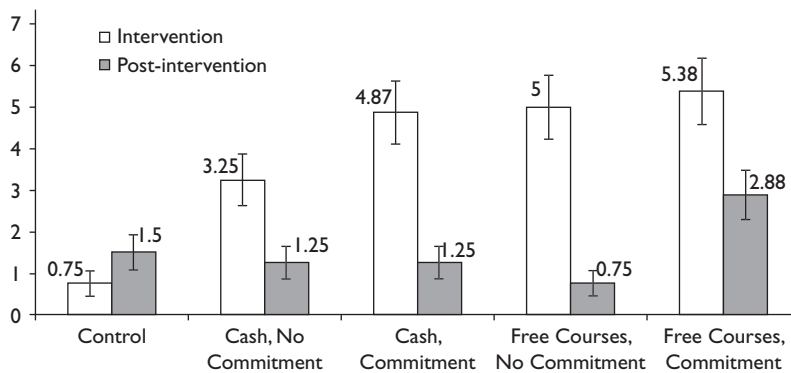


FIGURE 6. Mean Participation Rate (%) in the Short- and Long-Term (error bars show ± 1 SEM)

completed more courses than those in the conditions where it was not (10.07 versus 7.25 courses per 100 workers). The main effect of the commitment was also statistically significant at the 10% level ($F(1, 3196) = 3.60, p = 0.06$). This explains why the number of courses completed was lowest in the “cash reward, no commitment” condition (5.75 courses per 100 workers) and highest in the “free courses, commitment” condition (11.25 courses completed per 100 workers). Relative to the control group, workers in the latter condition completed more courses (11.25 versus 1.38 per 100 workers). A planned contrast within ANOVA (including all the five conditions) suggests that the difference was statistically significant ($t(3995) = 5.12; p < 0.001$). The rate of participation was also higher in this condition than in the control condition (5.38% versus 0.75%) and the difference was statistically significant ($z = 5.37, p < 0.001$).

Outcome Measures: Long-Term Effects

To reiterate, out of the four treatment conditions, we predicted that the workers in the “free courses, commitment” condition would take more courses in the long term than the workers in the rest of the conditions, despite the absence of a financial incentive to take courses during the post-intervention period. As expected, workers in this condition were the most active in training even during the post-intervention period (Figure 5 and Figure 6, grey bars). Workers in this condition completed twice as many courses as those in the control condition (7.75 versus 3.38 per 100 workers), a statistically significant difference at the 10% level ($t(3995) = 1.87; p = 0.06$). The participation rate was also higher in the “free courses, commitment” condition than in the control condition (2.88% versus 1.5%); a test of equality of proportions suggests that the difference was statistically significant at the 10% level ($z = 1.89; p = 0.06$). These improvements are of a remarkable magnitude given that workers in the incentive condition were now paying for the courses without any financial incentive. We also compared the other three incentive conditions with the control condition in terms of the number of

courses completed and the participation rate; none of the results was statistically significant. Therefore, we can confirm that the incentive induced long-term participation in training only when it was implemented as free courses, with a commitment.

We constructed a 2x2 ANOVA model to examine variations among the four incentive conditions using the number of completed courses as the dependent variable. The results show that the two-way interaction between framing and the commitment requirement was statistically significant ($F(1, 3196) = 5.35, p = 0.02$). We next analyzed the participation rate with a binary logistic regression using training participation as the dependent variable (“1” if the worker participated, regardless of the number of courses taken, “0” if the worker took none). The two-way interaction between incentive framing and the commitment requirement was also statistically significant ($\chi^2 = 4.49, p = 0.03$). These results confirmed our prediction that the “free courses” frame and the commitment requirement together accounted for the higher number of courses taken during the post-intervention period.

Implications

We have shown that offering a one-time incentive for enrolling in training can dramatically increase continuous participation in training if the incentive is properly designed and implemented. The optimal incentive design is one where the incentive is presented as a reimbursement to absorb out-of-pocket expenses instead of as a cash reward, and when workers are required to commit to specific courses of their choosing. Using this design for the incentive doubled the participation rate and the number of courses completed in the long term, even in the post-intervention period when no incentive was offered.

