Soft commitment: a study on demand and compliance*

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Abstract

This paper explores the demand for soft, self-imposed commitment, and subsequent compliance behaviour, using a framed field study in a higher education setting. We find a substantial soft commitment demand and a remarkably high failure to comply with the chosen commitment. Students are more likely to demand soft commitment if they expect the task to be more time-consuming and their relative performance to be lower. Failure to comply is associated with previous grade and personality traits. We find no evidence that soft commitment affects grades.

JEL classification: C93; D03; I23.

Keywords: soft commitment; deadlines; procrastination; education.

1 Introduction

Procrastination is a pervasive phenomenon in the workplace, in the household, in health care and in the classroom. In higher education, procrastinating study effort may lead students to fall behind, submit assignments past their deadlines, and ultimately graduate later and with lower grades and have worse career prospects.

Students who are aware of their tendency to procrastinate may decide to demand commitment to restrict their future choices and thus mitigate future procrastination. Commitment is defined "hard" when it cannot be broken or leads to real economic penalties if broken, and "soft" when it leads to primarily psychological consequences, i.e. either purely psychological costs or minor material costs (Bryan and Nelson, 2010). The key and interesting feature of soft commitment is that it allows for both commitment and flexibility. Thus, if effective, it may be a more appropriate device for individuals who want to restrict their future choices due to self-control problems, but value flexibility due to uncertainty about the future (e.g. costs shocks).[1] While, as further discussed below, there is substantial evidence of students' demand for hard commitment, research on soft commitment is still very limited.

*We are truly grateful to Derrick Chong. Financial support from the Nuffield Foundation (grant EDU/41689) is gratefully acknowledged.

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[1] Amador et al. (2006) and Galperti (2015) study the optimal provision of commitment to individuals who value both commitment and flexibility.

In this paper, we explore the demand for soft, self-imposed commitment – in the form of early deadlines, and subsequent compliance behaviour, using a framed field study in a higher education setting. In particular, we measure soft commitment demand and compliance, study the characteristics of the students who demand commitment and those who break the chosen commitment, and explore whether soft commitment improves grades.

Our sample consists of first year university students enrolled in a course which involves an assessed take-home essay to be submitted by a deadline. As part of our study, the students were asked to complete a brief survey, which automatically entitled them to a lottery ticket with a negligible expected value. The survey asked the students to choose an individual deadline for the submission of the essay, which could be either the official deadline or an earlier date. If students subsequently failed to comply with the self-chosen early deadline, their lottery ticket would become invalid. Hence, commitment was soft: it could be broken, and breaking it involved primarily psychological costs, and a negligible material cost. As early submission did not give the students any material benefit, they had no reason to commit to an early deadline other than the willingness to avoid procrastination.

More than 43% of the students self-chosen an early soft deadline, but the deadline chosen was on average only on 1.90 days earlier than the official one. Thus, the commitment demand was substantial, but the commitment chosen was not strong. Almost 74% of the students who demanded commitment subsequently failed to comply with it.

Students are more likely to demand commitment if they expect the task to be more time-consuming and their relative performance to be lower. They are more likely to break the chosen commitment it if they got a lower grade in the previous assignment, and if they are more extravert and less emotionally stable. The comparison of our treated cohorts with two subsequent untreated cohorts provides no evidence that soft commitment affects grades.

Our study relates to the literature on voluntary commitment in the form of self-chosen deadlines. Using a sample of 99 professionals enrolled in an executive-education course at MIT, Ariely and Wertenbroch (2002) (henceforth AW) find that individuals self-impose intermediate deadlines even if breaking such deadlines leads to a grade penalty.[2] The key difference between our study and AW's study is that, due to the grade penalty, the commitment they offer is hard. Moreover, their grade penalty crucially depends on students' ability and personality, which raises the concern that each individual's cost from breaking the deadline is unknown and variable. Bisin and Hyndman (2014) find a strong demand for self-imposed deadlines – although that does not increase task completion rates. Their study differs from ours because their deadlines are hard, the task is artificial (alphabetising lists of words) and the rewards are guaranteed.

