Annex 1. Pact USAID/ENGAGE Memo: Impact of Awareness, Engagement and Motivation on Civic Literacy in Ukraine

ENGAGE

Enhance Non-Governmental Actors and Grassroots Engagement

MEMORANDUM

Re: Impact of Awareness, Engagement and Motivation on Civic Literacy in Ukraine
From: USAID/ENGAGE, Pact Inc.
To: USAID
Date: April 30, 2021

Executive summary

The purpose of this memo is to trace the impact of three factors (civic awareness, civic engagement, and motivation to participate in civic activities) on the level of civic literacy among the general population and participants of USAID/ENGAGE events by means of multivariate linear regression[1]. Demographic (structural) variables[2] are taken into account as a separate factor.

We built and compared models for two samples: the first representing the Ukrainian population in general, and the second representing the participants of USAID/ENGAGE events. The domination of demographic factors in both models indicates that civic literacy to a certain extent depends on the respondent's social background, but not on his/her personal choices. The importance of education level for better Civic Literacy Test (CLT) scores means that having general knowledge is crucial for better civic literacy, and that basic education might not be enough to qualify participation in more professionalized types of civic action.

The most important difference between the models for the population (comparison) and participants (treatment) sample is that, for the latter, engagement factor is significant. Therefore, higher levels of civic literacy among participants correlates to more active civic engagement, while for the Ukrainian population, civic literacy is driven by the general knowledge and mere awareness of the existing participation options. Thus, the current and crucial challenge for all stakeholders who are interested in better civic literacy of the population is not to improve it per se, but rather to stimulate active engagement. Only the practical need to use acquired knowledge (the higher impact of the engagement factor), will allow for increased civic literacy of Ukrainians.

The key findings of the memo can be summarized as follows:

- the mean CLT score for participants is for 2.97 points higher than the results of the general population;

[1] Multivariate linear regressions are routinely used in many areas of applications such as econometrics, financial engineering, psychometrics to model the predictive relationships of multiple related responses on a set of predictors. (*Dimension reduction and coefficient estimation in multivariate linear regression. Ming Yuan and Ali Ekici, Georgia Institute of Technology, Atlanta, USA.*)

[2] Socio-demographic variables include, for example, age, sex, education, migration background and ethnicity, religious affiliation, marital status, household, employment, and income. https://www.gesis.org/en/gesis-survey-guidelines/instruments/survey-instruments/socio-demographic-variables

- The awareness about options for civic engagement is comparable for both samples, but participants in USAID/ENGAGE activities are more likely to actually engagement in civic activism;
- the COVID epidemic had a disruptive influence on civic engagement for 33.3% of the participants;
- most participants' interest in civic engagement is driven by personal ambitions, trust in the leaders of civic initiatives, and the absence of negative consequences for activism;
- the demographic factor is by far the most important heuristic in predicting the CLT score for both general population and participants of the USAID/ENGAGE events;
- engagement in civic activities leads to a higher CLT score only for the participants, but not the general population;
- being aware of the options to send formal information requests and to sign electronic petitions results in a statistically significant increase in CLT scores for both samples;
- absence of direct motivation leads to lower interest in civic literacy in general for the participants in USAID/ENGAGE events.

The memo includes sections I and II describing the sources of data, general framework and research methodology. Section III provides a descriptive analysis of CLT scores for the general population and participants, as well as discusses CLT results in terms of core factors of civic activism (motivation, awareness and engagement). In Section IV, the multivariate linear models were built for population and participants' samples to find out if the CLT is dependent on the core factors and how this dependency is established.

I. Data Sources

Data for this memo comes from the two sources. The first source is the Civic Literacy Test (CLT) part of the ENGAGE Civic Engagement Poll (CEP) conducted in July-August, 2020.

The CEP is a representative sample of the Ukrainian population, with 2097 instances of observation. The sample design corresponds to the distribution of the adult population of Ukraine by age, sex, oblast, and settlement type according to the data of the State Statistics Service of Ukraine as of January 1, 2019 (excluding AR Crimea and NGCA of Donetsk and Luhansk oblasts) (ENGAGE IS Poll Presentation, 2020). Data was collected via face-to-face surveys using the CAPI method (interviewers enter data on tablets)[3].

The Civic Literacy Test (CLT) is a part of CEP, and measures civic literacy levels of the general population. The CLT provides citizens with 13 questions that each have one correct answer; they mostly concern rights and freedoms enumerated in the Ukrainian constitution, as well as other questions concerning general governance processes. In the CLT, every correct answer awards one point, and the total number of points is identified as the "total civic literacy score".

In this memo, the CEP sample is compared with a treatment group, randomly selected from the 5th wave of the Pact Activists Survey (PAS) conducted in July-August, 2020. The PAS contains the same questions as the CEP, and the sample contains 979 observations from 29800 potential contacts in the USAID/ENGAGE contacts database. Therefore, it is representative for participants of the USAID/ENGAGE activities without the control for demographic features like age, sex, etc. However, this sample cannot be considered representative for Ukrainian civic activists in general. The CAWI method (online interviews) was used to collect the data.

