Directing Young Dropouts via SMS:
Evidence from a Field Experiment

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Abstract

Although SMS is constantly used to transmit information, little is known about the use of it by public institutions to direct people. This paper presents a field experiment in France about its effectiveness to direct disadvantaged people toward public services. Two types of treatment SMS were provided: one type whose content was written in a formal style; a second type whose style was much informal. All the SMS were individualized and included specific information about the agencies. Results indicate that the SMS had no significant effect on enrollment. There is also no apparent heterogeneous effect according to individual, agency, or location characteristics. In line with other academic evidence, these findings suggest that SMS have very limited effectiveness for directing this population toward public services.

Keywords: Youth unemployment, Information provision, Public policy, Field experiment
JEL codes: D04, D83, D64, J68

I Introduction

Recent empirical evidence show that planned and assisted job search strategies are effective for young job seekers to find employment (Abel et al., 2019; Belot et al., 2019). Yet, many countries face hard times to identify young school dropouts and direct them to public agencies where they could receive such assistance.[1] This fact raises questions about how institutions communicate and suggests that they should consider other ways of communicating to enroll greater numbers.

Nowadays, most individuals communicate through SMS daily.[2] Whether they are sent to relatives to maintain relationships (Ling, 2010), by private firms to sell their goods (Rettie et al., 2005), or by medical centers to sustain individuals' efforts in combating substance abuse (Mason et al., 2015), SMS seem to be a low-cost effective channel of communication for transmitting information. Accordingly, might SMS be an appropriate solution for public assistance agencies to direct young dropouts?

The style adopted in the SMS seems to matter, especially for young people. Some studies show that texts addressed to young people should be carefully analyzed if they are to provide them with better advice about educational, health or life choices (Hudson et al., 2012; Graham, 2013; Ehrenreich et al., 2014). For instance, the US firm AT&T saw an increase in positive reactions from young people after broadcasting a series of TV commercials in which the protagonists spoke like young people's text messages (Jones and Schieffelin, 2009). Accordingly, if public assistance agencies were to adopt an informal language for their communication, would they be more effective in directing young dropouts?

This paper is the first to address these two questions in the field by sending SMS randomly, whose content is either formal or informal, to direct young dropouts who are not in employment, education or training (NEET) toward public assistance agencies in France.

Related literature This paper relies on the literature on program take-up through the provision of information. In the US, some studies find positive effects from information letters on disability insurance take-up (Armour, 2018), on the demand for tax credits (Bhargava and Manoli, 2015), on social security subscription (Finkelstein and Notowidigdo, 2019), on voting for political elections (Gerber et al., 2008), and on labor force participation from letters correcting misconceptions about social security earnings (Liebman and Luttmer, 2015). Barr and Turner (2018) find a positive effect on higher education enrollment from letters pointing out the benefits of training for displaced workers after the financial crisis. Bettinger et al. (2012) find positive effects on college enrollment of American high-school students by assisting them throughout the application process. In Canada, Oreopoulos and Dunn

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[1]See for instance the OECD collection *Investing in Youth*.
[2]I use the terms *SMS*, *texts*, *text messages*, or *text messaging* as synonyms throughout the whole paper.

(2013) find that online information and video tutorials increase the willingness of high-school students to pursue higher education. In Germany, Berkes et al. (2019) find positive effects on improving graduate students' beliefs about the benefits of graduation returns by providing online information via an interactive survey. Altmann et al. (2018) find a positive effect on exit from unemployment from an information brochure pointing out the harm of being unemployed and suggesting strategies for a return to job-seeking, but only among long-term high-risk unemployed job-seekers. In France, Goldzahl et al. (2018) find no effect from information letters on breast-cancer screening uptake, which describe the risks of this form of cancer and suggest a free-of-charge service with a voucher. However, it is difficult to disentangle the effect of the information itself from the channel through which it is delivered, especially for those which involve several communication media or multiple information content over time. In the present study, young dropouts received a simple information content via SMS, whose language style is either formal or informal. It concludes that sending SMS, whatever style is adopted, do not increase the number of young dropouts enrolled in public assistance agencies.

The rest of the paper is organized as follows. Section II presents the relevant French institutions and some characteristics of young dropouts. Section III describes the experimental design. Section IV shows the results of the experiment. Section V concludes.

II   Background

All French youths are required to remain in the education system until the age of 16. While at school, they start a citizenship pathway built on three compulsory stages. The first concerns classes related to national defense all along 9th grade and 11th grade. The second involves registering at the town hall at most three months after the sixteenth birthday. The third stage is the army day, called "*La Journée Défense et Citoyenneté*" (JDC).

Young people attend the army day once after receiving an official invitation from the Ministry of the Army. Attendance is required by law when taking any diploma or competitive exam under the control of the public authority below the age of 25. Army days have taken place every year at different military centers since 1998. About 40 to 50 young people attend a given army day at a specific military center. The army day agenda takes place between 8:30 am and 5 pm. At the beginning of the day, all participants have to fill in a form pertaining to their situation with respect to schooling or the labor market. They take a 30-minute test before lunch to assess their proficiency in French. During the rest of the day, military instructors aim to raise the participants awareness of national security and of other social issues such as drug abuse, road safety, racism, etc. They also inform participants about public institutions that supply active labor market programs.

Every year about 800,000 young people participate in army days. According to a report from the French general accounting office, 96% to 98% of all French-born individuals do their

Table 1: Descriptive statistics of youths and dropouts during army days

Characteristics	% of all youths	% of all dropouts
	(1)	(2)
Sex (*Male*)	51.11	61.15
Age		
16-17 yo	95.55	75.24
18-21 yo	3.85	21.14
22-25 yo	0.60	3.62
School		
Lower-Secondary	83.95	99.77
Vocational Upper-Secondary	10.58	0.21
General Upper-Secondary	5.05	0.02
Post-Secondary	0.42	0.00
Literacy		
Level A	88.44	64.72
Level B	2.99	13.23
Level C	1.87	5.62
Level D	2.66	8.56
Level E	3.27	7.04
Directed		
Toward any partner public institution	11.79	63.49
Toward missions locales agencies	2.19	32.46
Total number of observations	5,154,495	237,110

Note: This table reports descriptive statistics about some characteristics of youth and dropouts during army days. "Age" is age at the army day. The category "School" for dropouts corresponds to the level at which youth drop out of the school system. *Level A* for "Literacy" corresponds to "normal literacy", while *Level E* corresponds to "illiteracy" and Levels *B* to *D* ranges for decreasing medium levels. Partner public institutions of army days include *Établissements pour l'insertion dans l'emploi* (EPIDE), *Service militaire adapté* (SMA), *Centres d'informations et d'orientation* (CIO), *Savoirs pour réussir* (SPR) and the *missions locales* (ML).
Source: SAGA 2013-2019 database, author calculations.

army day before they turn 25 (Courdescomptes, 2016). Information filled by youth at the beginning of the army day are recorded by military men in an information system called *Système d'aide à la gestion des administrés* (SAGA). This database is primarily used as an up-to-date census of French people who could be called-up in wartime.