Our work also contributes to the emerging literature on soft commitment. In a recent paper Himmler et al. (2017) offer university students the possibility to sign a non-binding agreement where they declare that they will adhere to the exam schedule recommended by the university. They find that this soft commitment device leads students to take and pass more exams, but does not affect their grade point average. Our study differs from theirs as our soft commitment device is deadline-based.

Finally, by relating personality traits to soft commitment demand and compliance, our work

[2] Ariely and Wertenbroch (2002) also find that students' performance is better under externally imposed, evenly spaced deadlines than self-imposed ones, whereas Burger et al. (2011) find that externally imposed, intermediate deadlines lead to lower task completion rates.

contributes to the literature linking personality traits to economic decisions, particularly self-control behaviour (Hurd et al., 2012).

2 Design

Our sample consists of first year university students in the School of Management at Royal Holloway University of London, enrolled in a marketing course that involves an assessed take-home essay to be submitted by a deadline. The essay counts 60% towards the final grade in the course. As part of our in-class study, all the students were asked by their "seminar leaders" (i.e. the teaching assistants in charge of teaching the tutorials) to complete a brief survey at the beginning of the class. Before completing the survey, the students were asked to sign a consent form, as required by Royal Holloway University's ethical guidelines.[3] The completion of the survey automatically entitled the students to a lottery ticket. The lottery's prizes were Amazon vouchers and the expected value of a ticket was £5. The survey asked each student to nominate an individual deadline for submission of the essay, which could be either the official deadline (which was about 6 weeks after the date of the survey) or an earlier date. If students subsequently failed to comply with the self-chosen early deadline, their lottery ticket would become invalid. Thus, by choosing the official deadline and adhering to it, students could secure their lottery ticket. Since early submissions did not give the students any grade advantage or other reward, and all the essays would be graded after the official deadline, they had no reason to self-impose an early deadline other than their desire to avoid procrastination.[4]

The survey also included questions about the Big-Five personality traits (the 10-item inventory by Gosling et al., 2003), demographic characteristics (gender, age, parental education, and nationality), risk attitudes (the 10-item risk aversion scale by Dohmen et al., 2011), impatience, expected number of hours of work on the essay and expected own and average grade in the essay. The ratio between the expected own grade and expected average grade is used as a measure of relative confidence. At the end of the day on which the survey was run, the students were sent an email to remind them about their chosen deadline, and encouraged to keep the email at hand.[5] No further reminders were sent, to avoid that reminders – rather than commitment – may drive students' submission behaviour.

The in-class study was run in the same course in two successive academic cohorts and the data were pooled across the cohorts. After the course, we collected the grades both in the current essay (grade 2) and in the course's previous essay (grade 1), which was set earlier in the term, had a very similar structure and counted 40% towards the final grade in the course. Due to ethical guidelines, we were not able to have a control group not being offered the possibility to self-impose early deadlines. However, we can compare the grade distribution and failure to submit by the official deadline of our two treated cohorts with those of two untreated cohorts.

[3] The full survey can be found here. The consent form can be found here.

[4] The students knew that neither the seminar leader nor the course lecturer would be informed about their self-chosen deadlines and other answers in the survey.

[5] The students wrote their ID number on the survey, and their email address is given by their ID number, so their names and surnames were never known to the experimenters.