The demographic features in PAS (treatment) are distributed differently than those of CEP (comparison). For the purposes of this memo, we will use a selection of these features: gender, region, settlement size, education and income[4]. Males are underrepresented in the participants' sample: only

[3] Face-to-face interviews at the respondent's home, recorded on tablets

[4] As it will be shown later, the selected features have a statistically significant impact on the CLT score for either or both of the samples.

27.68% of responses were given by male participants, while males make up nearly 45% of the general population. The regional distribution in the case of PAS is more even, while CEP reflects proportional distribution according to the actual population of oblasts. Therefore, the participants from Eastern regions and the capital Kyiv are overrepresented in PAS.

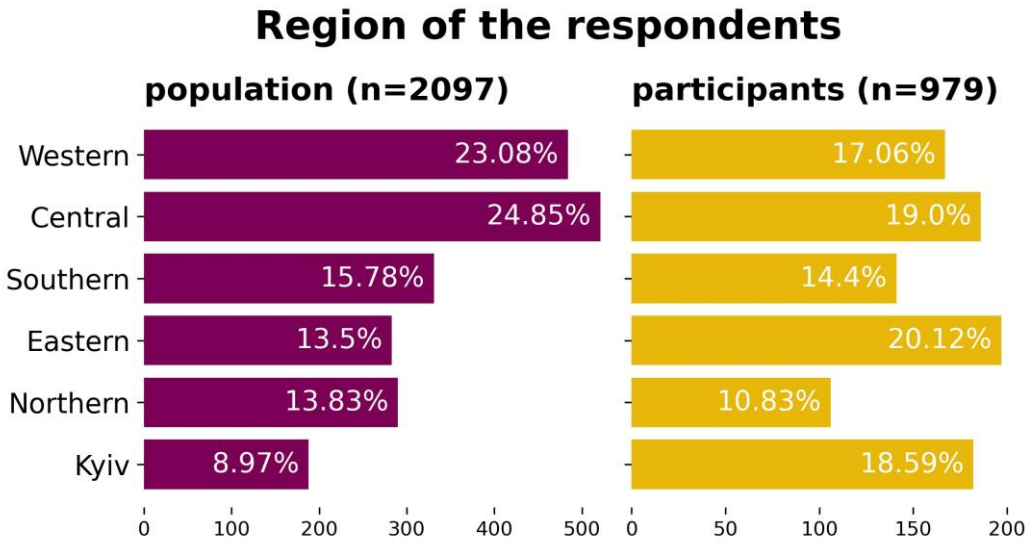


Figure 1: *Distribution of observations according to region, with CEP representing the population sample (in blue), and PAS representing the participants' sample (in green)*

On average, respondents in the participants sample are more educated and come from bigger cities. Four-fifth (81%) of them have higher education and 68.95% live in settlements with a population of more than 100,000. In contrast, 63.09% of the general population sample do not have higher education, and more than half (53.36%) lives in rural areas or other settlements with a population of less than 50,000. The income distributions are more similar, although PAS respondents tend to report being more well-off. The differences in distributions don't allow us to directly compare these two samples for the estimation of the treatment effect. Therefore, we opted for a different methodological framework, which is described below. (For more detailed information on the distribution of demographic data please refer to the visualizations in Appendix 3).

II. Framework and Methodology

The CEP's modular structure allows for the extraction of the factors shaping civic activism in Ukraine. As USAID/ENGAGE focuses on raising citizen awareness of and engagement in civic activities, this memo zooms into these pertinent factors. Moreover, being aware of available options is not enough to transform a person into an activist: they have to be properly *motivated*. Therefore, the basic assumption of this memo's states that motivation along with awareness and engagement are the three core elements of civic activism (participation) (see Figure 2).

Lack of awareness (engagement-motivation) might mean that the potential of civic engagement is not utilized to the full extent, because neither individuals nor organizations use all available leverages and instruments. Demotivated individuals (awareness-engagement) tend to abandon activism, channeling their efforts into achieving alternative goals. Without engagement (awareness-motivation), motivation and awareness can hardly lead to any result at all. If all three factors (awareness-engagement-motivation) are maximized for every activist, active citizens' activities would lead to the greatest possible public benefit, making local and national governance processes more representative, participatory, and accountable to Ukrainian society.