Table 1 shows aggregated values of some characteristics averaged over the period January 2013-July 2019. Information on all youths who attended the army day are shown in column (1), while column (2) restricts the sample to school dropouts. It appears that dropouts are more often males, do their army day more often when older, more often have an educational level equivalent to middle school, are less proficient in French, and are more directed toward a partner institution which supplies mostly active labor market programs.

Among them, the *missions locales* agencies are a French institution dedicated to dealing with 16 to 25-years old who potentially face problems in relation to employment, health,

housing, transport, psychology, etc. There are about 440 agencies spread over the whole territory and 13,000 caseworkers performing individual or collective meetings. At the local level, each agency is free to publicize its service through an appropriate medium. Agencies may variously put up posters on walls, communicate through social media, participate in school or business meetings, and so on. However, there is no record or follow-up about the effects of such attempts. At the national level, the main call for NEETs to join is made by military instructors during the army days. Table 1 shows that about one-third of the dropouts are directed to an agency.

It is only possible to verify if direction was successful by merging SAGA together with the information system of the agencies IMILO. Table A.1.1 in Appendix A.1 shows that the effect of military guidance is positive when controlling for individual characteristics and time ($+8$pp $\approx +17\%$). This result is thus driven by selection effects and cannot be interpreted as causal.

III   Field Experiment

The experiment involved sending two SMS to youths identified as dropouts during army days to direct them to the nearest agency.

Dropouts were randomly allocated to one of three groups. One fifth of the dropouts did not receive a SMS and thus constituted the control group. Another fifth made up the first treated group and received SMS, with formal language and content giving the name and the postal address of the nearest agency. The remaining three fifths were allocated to a second treatment group, with more informal language and sub-divided according to an additional specific piece of information. All the second sub-treatment groups received the same basic information as the first treated group and additionally received information about the distance in kilometers, the past enrollment rate, or both. Full texts related to each group are shown in Table 2[3]. All SMS were sent twice, the second serving as a reminder.

The experiment includes youths who did their army day between 1st January 2019 and 31st May 2019. There were two particular conditions to be satisfied in making the selection:

1. The youth was dropout and had never attended a *mission locale* agency;
2. A valid cell phone number was provided in order to properly deliver the SMS.[4]

I used SAGA and IMILO databases to carry out the experiment. Both databases are updated monthly with a one-period lag, i.e. the SAGA database of February 2019 included

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[3]Table A.2.1 in Appendix A.2 shows the text contents in the original version and Figure A.2.1 shows how they are displayed on a smartphone screen.

[4]About 70% provided a valid phone number. This sample is similar to the whole sample based on the available characteristics provided in SAGA.

Table 2: Control and treatment groups

Group	Name
Control	No SMS
Treatment 1	SMS - Formal style
	HELLO {YOUTH FIRSTNAME}, THE {AGENCY NAME} ADVISES YOUTHS ON THEIR PROJECTS. MORE INFORMATION AT {AGENCY ADDRESS}. THE 1ST MEETING DOES NOT REQUIRE AN APPOINTMENT.
Treatment 2	SMS - Informal style + specific information
	HEY {YOUTH FIRSTNAME}, THE {AGENCY NAME} ADVISES YOUTHS ON THEIR PROJECTS. + <SPECIFIC INFO> +. MORE INFORMATION AT {AGENCY ADDRESS}. THE 1ST MEETING DOES NOT REQUIRE AN APPOINTMENT! :)

Note: This table reports the different groups in which youth were allocated during the experiment and the content of the text they received. Elements in curly brackets are variables that changed according to individual name and location.

all youths who did their army day up to January 31st. The same applies for IMILO. After obtaining a copy of the two databases, I cleaned the information related to personal records (last name + first name + gender + date of birth + place of birth). Once the two databases were cleaned, I extracted the sample by merging them on names, using the Jaro-Wrinkler distance algorithm and exact matching on gender, date of birth and place of birth. The output file listed dropouts who had never registered with an agency.

The next task was to assign a particular agency to each youth. Agencies accept youths who live in the same geographical area, generally at the commuting zone level. Otherwise, they redirect them to the appropriate agency. Since postal address of both youth and agencies were available in the data, I assigned the agency located nearest to each individual, based on the geodesic distance algorithm provided it was in the same geographical unit.

In total, 4,457 youths were in the experiment and 3,540 youths were contacted from 6 March 2019 to 17 July 2019. Figure A.3 in Appendix A.3 shows the minimum effect I am able to detect given sample sizes. It is clear that the experiment allows me to detect a minimum effect of between ± 5pp to ± 9pp at the 5% significance level, considering a power of 80%.

IV   Results

Table A.4.1 in Appendix A.4 shows that the randomization process was successful. Therefore, I estimate the following linear probability model with Ordinary Least Squares (OLS) estimators to analyze the overall effect of the SMS:

$$y_{ij} = \alpha + \beta_k T_{i=k} + X'\gamma + \varepsilon_{ij}$$

Table 3: Intention-to-treat effects

OLS Estimates	Entry in agency (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
SMS - Formal	-0.0003	-0.0000	0.0016	0.0020	0.0026	0.0019
	(0.0165)	(0.0168)	(0.0170)	(0.0174)	(0.0179)	(0.0181)
SMS - Informal	-0.0129	-0.0134	-0.0129	-0.0128	-0.0131	-0.0131
	(0.0143)	(0.0143)	(0.0153)	(0.0155)	(0.0161)	(0.0163)
Constant (ref: No SMS)	0.1864***	0.1866***	0.1860***	0.1859***	0.1859***	0.1861***
	(0.0146)	(0.0146)	(0.0159)	(0.0160)	(0.0166)	(0.0130)
N	4,103	4,103	4,103	4,103	4,103	4,103
R-squared	.0003	.0007	.0223	.0242	.0281	.0299
$\beta_{\text{Formal}} = \beta_{\text{Informal}}$	.1599	.1314	.1099	.1107	.0957	.1020
Displayed information	No	Yes	Yes	Yes	Yes	Yes
Individual characteristics	No	No	Yes	Yes	Yes	Yes
Agency characteristics	No	No	No	Yes	Yes	Yes
Location characteristics	No	No	No	No	Yes	Yes
Month fixed effects	No	No	No	No	No	Yes