Table 1: Summary Statistics

	N	Mean	SD		N	Mean	SD
Age in years	261	19.33	2.66	Extraversion/Open	258	5.02	0.96
Gender (male)	262	0.48	0.50	Emot. Stable/Consc.	258	5.08	0.91
Parent with Degree	251	0.67	0.47	Agreeableness	259	4.38	0.91
British	254	0.27	0.45	Low Risk Taker	262	0.04	0.19
European/American	254	0.40	0.49	Medium Risk Taker	262	0.64	0.48
Asian/African	254	0.33	0.47	High Risk Taker	262	0.32	0.47
Second Academic Cohort	263	0.49	0.50	Impatience (dummy)	250	0.05	0.22
Expected Hours	251	25.71	22.99	Previous Grade	259	62.25	10.16
Relative Confidence	262	1.15	0.19	Current Grade	256	61.60	10.65
Commit	263	0.43	0.50	Early Deadline	109	1.90	1.65

3 Results

Summary statistics Table 1 presents the summary statistics. As the students filled in paper questionnaires and could not be forced to answer all the questions, the number of observations varies across questions.[6] Little over half of the students are female and the average age is 19. Most students have at least one parent with a degree. Nationalities are very diverse. The two academic cohorts are of very similar size and are not significantly different in terms of observable characteristics. The students expect to work on average 26 hours on the assignment and to do on average 15% better than the average student. Due to significant positive correlations between extraversion and openness, and emotional stability and conscientiousness, the Big Five were condensed to three categories to avoid multicollinearity. The risk aversion scale was combined into three bands – low (0-2), medium (3-6) and high (8-10). A small group of students indicate high aversion to risk. A simple binary indicator for being impatient was constructed based on whether the respondent would prefer to receive their prize immediately after the draw or rather wait one further week and receive a 20% larger prize. Only a small group was identified as impatient. Note that this simple indicator of impatience could reflect either high exponential discounting or quasi-hyperbolic discounting; we are unable to discriminate between the two sources of impatience in the current study. The average grade on the current assignment was similar to the one completed earlier in the term.

More than 43% of the students committed to an early deadline. Conditional on committing, the self-chosen early deadline was on average 1.90 days before the official one. Thus, commitment demand is substantial as in AW, but the commitment chosen is less severe than in AW, namely the chosen deadlines are less distant from the final possible deadline than in AW. Henceforth, we will refer to students as "committed" if they chose a deadline strictly earlier than the official one, and "non committed" otherwise. Over 73% of the students who committed to an early deadline subsequently failed to adhere to it. The self-chosen early deadline was on average 2 days before the official one among the students who failed to comply, and 1.63 before the official deadline among the students who complied. The percentage of students who submitted the essay after the official deadline was 15% among the committed and 9% among the non committed.

[6]The students who did not fully complete the survey are not statistically different from the remaining sample in terms of relevant observable characteristics.

Commitment demand Figure 1 shows the distribution of the self-chosen deadlines, where each deadline is scored on the base of its distance from the official deadline (days in advance). Over 57% of the students chose the official deadline (0 days in advance). Of those committing to an early deadline, the majority chose one day before the official deadline.

Figure 1: Self-chosen deadlines

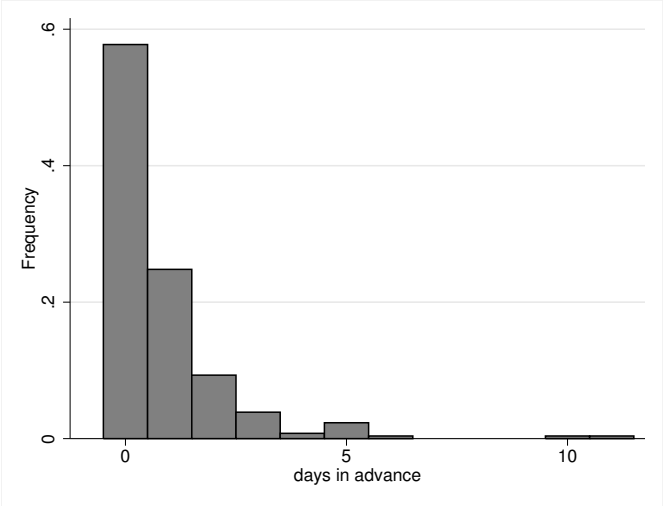


Table 2 shows the correlates of the demand for commitment using a linear probability model and a probit model.[7] For either model, Specification (1) includes controls for gender, parental degree, previous grade, expected effort in terms of hours of work and relative confidence, Specification (2) adds personality measures, and Specification (3) adds measures for willingness to take risk and impatience. We find that students are more likely to demand soft commitment if they expect the task to be more onerous, in terms of how many hours they expect to work on the task and how they expect to perform relative to their peers. The linear probability model shows that those who are less willing to take risks are less willing to commit, which is consistent with the fact that committing imposes additional risk on the individual. While having a positive coefficient, the effect of impatience is not statistically significant. The coefficients of the demographic characteristics that were not significant in this or later stables are not shown. Finally, different personality types do not exhibit different propensity to commit.