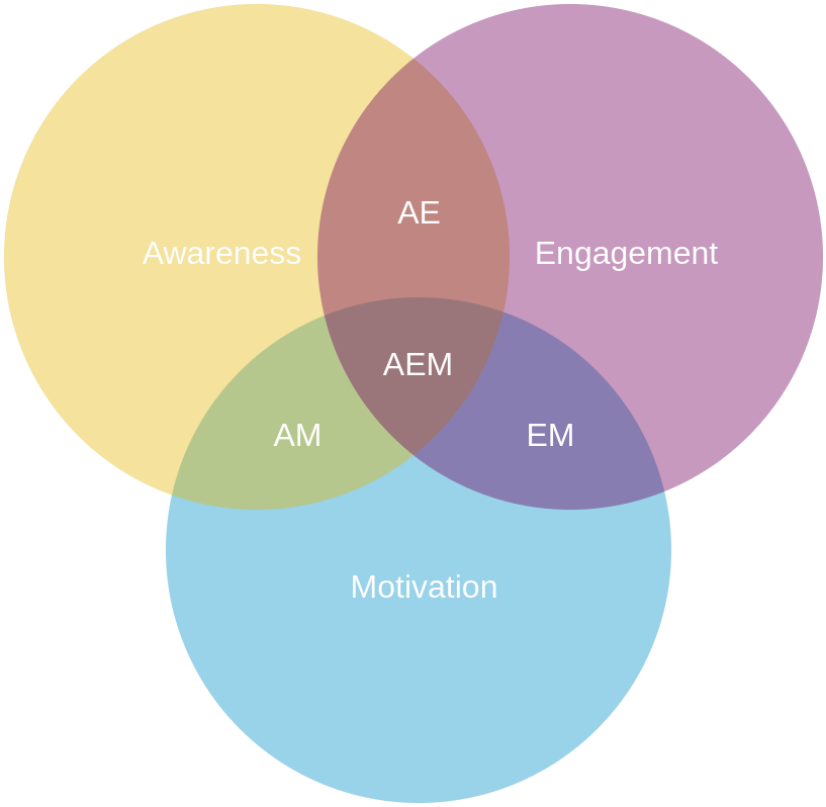


Figure 2: *Core elements of civic activism framework*

Having defined this framework, we will now look at how each element influences other variables. One of such variables is civic knowledge (literacy). The experts of the USAID/ENGAGE Activity developed the Civic Literacy Test consisting of 13 questions, (see the full list in Appendix 1), to assess this kind of knowledge. In this memo, ***we aim at finding out if the CLT is dependent on the core elements and how this dependency is established.***

Both CEP (comparison) and PAS (treatment) contain sets of questions suitable for operationalizing all core elements of the framework as factors. Questions A3.1-A3.14 directly inquire about the respondents' awareness about different types of civic activities, and questions A4.1-43.14 produce similar responses for civic engagement. Question A6 contains a set of reasons, which can prevent a person from direct engagement in civic activism (a set of demotivators), while question A7 is a list of potential motivators (see Appendix 2 for more details). The CLT is also included in the survey as a separate module. The CLT score is the number of correct answers to the 13 questions.

The problem is defined in a regression context. Our hypothesis is that ***a higher level of awareness, engagement and motivation among respondents results in better CLT scores***, as such respondents have a greater interest and therefore a greater need for civic knowledge. It is important to stress here that although we will use linear regression as a main statistical tool, we do not assume a strong linear dependency among these factors. Therefore, the main goal of regression analysis in this context is not to build a model explaining most variability[5], but to find statistically significant factors and understand which of the factors of interest is most significant.

In this memo we started with building multivariate linear regressions for each factor (motivation was split into demotivating and motivating reasons) in order to pick the best predictors for the CLT score and generate the final model for all the factors. Awareness, engagement, and motivation were taken into account as three factors of interest, and to control for demographics, respective variables (age, sex, region, settlement size and type, education, employment type, and income) were tested as separate factors. The process was repeated for both samples, so in total ten models were produced,

[5] In fact, R^2 (the coefficient of determination) for the models will never be much higher than 0.2.

leading to the two final models. Python was used to carry out all the data manipulation, and statsmodels API in particular - to produce the linear models.

Based on the modelling results, we may theorize and make informed assumptions about what kind of knowledge is reflected in CLT scores for CEP and PAS datasets. If engagement is a dominant factor, knowledge is considered to be more active - it is derived from the need to participate in civic activities. On the contrary, the prevalence of the awareness factor in CLT scores would indicate instead the respondents' general familiarity with social and political processes in the country, which does not necessarily lead to civic actions (passive knowledge).

III. Descriptive Analysis of CLT and Factor Variables

As expected, ***participants of the USAID/ENGAGE activities demonstrate a higher level of civic literacy than the general population***: the mean CLT score for participants is for 2.97 points higher than the results of the general population (9.94 vs 6.97 out of maximum score 13). Only 16% of the general population had a score 10 or higher against almost ⅔ (64.1%) of respondents from the participants' sample.

Questions about the necessity of getting authorization from authorities to hold a peaceful assembly (C12) and listing the local bodies of executive power (C8) were the most challenging for both groups. Besides that, the general population demonstrated weak knowledge (<50% correct answers) of the Constitutional definition of the Ukrainian people (C4), income tax rate (C9), the legal reasons to prohibit a rally (C13), and citizens' fundamental rights and freedoms (C2).