Note: This table reports OLS estimates, where the dependent variable is a dummy variable equal to one if the individual went to a *mission locale* agency after its army day, zero otherwise. "SMS - X" are dummy variables equal to one if the individual received a specific treatment SMS, zero otherwise. Displayed information corresponds to variables that might have been displayed in the different treatment texts as the distance in km to the agency and the number of youths enrolled in the agency on the month before the army day. Individuals characteristics include dummies for gender, birthplace, age at the army day, literacy level, region of residency. Agency characteristics include dummies for the number of agencies, number of committee rooms, number of points of contacts, number of firms in portfolio, number of caseworkers, mean age of caseworkers, share of male caseworkers, average number of caseload per caseworker. Location characteristics include dummies for disadvantaged area, type of city, local unemployment rate, number of services, number of stores, number of schools, number of transport modes, and number of leisure facilities. Robust standard errors are clustered at the month of the army day level and reported below coefficients in parentheses. The line $\beta_{\text{Formal}} = \beta_{\text{Informal}}$ reports the p-values associated to a Student test of equality of the SMS estimates. *** significant at 1 percent.

where y_{ij} is a dummy variable equal to one if youth i went to the *mission locale* agency j, zero otherwise. $T_{i=k}$ is a dummy variable equal to one if youth i received SMS $k \in \{$Formal, Informal$\}$, zero otherwise. X is a vector of control variables including information displayed in the text, individual characteristics, agency characteristics, location characteristics, and month fixed effects. ε_{ij} is a residual term, orthogonal to treatment variables because of randomization. Turning to parameters, β_k is of interest and measures the intention-to-treat (ITT) effects, i.e. the differential in probabilities of going to an agency in comparison to the control group (which receive no SMS at all) with each group receiving a SMS k.

The OLS estimates of β are reported in Table 3. Column (1) reports the estimates without control variables as a baseline estimation, while columns (2) to (6) introduce all the covariates progressively. The results, which are very stable across specifications, show the absence of statistically significant effects of SMS on the probability of going to a *mission locale* agency, whatever style was adopted.[5] This table also reports p-values of Student tests of equality between the estimates of formal SMS and informal SMS. The two types of treatment do not differ statistically from each other. Table A.5.1 in Appendix A.5 shows the same results with

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[5] I am not able to determine whether or not youth actually opened their SMS but according to the 2018 annual barometer of the *marketing mobile association France*, about 95% of commercial SMS were opened. According to Esendex, 100% of those aged 18-24 opened their SMS in 2018 when a name was provided. Overall, the average treatment effects on the treated (ATT) should be similar to the ITT.

Probit estimates.

The effect of the SMS on agency direction might differ on different dimensions. In order to analyze potential heterogeneous effects, I provide estimates of β by splitting the sample according to the characteristics included as control variables in the above equation. Tables A.6.1, A.6.2, and A.6.3 in Appendix A.6 show estimates according to individual, agency and location characteristics respectively. It is clear that estimates related to treatment groups are non-significant across these dimensions.

I also look at the evolution of the agency take-up rate over time with respect to the type of treatment group youths were allocated to. Figure A.7.2 in Appendix A.7 shows the survival curves of the treatment groups (by month), but there is no difference between groups. I then turn to a proportional hazard model estimated with a Cox regression, controlling for time and individual characteristics. Table A.8.1 in Appendix A.8 also shows no effect from the treatments. Although potential dynamic selection can appear over time, it seems that none of the treatment SMS are statistically different from no SMS in directing young people toward public assistance agencies.

V   Discussion

In light of job search theory, job seekers do not apply for job search assistance because the associated benefits do not exceed the associated cost or because the net value of assistance is below those of outside options. It can be thus rational from young dropouts to not ask for public assistance if the returns of public agencies are not sufficient.

Very few information on agencies' performances are available online. Young people make expectations on the net value of assistance in face of this situation. If those expectations are correct, then none of the communication medium will be effective in directing more young dropouts. However, insights from behavioral economics indicate that the psychological and external barriers encountered by young job seekers may be too great so their expectations are misaligned with reality. Some may overestimate their propensity to exit from a non-employment situation and find a sustainable alternative by themselves.[6] Conversely, young dropouts may underestimate their own abilities and present external locus of control and/or display serious lack of confidence in themselves. As young dropouts may be located beyond the reach of public authorities, they may even feel abandoned and locked into their non-employment situation. This is where public assistance would be the most needed for this population, at least to give them back their confidence.

The objective of the SMS was to indicate the presence of a public agency located nearest to

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[6]Spinnewijn (2015) shows that 80% of US job seekers underestimated their unemployment duration. Mueller et al. (2018) show that about 10% of the incidence of long-term unemployment can be attributable to optimistic bias in the job finding rate.

the young dropouts, in the simplest way at an almost zero cost, and increase their enrollment rate. Information provided in the SMS could have been irrelevant for this population, or the laps of time between the army days and the SMS was too long in practice - 50 days on average. However, the few recent field experiments related to SMS yield also contrasted results. In the US, Castleman and Page (2015) detect a positive effect of about 10% on higher education enrollment from sending a series of SMS to high school students during summer time, in order to counteract a potential drop in motivation. The effects were positive only for students who had no existing plans after high school. Fryer (2016) find no effect on grades from supportive SMS for high school students when they are provided with free cell phones and texts sent daily. Oreopoulos and Petronijevic (2019) and Oreopoulos et al. (2020) also find no effect from coaching text messages on academic performance for students at the University of Toronto, even for those at risk of dropping out. de Chaisemartin et al. (2020) find no effect of three SMS per week during seven months directed to parents of low-income family in France to increase interactions with their children on children abilities.

Directing young dropouts through low-cost SMS has little chance of triggering the expected behavior. The particular vulnerability of the young school dropouts population vis-à-vis the labor markets and macroeconomic conditions makes public interventions necessary. More research on the efficacy of public assistance agencies is needed to provide salient information to young dropouts if one wants to increase enrollment.