Commitment compliance In the full sample, over 37% of the students failed to comply with their chosen deadline – whether an early deadline or the official one. Of those who committed to an early deadline, over 73% subsequently broke it. Table 3 shows the correlates of the failure to comply with the chosen deadline. Students who achieved a lower grade in the previous assignment (and thus are less academically able) are more likely to fail to comply. This is intuitive. Students with lower academic ability are more likely to be unable to finish the essay by an early deadline, and thus to need to keep working on the essay past the soft, self-chosen deadline. Extraverts/open students are more likely to fail to comply, while conscientious/emotionally stable students are more likely to comply. Finally, students with at least a parent with a degree are more likely to fail to comply. The latter may be due to the fact that these students tend

[7] We also explored a tobit model, but there was not enough variation in the commitment demand.

Table 2: Demand for soft commitment

	Linear probability model			Probit (marginal effects)		
	(1)	(2)	(3)	(4)	(5)	(6)
Gender	-0.022	-0.009	-0.011	-0.012	0.003	0.003
	(0.065)	(0.069)	(0.071)	(0.071)	(0.074)	(0.075)
Parents with Degree	0.019	0.003	-0.020	0.017	-0.001	-0.030
	(0.069)	(0.074)	(0.076)	(0.075)	(0.080)	(0.099)
Previous Grade	-0.002	-0.003	-0.003	-0.002	-0.004	-0.004
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.008)
Exp. hours	0.004***	0.004***	0.005***	0.005***	0.005***	0.005
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.010)
Confidence	-0.495***	-0.506***	-0.477**	-0.596***	-0.615***	-0.595
	(0.180)	(0.184)	(0.187)	(0.215)	(0.222)	(1.160)
Extraversion/Open		0.001	0.001		-0.004	-0.003
		(0.036)	(0.038)		(0.040)	(0.040)
Emot. Stable/Consc.		0.028	0.020		0.030	0.021
		(0.037)	(0.039)		(0.041)	(0.058)
Agreeableness		0.003	-0.000		0.005	-0.004
		(0.038)	(0.038)		(0.041)	(0.042)
Medium Risk Taker			0.390**			1.919
			(0.174)			(48.031)
High Risk Taker			0.398**			1.924
			(0.181)			(48.023)
Impatience (dummy)			0.214			0.241
			(0.165)			(0.493)
Other demographics and cohort	Yes	Yes	Yes	Yes	Yes	Yes
N	231	220	211	231	220	211

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

to be relatively more self-confident, and thus think that they will be capable to work well on the essay at the last minute. Alternatively, it may be due to an income effect, as an expected earning of £5 is truly negligible to students from high earning families. While, as mentioned, the students were sent an email on the day of the survey reminding them of the deadline chosen and encouraging them to keep this information at hand, we cannot exclude that some students may have simply forgotten about the chosen commitment.

Table 4 shows the correlates of the failure to comply with the early, soft deadline. Thus, it repeats the regressions in Table 3 in the subsample of students who committed to a strictly early deadline. While the much smaller sample size leads to lower statistical power, the results in Table 3 are confirmed.