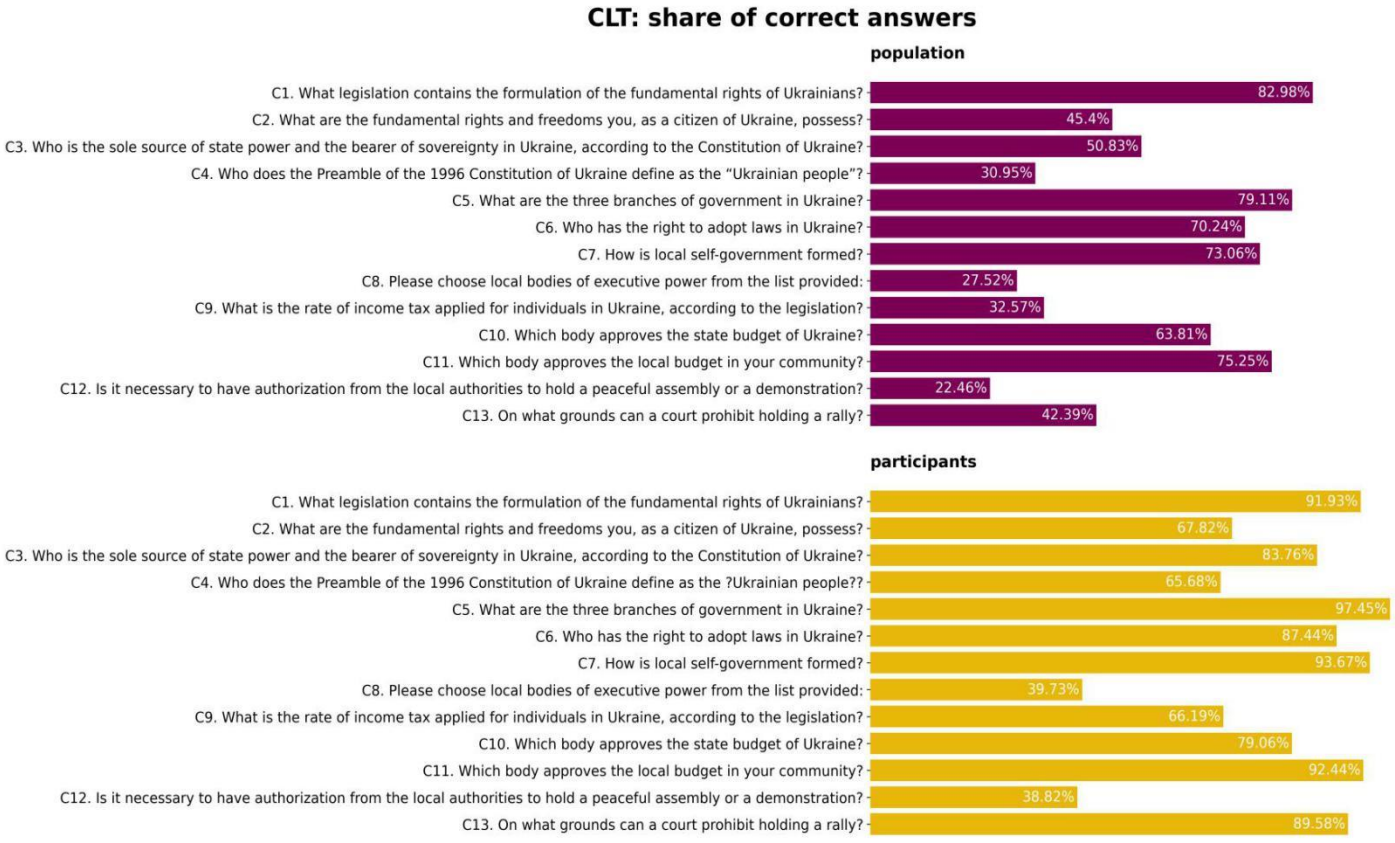


Figure 3: *Share of correct answers to CLT questions*

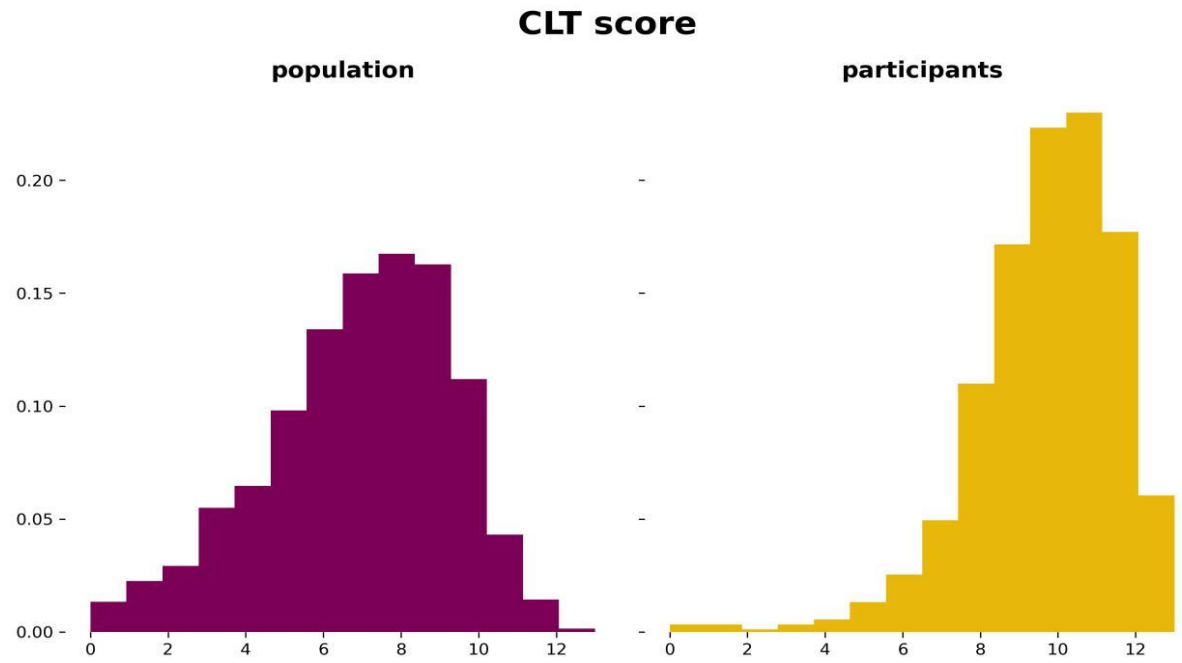


Figure 4: *Distributions of CLT scores*

Distribution of CLT scores for the general population is close to normal, but heavily left-skewed for the participants sample (skewness -1.18) - in the latter, the majority of the respondents had high scores. This means that the CLT test is fairly simple for the participants, so it might be not the best measure for the more specific aspects of their knowledge[6]. However, since this test was not designed for that purpose, this fact is not considered problematic in the context of this memo.

The awareness factor demonstrates the most similarities between the two samples. Participants still know more options for civic participation (10 options on average versus 8 for the general population), but the contrast is not so stark as with other explanatory factors (see Figure 5 below). Both groups are unaware of the extent to which they can be engaged in the process of commenting on drafts of national and local legislation, and the extent to which they can participate in a formal advisory body within the national and local government structures.

The main difference is that 13.7% of the general population do not know of any options of civic participation. Quite surprisingly, more respondents in the population sample are aware of all 14 options listed in the questionnaire, as opposed to the participants' sample. While this difference (3.3%) is not statistically significant, it might hint that the CEP's respondents approached answering this question somehow less scrupulously than the PAS's. This assumption is supported by the fact that a much smaller share of the general population sample shows high scores close to the maximum (>=10), while awareness grows more uniformly for the participants' sample.

[6] For this reason, in 2021 USAID/ENGAGE conducts additional analysis (focus groups, applied knowledge text etc) to gauge participants' knowledge.