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A Online appendix

A.1 Military guidance

Table A.1.1: Effects of military guidance on *mission locale* uptake

OLS Estimates	Entry in agency (0/1)			Time delay (in days)		
	(1)	(2)	(3)	(4)	(5)	(6)
Guided	-0.0826***	0.0196**	0.0827***	-39.0245***	-180.2866***	-78.3699***
	(0.0039)	(0.0078)	(0.0107)	(5.8361)	(33.4892)	(21.6401)
Male		0.0132***	0.0132***		-22.5268***	-19.7562***
		(0.0033)	(0.0033)		(5.1857)	(4.9097)
Under 18		0.0329***	0.0409***		-72.5877***	-48.7616***
		(0.0038)	(0.0034)		(7.0893)	(5.0210)
No diploma		-0.0721**	-0.0522*		130.8770***	114.9493***
		(0.0284)	(0.0273)		(38.8556)	(40.2545)
Normal literacy		0.0555***	0.1060***		-140.2672***	-61.2704***
		(0.0086)	(0.0105)		(31.3574)	(20.6465)
Constant	0.4842***	0.4490***	0.4272***	496.4775***	582.8007***	496.6834***
	(0.0148)	(0.0132)	(0.0037)	(24.0999)	(29.5355)	(7.7115)
N	110,121	110,121	110,121	50,186	50,186	50,186
R-squared	.0062	.1063	.1578	.0013	.0177	.1535
Control variables	No	Yes	Yes	No	Yes	Yes
Month×Year fixed effects	No	No	Yes	No	No	Yes

Note: This table reports OLS estimates, where the dependent variable is a dummy variable equal to one if the individual went to a *mission locale* after its army day, zero otherwise, for columns (1) to (3); and a continuous variable indicating the time to go in a *mission locale* in month if he actually went to a *mission locale* for columns (4) to (6). "Guided" is a dummy variable equal to one if the individual has been openly guided toward a *mission locale* during its JDC, zero otherwise. Individuals characteristics include demeaned dummies for gender, birthplace, age at the army day, school level, literacy level, department of residency. Robust standard errors are reported below coefficients in parentheses. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent. Source: merged SAGA (2013-2019) and IMILO (2020).

A.2 Original version of the SMS

Table A.2.1: Control and treatment groups

Group	Name
Control	No SMS
Treatment 1	SMS - Formal
BONJOUR {PRÉNOM}, LA MISSION LOCALE {NOM ML} AIDE LES JEUNES À TRAVAILLER SUR LEUR PROJET. PLUS D'INFORMATIONS SUR PLACE AU {ADRESSE ML}. LE 1ER ACCUEIL EST SANS RENDEZ-VOUS.	
Treatment 2a	SMS - Informal + distance
SALUT {PRÉNOM}, LA MISSION LOCALE {NOM ML} AIDE LES JEUNES À TRAVAILLER SUR LEUR PROJET. CELLE-CI NE SE TROUVE QU'À {DISTANCE KM ML} KM DE CHEZ TOI. PLUS D'INFORMATIONS SUR PLACE AU {ADRESSE ML}. LE 1ER ACCUEIL EST SANS RENDEZ-VOUS ! :)	
Treatment 2b	SMS - Informal + enrollment
SALUT {PRÉNOM}, LA MISSION LOCALE {NOM ML} AIDE LES JEUNES À TRAVAILLER SUR LEUR PROJET. {NB JEUNES AIDÉS ML} JEUNES COMME TOI ONT ÉTÉ ACCUEILLIS LE MOIS DERNIER. PLUS D'INFORMATIONS SUR PLACE AU {ADRESSE ML}. LE 1ER ACCUEIL EST SANS RENDEZ-VOUS ! :)	
Treatment 2c	SMS - Informal + distance & enrollment
SALUT {PRÉNOM}, LA MISSION LOCALE {NOM ML} AIDE LES JEUNES À TRAVAILLER SUR LEUR PROJET. {NB JEUNES AIDÉS ML} JEUNES COMME TOI ONT ÉTÉ ACCUEILLIS LE MOIS DERNIER. EN PLUS, CELLE-CI NE SE TROUVE QU'À {DISTANCE KM ML} KM DE CHEZ TOI. PLUS D'INFORMATIONS SUR PLACE AU {ADRESSE ML}. LE 1ER ACCUEIL EST SANS RENDEZ-VOUS ! :)	

Note: This table reports the different treatment groups in which youths were allocated during the experiment and the original content of the text they received. Elements in braces are variables that changed according to individual name and residency.

Figure A.2.1: Real examples of texts displayed on an *iPhone* screen
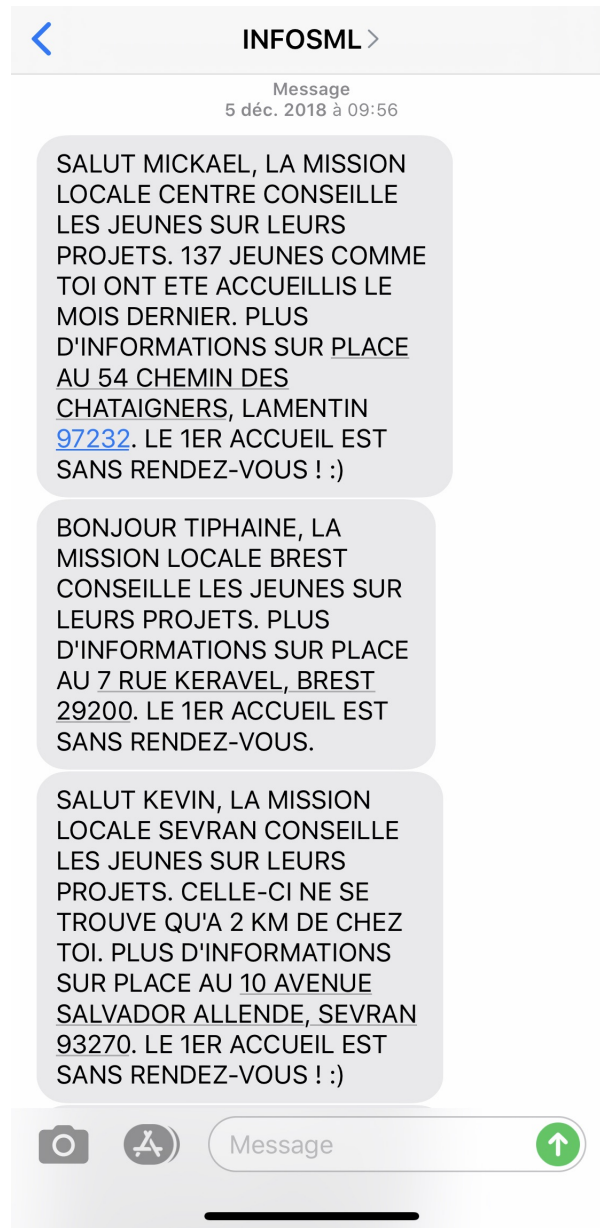
A.3 Power of the experiment