Grades As mentioned, due to ethical guidelines, it was not possible to have a control group that was not offered the possibility to choose an early deadline. Hence, we cannot estimate the causal impact of soft commitment demand on grades. However, we can compare our sample's grades and compliance with the official deadline, with those of two untreated cohorts following our study.[8] This is illustrated by Figure 2. The first distribution (from the left) illustrates the grades of the students who were offered the opportunity to choose an early deadline – the "treated cohorts on the treated assignment". The second distribution illustrates the grades in the earlier essay for the same set of students – the "treated cohorts on the untreated assignment". The final two distributions illustrate the grades of the subsequent untreated cohorts in the

[8]Since the course was run for the first time when we ran our study, it is not possible to use *earlier* cohorts.

Table 3: Failure to comply with the chosen deadline

	Linear probability model			Probit (marginal effects)		
	(1)	(2)	(3)	(4)	(5)	(6)
Gender	0.060	0.064	0.089*	0.059	0.061	0.079
	(0.049)	(0.050)	(0.053)	(0.048)	(0.047)	(0.048)
Parentswith Degree	0.119**	0.102*	0.118**	0.116**	0.098*	0.117**
	(0.051)	(0.054)	(0.057)	(0.050)	(0.052)	(0.054)
Previous Grade	-0.005**	-0.005**	-0.005*	-0.006**	-0.006**	-0.006**
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Exp. hours	0.001	-0.000	-0.000	0.001	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Confidence	0.054	0.112	0.087	0.110	0.146	0.127
	(0.137)	(0.136)	(0.141)	(0.132)	(0.127)	(0.134)
Extraversion/Open		0.064**	0.072**		0.073***	0.078***
		(0.026)	(0.028)		(0.025)	(0.026)
Emot. Stable/Consc.		-0.059**	-0.059**		-0.068**	-0.069**
		(0.027)	(0.029)		(0.027)	(0.029)
Agreeableness		0.004	0.002		-0.006	-0.011
		(0.028)	(0.028)		(0.026)	(0.027)
Medium Risk Taker			-0.070			-0.058
			(0.131)			(0.132)
High Risk Taker			-0.126			-0.102
			(0.136)			(0.133)
Impatience (dummy)			0.044			0.036
			(0.123)			(0.109)
Other demographics and cohort	Yes	Yes	Yes	Yes	Yes	Yes
N	231	220	211	231	220	211

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Failure to comply with the early, soft deadline

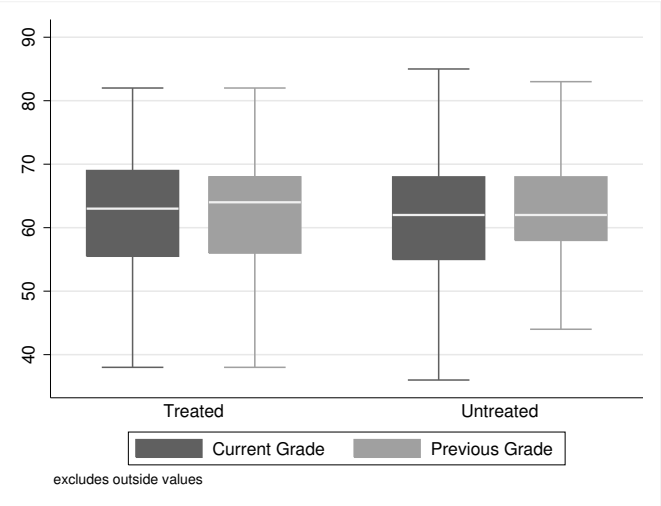
	Linear probability model			Probit (marginal effects)		
	(1)	(2)	(3)	(4)	(5)	(6)
Gender	0.168*	0.162*	0.192*	0.156*	0.160*	0.196**
	(0.093)	(0.097)	(0.101)	(0.085)	(0.084)	(0.086)
Parent with Degree	0.203**	0.146	0.183	0.175**	0.122	0.159*
	(0.093)	(0.106)	(0.110)	(0.077)	(0.089)	(0.091)
Previous Grade	-0.008*	-0.007	-0.007	-0.017***	-0.016***	-0.015***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Exp. hours	0.002	0.001	0.001	0.002	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Confidence	-0.049	-0.025	-0.049	0.043	-0.039	-0.039
	(0.261)	(0.270)	(0.280)	(0.290)	(0.293)	(0.318)
Extraversion/Open		0.088	0.093*		0.094**	0.100**
		(0.053)	(0.055)		(0.044)	(0.046)
Emot. Stable/Consc.		-0.080	-0.059		-0.102**	-0.088
		(0.057)	(0.061)		(0.050)	(0.053)
Agreeableness		-0.010	-0.020		-0.030	-0.041
		(0.055)	(0.057)		(0.050)	(0.051)
Medium Will. to Take Risk			0.053			0.074
			(0.106)			(0.097)
Impatience (dummy)			0.118			0.092
			(0.205)			(0.179)
Other demographics and cohort	Yes	Yes	Yes	Yes	Yes	Yes
N	96	92	89	96	92	89