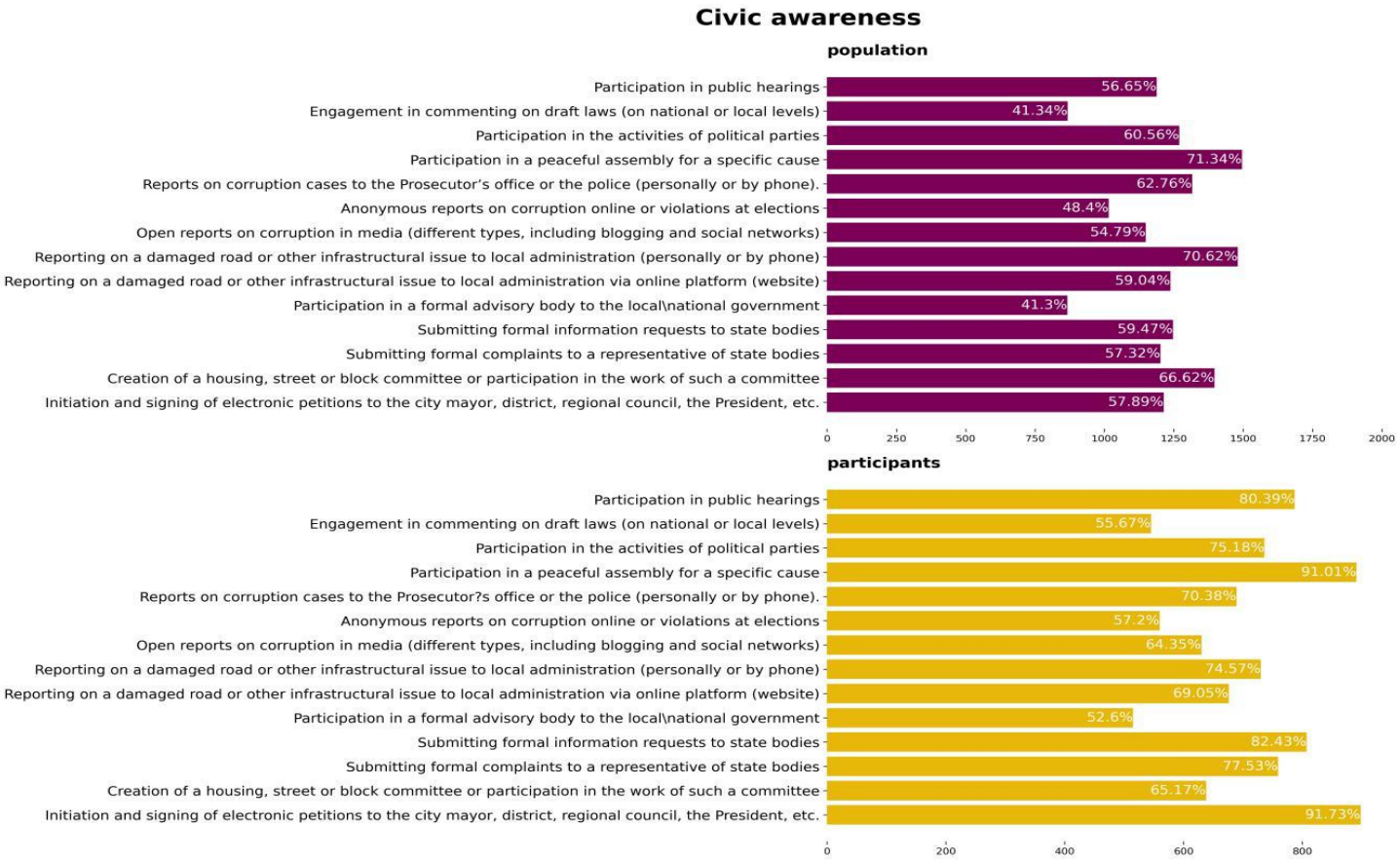


Figure 5: *Awareness of the available options of civic participation*

For the general population, awareness does not translate into civic engagement. Almost 80% of the general population are not involved in any civic activity, and in 5 out of 14 listed engagement options, the level of participation is statistically negligible (<2.2%). Only in 4 cases engagement exceeds 5%: participation in the house (block/street) committee, in public hearings, and in public assemblies, as well as in reports about infrastructural issues. The general population tends to ignore the types of engagement that require more professionalized skills and education. The homogeneity of this factor's variables for the CEP's sample makes it a worse predictor - it is not expected to have a lot of explanatory power in the final model.

Respondents in the participants sample participate in almost all the listed types of engagement with the notable exception of any types of anti-corruption activities: anonymous reports on corruption and electoral violations, reports on the corruption cases to the law enforcement, and public anti-corruption reports in the media. Although this issue is clearly out of the scope of this memo and its causes must be established separately, we might assume that this situation reflects the lack of trust to the government authority in general and anti-corruption bodies in particular, as well as the professionalization of anti-corruption civic action, which often requires certain level of legal proficiency.