Figure A.3.1: Minimum detectable effect of the experiment
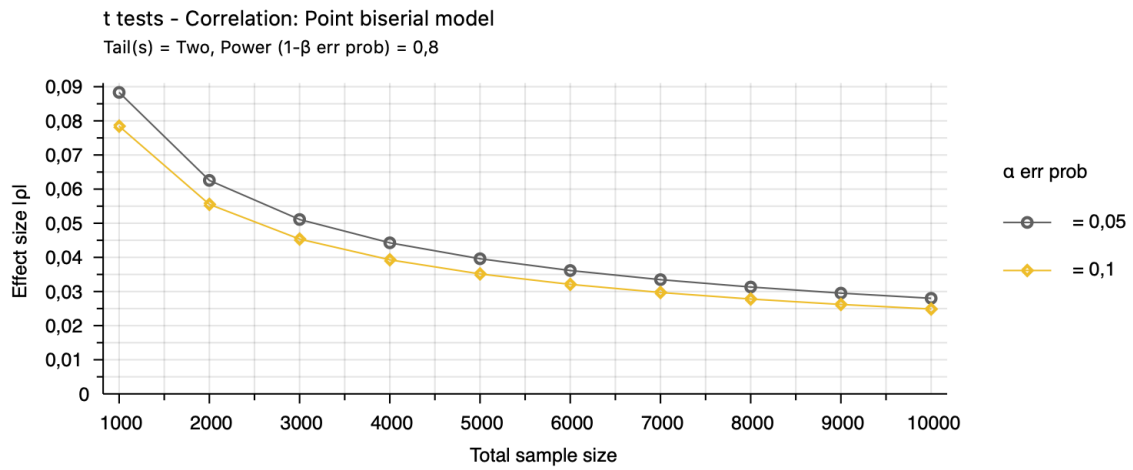
Note: The experiment include 4,457 observations which allow to detect a minimum detectable effect of ≈ 4.5 pp at 5% and ≈ 3.7 pp at 10% significance, with a power of 80%, when all treatment groups are pooled together.

A.4 Randomization tests

Table A.4.1: Randomization Tests

Characteristics	Control No SMS (1)	Treatment groups			
		SMS - Formal		SMS - Informal	
		(2)	(3)	(4)	(5)
	Sample mean	Sample mean	p-value (2)-(1)	Sample mean	p-value (4)-(1)
Gender (= male)	.6227	.6098	.5732	.6088	.4566
Age ($\geq$ 18 yo)	.4308	.4348	.8626	.4222	.6536
Literacy (= A)	.6238	.6098	.5411	.6175	.7354
Guided (= 1)	.3544	.3679	.5505	.3628	.6471
Distance to agency ($\leq$ 5 km)	.4951	.4437	.0283**	.4798	.4235
Enrollment in agency ($\leq$ 100 youths)	.6554	.6678	.5776	.6481	.6909
First Quarter	.6063	.6366	.1845	.6201	.4590
DOM Region	.0731	.0669	.6066	.0779	.6326
IDF Region	.1418	.1338	.6219	.1506	.5174
NE Region	.2301	.2185	.5543	.2123	.2588
NW Region	.1778	.1884	.5577	.1983	.1753
SE Region	.2486	.2609	.5502	.2501	.9300
SW Region	.1287	.1315	.8560	.1109	.1457
F-stat, p-value		0.8150	.6352	0.5476	.8842
Observations	917	897		2,643	

Note: This table reports means across sub-samples of the experimental sample and presents simple randomization tests based on comparing the means across the sub-samples. It also reports the F-stat corresponding to a joint test of null hypothesis for all coefficients estimated after OLS regressions of individual characteristics on treatment group, with p-values based on robust standard errors of the coefficients.

A.5 Non-linear model estimates

Table A.5.1: Intention-to-treat effects

Probit Estimates	Entry in agency (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
SMS - Formal	-0.0003	-0.0000	0.0023	0.0031	0.0037	0.0029
	(0.016)	(0.016)	(0.017)	(0.017)	(0.018)	(0.018)
SMS - Informal	-0.0129	-0.0132	-0.0126	-0.0128	-0.0122	-0.0129
	(0.014)	(0.014)	(0.015)	(0.015)	(0.016)	(0.016)
N	4,103	4,103	4,103	4,103	4,103	4,103
Pseudo R-squared	.0003	.0009	.0249	.0270	.0312	.0331
Information displayed	No	Yes	Yes	Yes	Yes	Yes
Individual characteristics	No	No	Yes	Yes	Yes	Yes
Agency characteristics	No	No	No	Yes	Yes	Yes
Location characteristics	No	No	No	No	Yes	Yes
Month fixed effects	No	No	No	No	No	Yes

Note: This table reports marginal effects from Probit estimates, where the dependent variable is a dummy variable equal to one if the individual went to a *mission locale* agency after its army day, zero otherwise. "SMS - X" are dummy variables equal to one if the individual received a specific treatment SMS, zero otherwise. Displayed information corresponds to variables that might have been displayed in the different treatment texts as the distance in km to the *mission locale* and the number of youths enrolled in the *mission locale* on the month before the army day. Individuals characteristics include demeaned dummies for gender, birthplace, age at the army day, literacy level, region of residency. Agency characteristics include demeaned dummies for the number of agencies, number of committee rooms, number of points of contacts, number of firms in portfolio, number of caseworkers, mean age of caseworkers, share of male caseworkers, average number of caseload per caseworker. Location characteristics include demeaned dummies for disadvantaged area, local unemployment rate, number of services, number of stores, number of schools, number of public transports, number of leisure facilities, number of tourism agencies. Robust standard errors are clustered at the month of the army day level and reported below coefficients in parentheses. *** significant at 1 percent.