Our findings have implications for managers and policymakers who seek to build a well-trained workforce, for researchers who design interventions to increase and sustain good behavior, and for individuals who want to develop good behaviors that will increase their long-term well-being, despite facing challenges such as lack of self-control and delayed benefits.

Implications for Managers and Policymakers

Our work has important implications for managers and policymakers who seek to build well-trained workforces but must rely on workers’ self-motivation to participate in training. While managers and policymakers know that incentives can motivate workers, many are not aware of the importance of incorporating psychological techniques into the design of an effective incentive program. In this regard, our work yields two important insights. First, the four designs of the incentive program produced dramatically different results, despite the fact that the amount used in all four was identical: \$60 for completing two courses. There was a 66% difference in the participation rate between the most- and the least-effective designs (“free courses, commitment” and “cash reward, no commitment,” respectively), and a 96% difference in the number of courses completed. Put differently, managers and policymakers can double the positive effects of a

fixed-amount financial incentive simply by designing it with the two psychological techniques discussed in this article.

Second, our incentive design is highly scalable. The issue of scalability was a key consideration when we designed the intervention, precisely because we wanted to make sure that the design can be widely used by managers and policymakers, and that it can be scaled up to larger worker populations. Tying the incentive to completing two courses keeps the total cost low by only paying those workers who succeed. During the intervention period, 34 out of 800 workers in the “free courses, commitment” condition received the incentive, for a total cost of \$2,040 ($\60×34). With this expenditure, in the post-intervention period, the training center was able to increase the number of trained workers from 12 (1.5% of workers in the control condition) to 23 (2.88% of workers in the “free courses, commitment” condition). Therefore, the average expenditure per worker was about \$185 ($\$2,040/11$). Managers and policymakers can determine whether this is a worthwhile investment based on cost-benefit analysis, but we believe that it is because the potential increase in employability and livelihood is likely to be much higher for these workers than the expenditure of \$185.

Managers and policymakers may consider alternative ways to implement incentive framing and commitment requirements when designing their own incentive programs to increase participation in training. We framed the cash incentive as a reimbursement that offset course fees instead of as a cash reward for taking courses, and as a result, the workers thought that they took two valuable courses for free. We believe it is important to signal the value of a course with an appropriate fee and institute a reimbursement mechanism so that workers feel that they are getting something of value for free. In this regard, managers and policymakers may wish to sensibly increase the fee to enhance perception of a course’s value, while promising workers that the fee will be reimbursed after they complete the course.

With regard to the implementation of the requirement to commit to two specific courses in advance of training, we allowed the workers to cancel or change the bookings free of charge. In other words, this was effectively a non-binding commitment and the workers didn’t have to bear any cost even if they broke the commitment. Some managers and policymakers may wish to use a binding commitment, for example, by charging a non-refundable fee when a course is booked, whether or not a worker ultimately attends the course. We see two opposing forces in this case. On the positive side, we expect a higher rate of course-completion among workers who signed up, due to the increased cost of not showing up for courses. On the negative side, the cost of breaking the commitment may reduce the number of people signing up or committing to courses in the first place. The net effect of the two forces will determine whether imposing a binding commitment is an improvement over our non-binding design. This is an open empirical question that managers and policymakers will have to experiment with in order to find out the results.