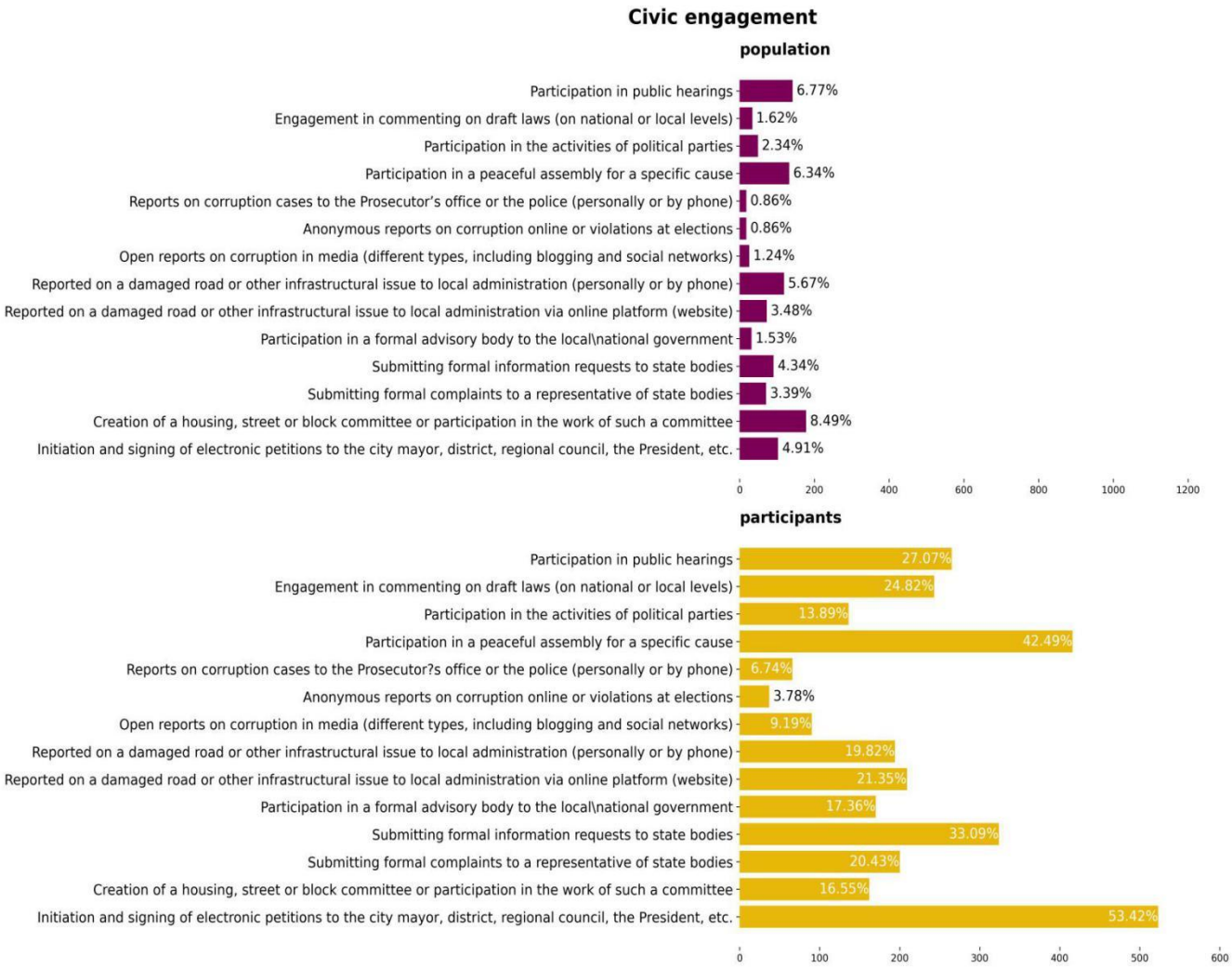


Figure 6: *Direct engagement in civic action*

Following the logic of the survey structure, the motivation factor is divided into the list of reasons preventing the person from civic engagement (A6) and stimulating engagement (A7). Different patterns of demotivation emerge for both the general population and the participants *(Figure 9)*. In general, Ukrainians do not participate in civic activities, because they lack time and motivation to do so, and do not believe that their potential civic actions can cause any feasible changes. These two factors clearly stand out among all the other reasons with the respective shares of 45.88% and 32.95%.