A.6 Heterogeneous intention-to-treat effects

Table A.6.1: Intention-to-treat effects across individual characteristics

OLS Estimates	Gender		Age		Literacy		Guided	
	Female	Male	< 18 yo	≥ 18 yo	Bad	Good	No	Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Standard inference								
SMS - Formal	-0.0074	0.0043	0.0104	-0.0174	0.0293	-0.0177	-0.0172	0.0303
	(0.0353)	(0.0176)	(0.0195)	(0.0233)	(0.0302)	(0.0136)	(0.0156)	(0.0241)
SMS - Informal	0.0017	-0.0234	-0.0107	-0.0180	-0.0223	-0.0078	-0.0108	-0.0180
	(0.0316)	(0.0285)	(0.0153)	(0.0171)	(0.0236)	(0.0185)	(0.0172)	(0.0188)
Constant (ref: No SMS)	0.1634***	0.2019***	0.2203***	0.1395***	0.1761***	0.1926***	0.1933***	0.1743***
	(0.0256)	(0.0195)	(0.0116)	(0.0148)	(0.0202)	(0.0133)	(0.0128)	(0.0160)
Panel B: Bootstrap p-values								
SMS - Formal	0.8261	0.8523	0.7163	0.5121	0.3600	0.4613	0.4529	0.3271
SMS - Informal	0.9169	0.2407	0.5993	0.4057	0.3210	0.6995	0.5471	0.5131
Panel C: Randomization inference p-values								
SMS - Formal	0.8170	0.8260	0.7010	0.5050	0.4240	0.4750	0.4800	0.3750
SMS - Informal	0.9260	0.2510	0.6150	0.3900	0.3650	0.7050	0.6020	0.4830
N	1621	2482	2411	1692	1533	2570	2638	1465
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table reports OLS estimates, where the dependent variable is a dummy variable equal to one if the individual went to a *mission locale* agency after its army day, zero otherwise. "X text" are dummy variables equal to one if the individual received a specific treatment text, zero otherwise. Control variables include variables that might have been displayed in the different treatment texts as the distance in km to the agency and the number of youths enrolled in the agency on the month before the army day. Control variables also include month fixed effects. Robust standard errors are clustered at the month of the army day level and reported below coefficients in parentheses in Panel A. Panel B reports p-values associated to the coefficients for a student test against the null hypothesis using a bootstrap procedure with 1,000 repetitions. Panel C reports Fisher exact p-values associated to the coefficients against the sharp null hypothesis using a randomization inference procedure with 1,000 random treatment assignments. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table A.6.2: Intention-to-treat effects across agency characteristics

OLS Estimates	Agencies										Caseworkers					
	Offices		Committee rooms		Points of contact		Firms		Number		Share of male		Age		Caseloads	
	≤	>	≤	>	≤	>	≤	>	≤	>	≤	>	≤	>	≤	>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

Panel A: Standard inference

SMS - Formal	-0.0051	0.0033	0.0113	-0.0054	-0.0010	0.0027	0.0184	-0.0188	-0.0060	0.0036	0.0196	-0.0234	-0.0209	0.0219	-0.0184	0.0185
	(0.0186)	(0.0377)	(0.0226)	(0.0271)	(0.0146)	(0.0266)	(0.0316)	(0.0223)	(0.0147)	(0.0353)	(0.0232)	(0.0249)	(0.0249)	(0.0326)	(0.0413)	(0.0177)
SMS - Informal	-0.0244**	0.0007	-0.0342*	0.0096	0.0079	-0.0327*	-0.0141	-0.0142	-0.0210	-0.0067	-0.0064	-0.0215	-0.0184	-0.0097	-0.0197	-0.0085
	(0.0123)	(0.0268)	(0.0191)	(0.0133)	(0.0111)	(0.0181)	(0.0235)	(0.0152)	(0.0142)	(0.0196)	(0.0218)	(0.0148)	(0.0159)	(0.0211)	(0.0261)	(0.0153)
Constant (ref: No SMS)	0.1915***	0.1808***	0.1886***	0.1845***	0.1657***	0.2060***	0.1776***	0.1966***	0.1912***	0.1831***	0.1845***	0.1896***	0.1930***	0.1812***	0.2080***	0.1659***
	(0.0107)	(0.0222)	(0.0156)	(0.0125)	(0.0085)	(0.0158)	(0.0193)	(0.0111)	(0.0108)	(0.0175)	(0.0160)	(0.0131)	(0.0125)	(0.0181)	(0.0230)	(0.0088)

Panel B: Bootstrap p-values

SMS - Formal	0.8491	0.8888	0.6550	0.5948	0.9652	0.9096	0.4800	0.4949	0.8206	0.8868	0.4574	0.3489	0.4074	0.4058	0.5586	0.4816
SMS - Informal	0.2331	0.9609	0.1117	0.6732	0.7415	0.1496	0.5083	0.5327	0.3219	0.8101	0.7675	0.3023	0.4186	0.6388	0.4454	0.6876

Panel C: Randomization inference p-values

SMS - Formal	0.8180	0.8820	0.6670	0.6460	0.9590	0.9690	0.4890	0.4870	0.8190	0.9170	0.4490	0.3770	0.3940	0.3840	0.5290	0.4550
SMS - Informal	0.2530	0.9780	0.0900*	0.7090	0.7050	0.1220	0.4940	0.5770	0.3040	0.7830	0.7610	0.3280	0.4200	0.6250	0.3610	0.6880
N	2,311	1,792	2,148	1,955	2,068	2,035	2,073	2,030	2,134	1,969	2,100	2,003	2,087	2,016	2,056	2,047
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table reports OLS estimates, where the dependent variable is a dummy variable equal to one if the individual went to a *mission locale* after its army day, zero otherwise. "X text" are dummy variables equal to one if the individual received a specific treatment text, zero otherwise. The heterogeneous dimensions across agencies are dummies set below or above the median number of the dimension. Control variables include variables that might have been displayed in the different treatment texts as the distance in km to the agency and the number of youths enrolled in the agency on the month before the army day. Control variables also include month fixed effects. Robust standard errors are clustered at the month of the army day level and reported below coefficients in parentheses in Panel A. Panel B reports p-values associated to the coefficients for a student test against the null hypothesis using a bootstrap procedure with 1,000 repetitions. Panel C reports Fisher exact p-values associated to the coefficients against the sharp null hypothesis using a randomization inference procedure with 1,000 random treatment assignments. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table A.6.3: Intention-to-treat effects across location characteristics

OLS Estimates	Disadvantaged area		Type of city		Unemployment rate		Services		Stores		Schools		Transport modes		Leisure facilities	
	No	Yes	Rural	Urban	≤	>	≤	>	≤	>	≤	>	≤	>	≤	>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

Panel A: Standard inference

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
SMS - Formal	-0.0056	0.0293	-0.0127	0.0015	0.0123	-0.0186	-0.0100	0.0082	-0.0136	0.0128	-0.0082	0.0061	-0.0148	0.0141	-0.0288	0.0279*
	(0.0188)	(0.0311)	(0.0234)	(0.0184)	(0.0230)	(0.0231)	(0.0276)	(0.0107)	(0.0247)	(0.0100)	(0.0318)	(0.0131)	(0.0207)	(0.0212)	(0.0269)	(0.0161)
SMS - Informal	-0.0201	0.0177	0.0285	-0.0214	-0.0130	-0.0172	-0.0085	-0.0194	-0.0074	-0.0205	-0.0085	-0.0195	-0.0222	-0.0050	-0.0189	-0.0090
	(0.0220)	(0.0255)	(0.0190)	(0.0156)	(0.0160)	(0.0231)	(0.0216)	(0.0148)	(0.0216)	(0.0139)	(0.0228)	(0.0171)	(0.0137)	(0.0171)	(0.0274)	(0.0085)
Constant (ref: No SMS)	0.1868***	0.1833***	0.1805***	0.1879***	0.1675***	0.2110***	0.1883***	0.1860***	0.1913***	0.1830***	0.1865***	0.1879***	0.2006***	0.1722***	0.1977***	0.1768***
	(0.0166)	(0.0185)	(0.0152)	(0.0126)	(0.0100)	(0.0178)	(0.0180)	(0.0088)	(0.0178)	(0.0090)	(0.0199)	(0.0114)	(0.0115)	(0.0133)	(0.0214)	(0.0071)