Implications for Researchers

In the broader literature, there have been other RCTs that evaluated the use of financial incentives to encourage good behaviors such as attending school, increasing exercise, and decreasing smoking. Most of the studies show promising effects from using financial incentives during the intervention period, but very

few demonstrate sustained effects that last beyond this period. These studies also identify some important factors that determine the long-term success of the intervention, such as increasing the duration of the intervention period and pairing the participant with a mentor.¹³ Our research adds an important insight to this body of work by showing that pairing the framing of a cash incentive with a simple commitment technique can dramatically change the long-term effects of using a short-term incentive. In our case, by framing the incentive as a reimbursement that offset the out-of-pocket expense of training instead of as a reward for taking part in training, and by requiring a commitment, we were able to induce sustained effects in training participation in the post-intervention period, more than doubling the number of courses completed and increasing the participation rate by 92% relative to the control condition. As noted, this improvement is remarkable given that workers themselves bore the out-of-pocket expenses for courses undertaken during the post-intervention period.

These results also add to the debate among researchers about using incentives to develop and sustain good behavior. Opponents of incentives are concerned that people who are financially rewarded for a good behavior may withdraw from the behavior when the reward is no longer given. One implication of the results seen here is that they should elevate the discourse beyond the question of whether or not incentives should be used and instead examine how incentives should be structured and implemented in order to avoid only seeing short-term effects.

Another potentially important research question is how framing the incentive as free courses and using a commitment changed the workers' beliefs about the long-term benefits of training. For example, the free courses frame might have directed the workers' attention to the instrumental value of training whereas the cash reward frame might have directed it to the financial value of the incentive. Conceivably, the former would result in the workers thinking about the long-term benefits of training (e.g., improved employability) more than the latter, in the process engaging them in a stronger commitment to training. Future research can explicitly measure these beliefs and empirically examine the underlying mechanisms through which the two techniques work.

Implications for Individuals

Since people do not always make rational short-term decisions even when the decisions benefit them in the long term, individuals can adopt the techniques described in this article in order to generate short- and long-term benefits for themselves. As discussed, while using short-term incentives to increase their motivation to engage in good behavior can be useful, individuals should also recognize the potential pitfalls of such incentives. To avoid these pitfalls, it is important that the short-term goals they want to achieve be coupled with a rational long-term goal against which they can evaluate their short-term achievements.¹⁴ By expanding their focus from the short term to the long term, individuals can ensure that short-term goals serve as continual markers and motivating nudges towards long-term goals.

Our findings on commitments show that individuals can also improve their chances of developing good behavior by specifying a concrete plan of action. As we

showed in the commitment requirement, a plan of action—in the short and long terms—should be as specific as possible, preferably in the format of “I intend to do x when I encounter situation y ”¹⁵ so that individuals exhibit an almost automatic response when a given situation occurs. Creating such a detailed plan should also increase the attention individuals give to the development of their good behavior.

Limitations

This RCT has two limitations. First, it did not quantify the increase in livelihood as a result of increased participation in training. We acknowledge that this quantification will be useful to managers and policymakers who need to justify why a one-time incentive should be used. However, such an analysis would require us to track the income of each worker over time and that is beyond the scope of the current research, which is focused on developing scalable solutions to induce long-term commitment to training and employability. Second, the RCT focuses on workers in the retail sector. While we believe the same solutions will work for workers in other sectors, especially those with a similar monthly wage, the RCT must be replicated in other situations in order to confirm its applicability.

Conclusion

In summary, this RCT shows that using proven psychological techniques to properly design and present a one-time cash incentive can substantially improve the efficacy of the incentive and sustain its effect into the long term. These results should further the discussion on how to best design and utilize incentives to induce and sustain good behavior. We believe that following this model will prove useful to workers, who can improve their employability; to companies, who can cost-effectively ensure that their workforces are current with the needs of the market, much to the benefit of customers; and to governments, who can subsidize such programs to ensure that their workforces are globally competitive and growth-sustaining.