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

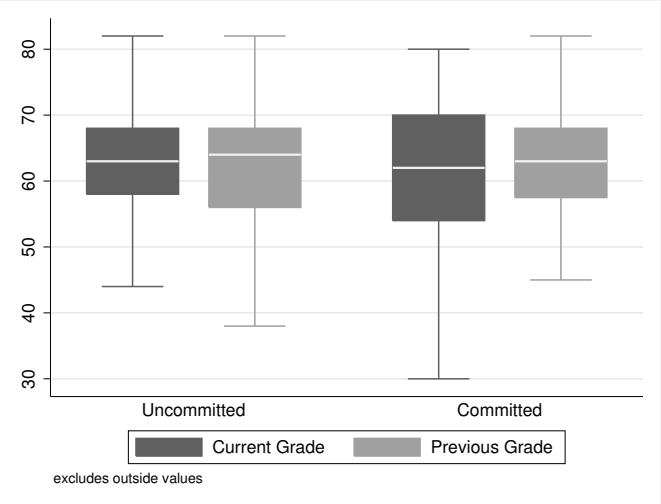
two assignments. We find not evidence that soft commitment affects student grades. This is consistent with recent evidence by Himmler et al. (2017), who find a positive effect of soft commitment on the number of exams taken and passed, but no effect on the grades.

Figure 2: Grade distribution for treated and untreated cohorts



Comparing the second and fourth distribution in Figure 3, it can be noted that there was no selection into committing to an early deadline by the students' grade on their earlier assignment. Moreover, Figure 3 shows that neither the committed nor the non committed exhibited any significant change in average grade between the earlier and the current assignment, even though those who committed appear to have increased the spread in their grades.

Figure 3: Grade distribution by commitment status



Compliance with the official deadline The fraction of students breaking the official deadline is slightly lower in the untreated cohorts than in the treated ones, but the difference is not significant. Similarly, the fraction of committed students breaking the official deadline is bigger than the corresponding fraction of uncommitted students, but the difference is not significant.

4 Conclusion

This paper has presented a study aimed at exploring the demand for soft, self-imposed, deadline-based commitment, and subsequent compliance behaviour. We find a substantial demand for soft commitment, but the commitment chosen is weak, and the failure to comply with the chosen commitment is remarkably high. Students are more likely to demand soft commitment if they expect to work on the task more hours and to perform worse than their peers. They are more likely to break the chosen commitment if they got a lower grade in the previous assignment, are more open/extraver and less emotionally stable/conscientious.

Our findings raise two important, yet unanswered, questions that future research may address. First, in order to design more effective commitment devices, it is necessary to understand why people do not comply with soft commitment. In particular, is the failure to comply mainly driven by unexpected events or by a deviation from full sophistication? Second, it is crucial to understand whether soft commitment is beneficial even when broken. In the context of deadline-based commitment, can self-imposing an early deadline induce a more efficient effort allocation, and thus a better performance, even when people fail to comply with the self-chosen deadline? Understanding the latter would help to evaluate the welfare effects of soft commitment, and compare them with the welfare effects of hard commitment. We hope that future research will build on our study's findings and investigate these policy relevant, open questions.

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