Panel B: Bootstrap p-values

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
SMS - Formal	0.8132	0.5206	0.7616	0.9455	0.6097	0.5926	0.6791	0.7739	0.6151	0.6171	0.7630	0.8326	0.5548	0.6344	0.2406	0.2891
SMS - Informal	0.2563	0.6053	0.4869	0.1989	0.5278	0.5203	0.6907	0.3644	0.7485	0.3392	0.6982	0.3730	0.2959	0.8181	0.3780	0.6819

Panel C: Randomization inference p-values

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
SMS - Formal	0.8320	0.5410	0.7530	0.9490	0.6690	0.4750	0.7200	0.7450	0.6450	0.6160	0.7690	0.8190	0.5680	0.6340	0.2990	0.2920
SMS - Informal	0.2430	0.6080	0.5180	0.1820	0.5110	0.4910	0.7130	0.3540	0.7490	0.3040	0.7250	0.3280	0.2890	0.8120	0.3880	0.6810
N	3326	777	684	3419	2167	1936	2065	2038	2071	2032	2092	2011	2207	1896	2084	2019
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table reports OLS estimates, where the dependent variable is a dummy variable equal to one if the individual went to a *mission locale* after its army day, zero otherwise. "X text" are dummy variables equal to one if the individual received a specific treatment text, zero otherwise. The heterogeneous dimensions across locations are dummies set below or above the median number of the dimension. Control variables include variables that might have been displayed in the different treatment texts as the distance in km to the agency and the number of youths enrolled in the agency on the month before the army day. Control variables also include month fixed effects. Robust standard errors are clustered at the month of the army day level and reported below coefficients in Panel A. Panel B reports coefficients in parentheses in Panel A. Panel B reports p-values associated to the coefficients for a student test against the null hypothesis using a bootstrap procedure with 1,000 repetitions. Panel C reports Fisher exact p-values associated to the coefficients against the sharp null hypothesis using a randomization inference procedure with 1,000 random treatment assignments. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

A.7 Survival curves

Figure A.7.1: Survival rates in outside-agency situation
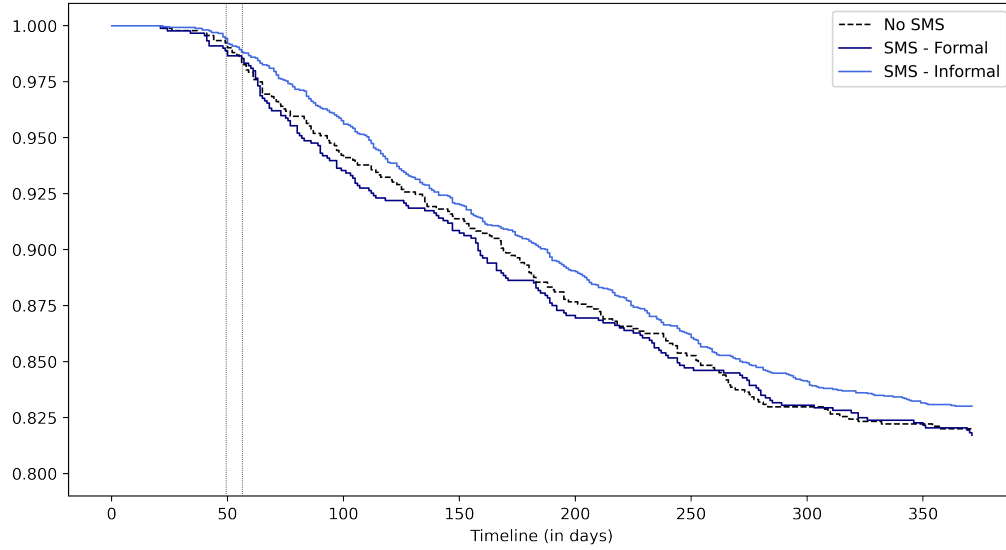
Note: Date 0 corresponds to the date of the army day. The two vertical dotted lines show the mean dates at which the first and second SMS were sent respectively. "Outside-agency" situation refers to a situation where youths are not registered at a *mission locale* agency yet (N = 4,457).
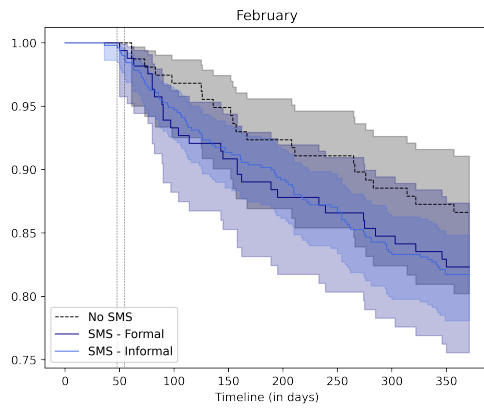
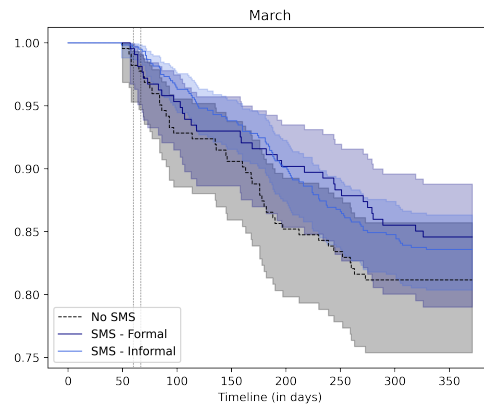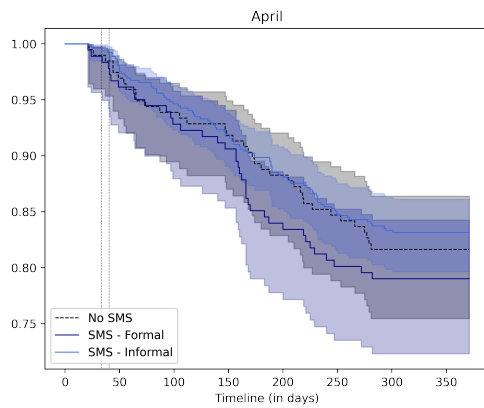Figure A.7.2: Monthly survival curves
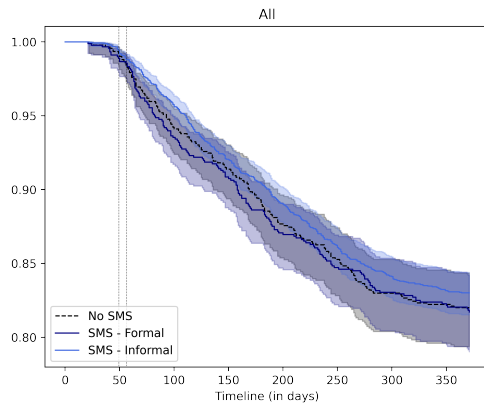
(a) Survival rates
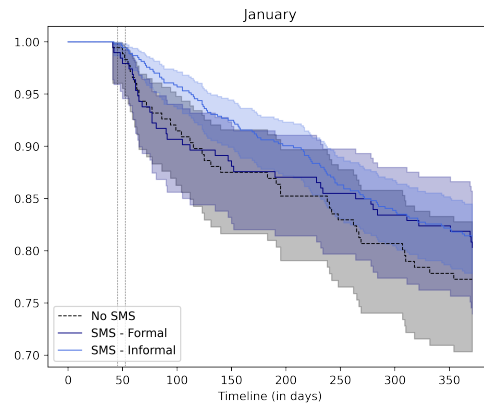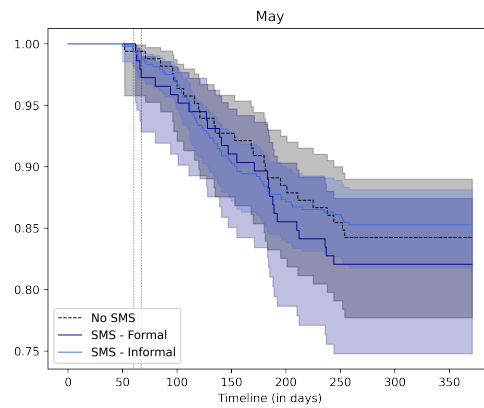
(b) Survival rates in January