Notes

1. See U. Gneezy, S. Meier, and P. Rey-Biel, “When and Why Incentives (Don’t) Work to Modify Behavior,” *Journal of Economic Perspectives*, 25/4 (Fall 2011): 191-210.
2. For an insightful discussion of these behavioral problems, see R.H. Thaler and C.R. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (New Haven, CT: Yale University Press, 2008). See also S. Hoch and G. Loewenstein, “Time-Inconsistent Preferences and Consumer Self-Control,” *Journal of Consumer Research*, 17/4 (March 1991): 492-507.
3. See G. Charness and U. Gneezy, “Incentives to Exercise,” *Econometrica*, 77/3 (May 2009): 909-931. See also K.G. Volpp, A.G. Levy, D.A. Asch, J.A. Berline, J.J. Murphy, A. Gomez, H. Sox, J. Zhu, and C. Lerman, “A Randomized Controlled Trial of Financial Incentives for Smoking Cessation,” *Cancer Epidemiology, Biomarkers and Prevention*, 15/1 (January 2006): 12-18; K.G. Volpp, A.B. Troxel, M.V. Pauly, H.A. Glick, A. Puig, D.A. Asch, R. Galvin, J. Zhu, F. Wan, J. DeGuzman, E. Corbett, J. Weiner, and J. Audrain-McGovern, “A Randomized Trial of Financial Incentives for Smoking Cessation,” *The New England Journal of Medicine*, 360/7 (February 2009): 699-709.
4. Charness and Gneezy (2009), op. cit. See also Volpp et al. (2009), op. cit.
5. D. Kahneman and A. Tversky, “Choices, Values, and Frames,” *American Psychological Association*, 39/4 (April 1984): 341-350.

6. R.H. Thaler, "Mental Accounting Matters," *Journal of Behavioral Decision Making*, 12/3 (September 1999): 183-206.
7. C. Camerer, L. Babcock, G. Loewenstein, and R.H. Thaler, "Labor Supply of New York City Cabdrivers: One Day at a Time," *The Quarterly Journal of Economics*, 112/2 (May 1997): 407-441. See also D. Read, G. Loewenstein, and M. Rabin, "Choice Bracketing," *Journal of Risk and Uncertainty*, 19/1-3 (1999): 171-197.
8. P.M. Gollwitzer, "Goal Achievement: The Role of Intentions," *European Review of Social Psychology*, 4/1 (1993): 141-185; P.M. Gollwitzer, "The Volitional Benefits of Planning," in P.M. Gollwitzer, J.A. Bargh, eds., *The Psychology of Action: Linking Cognition and Motivation to Behavior* (New York, NY: Guilford, 1996), pp. 287-312.
9. K.L. Milkman, J. Beshears, J.J. Choi, D. Laibson, and B.C. Madrian, "Using Implementation Intentions Prompts to Enhance Influenza Vaccination Rates," *PNAS*, 108/26 (June 2011): 10415-10420.
10. D. Read, G. Loewenstein, and M. Rabin, "Choice Bracketing," *Journal of Risk and Uncertainty*, 19/1-3 (1999): 171-197. See also A. Bandura and D.H. Schunk, "Cultivating Competence, Self-Efficacy, and Intrinsic Interest through Proximal Self-Motivation," *Journal of Personality and Social Psychology*, 41/3 (September 1981): 586-598.
11. The center offers a total of 48 courses for retail workers. The incentive program examined here only included a subset of 11 courses that provided the most fundamental skills for retail workers, such "Customer Interaction Management," "Effective Sales of Products and Services," and "After Sales Service and Customer Care."
12. Intention-to-treat is an approach to analysis, widely adopted in randomized controlled trials in social sciences, policy-based research, and clinical trials. It requires the researcher to analyze all participants who have been randomly assigned to a treatment condition, regardless of compliance or non-compliance. In our study, this means that we analyze data pertaining to all the 4000 workers, regardless of whether they opted in to the incentive program or not. This approach provides an unbiased comparison among the treatment groups by eliminating any selection bias.
13. Gneezy et al. (2011), op. cit.; Charness and Gneezy (2009), op. cit.; Volpp et al. (2009), op. cit.
14. Camerer et al. (1997), op. cit.; Read, Loewenstein, and Rabin (1999), op. cit.
15. Gollwitzer (1993), op. cit.; Gollwitzer (1996), op. cit.