While participants point out not having enough time/motivation in 39.33% of cases, their reasons for non-engagement are more diverse. One-third of the participants (33.3%) was less involved in civic action due to the ongoing COVID-19 epidemic, and one-third could not find a good initiative to join (33.81%). Around one-fifth named reasons such as a lack of awareness, not being invited to participate, a lack of trust to the existing organizations, and not believing that they can make any influence on the current situation. It is important to point out that participants much less often follow the paternalistic view on the role of the state: only 6.74% believe that the state should take care of the problems, in contrast to the 17.45% of the general population.

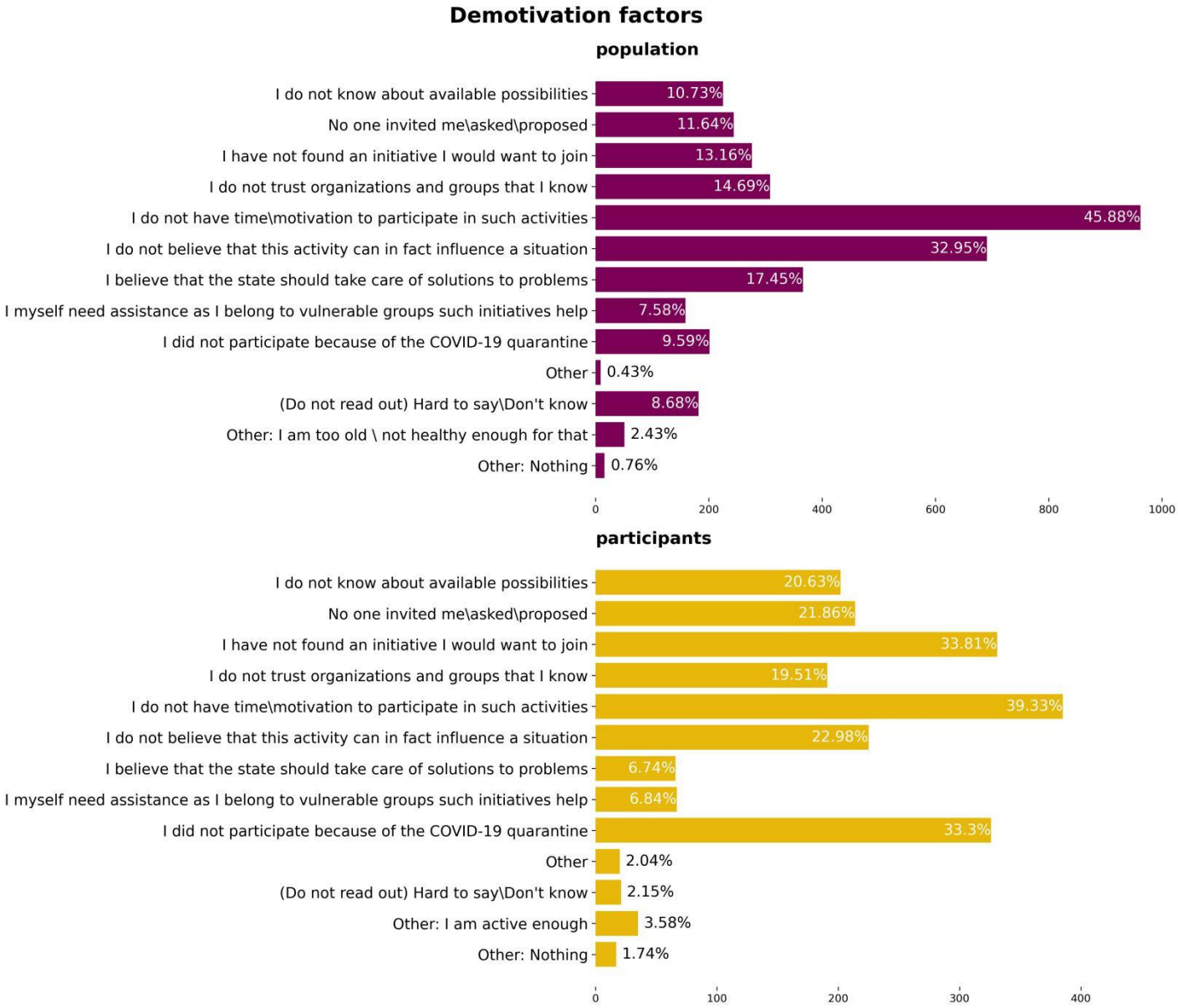


Figure 7: *Main reasons preventing respondents from participating in civic activities*