(c) Survival rates in February

(d) Survival rates in March

(e) Survival rates in April

(f) Survival rates in May

Note: Months are defined according to the month of the army day.

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A.8 Proportional hazard model outputs

Table A.8.1: Effects of treatment and covariates on hazard rates

PHM Estimates covariate	coef	exp(coef)	se(coef)	coef lower 95%	coef upper 95%	exp(coef) lower 95%	exp(coef) upper 95%	z	p	-log2(p)
SMS - Formal	0.03	1.03	0.11	-0.19	0.25	0.83	1.28	0.26	0.79	0.33
SMS - Informal	-0.07	0.93	0.09	-0.25	0.11	0.78	1.11	-0.78	0.43	1.21
Distance $\leq$ 5 km	0.11	1.11	0.07	-0.04	0.25	0.96	1.29	1.41	0.16	2.65
Enrollment $\leq$ 100 youth	0.08	1.09	0.08	-0.07	0.24	0.93	1.27	1.04	0.30	1.75
Age ¿ 18 yo	-0.58	0.56	0.08	-0.74	-0.42	0.48	0.65	-7.31	0.00	41.74
Literacy = A	0.08	1.09	0.08	-0.07	0.24	0.94	1.27	1.10	0.27	1.89
2nd quarter	-0.04	0.96	0.08	-0.20	0.11	0.82	1.12	-0.57	0.57	0.81
Île-de-France	-0.39	0.68	0.19	-0.77	-0.02	0.47	0.98	-2.06	0.04	4.68
North-East	0.24	1.27	0.16	-0.08	0.56	0.93	1.75	1.48	0.14	2.86
North-West	0.14	1.15	0.17	-0.19	0.46	0.83	1.59	0.84	0.40	1.33
South-East	0.04	1.04	0.16	-0.28	0.36	0.76	1.44	0.27	0.79	0.34
South-West	-0.22	0.80	0.19	-0.59	0.14	0.55	1.15	-1.21	0.23	2.13
Number of subjects										4,457
Number of events										778
Log-likelihood										-6415.74
Concordance										0.60
Log-likelihood ratio test										98.10
-log2(p)										49.44

Note: This table reports proportional hazard model estimates with a Cox regression, where the dependent variable is the hazard rate of going to a *mission locale* one specific day after the army day, given the number of elapsed days between the two events.

Figure A.8.1: Estimates of treatment and covariate effects on the hazard ratios
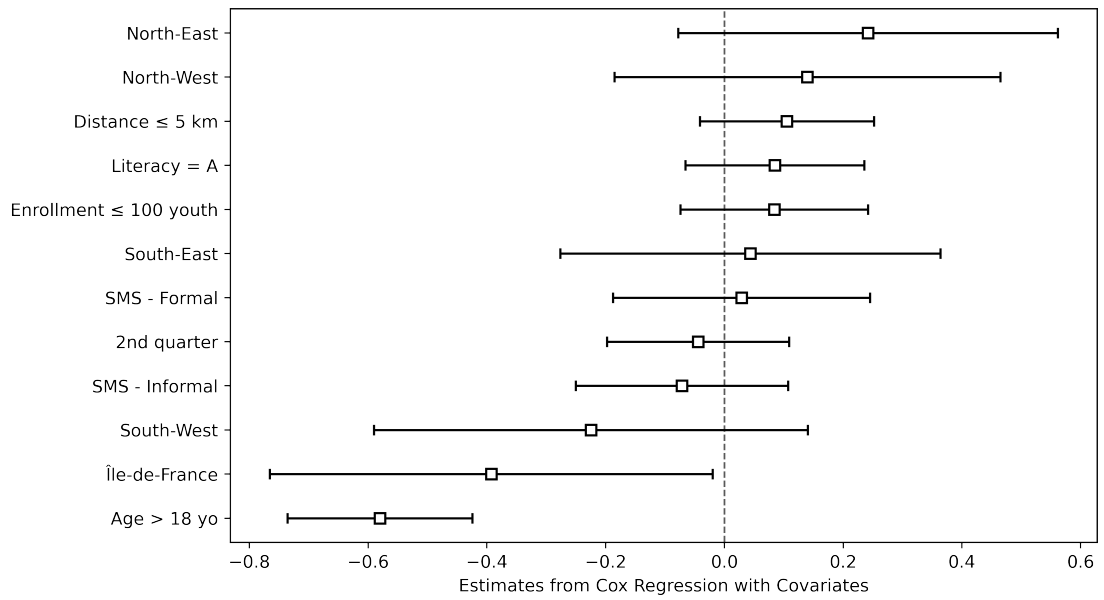
Note: Estimates of covariates on the hazard ratios are obtained with a proportional hazard model estimated by Cox regression shown in Table A.8.1.