According to the CEP sample data, Ukrainians could be motivated for civic action only if it had direct relation to the immediate interests (35.38%) and no repercussions followed their actions (29.8%). More than a quarter (26.7%) were not able to name any reason stimulating their engagement at all. According to the participants' sample, their motives are more diverse, but three of them stand out: the goals of the initiative correspond to their personal ambitions (50.36%), the respondent trusts the leader of the initiative (55.78%), and that participation has no negative consequences for the respondent in the participants' sample (51.58%). ***Empathy with other people and making new connections are twice more likely to motivate the participants of the USAID/ENGAGE events compared to the general population.***

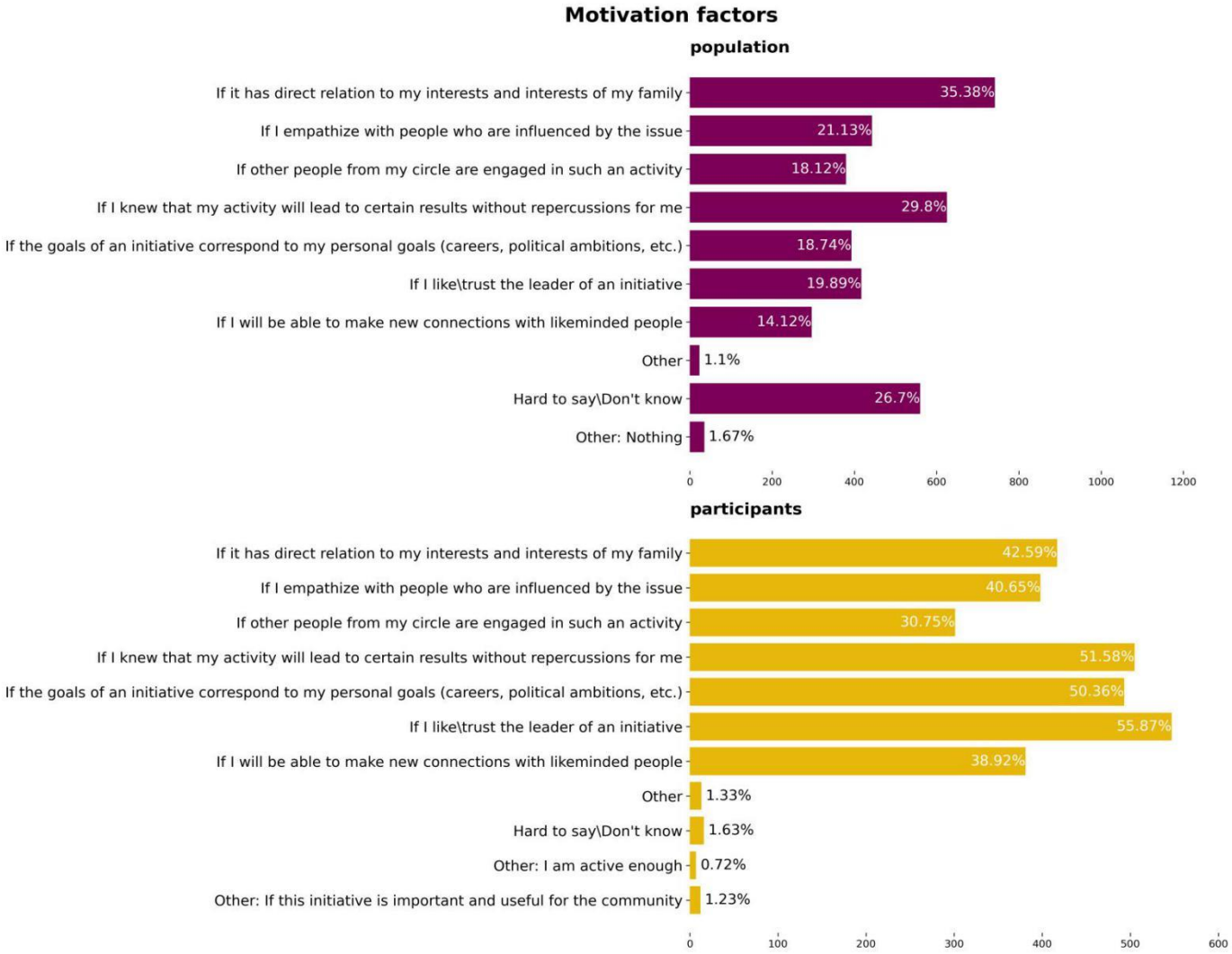


Figure 8: *Main reasons motivating respondents to participate in civic activities*

IV. Modelling CLT Score Dependency on the Core Factors

As mentioned above in the methodology part of this memo, the multivariate linear models were produced for each factor (with the exception of the motivation factor - separate models were built for demotivation and motivation variables) to understand the best predictors for the CLT score, which were later fit to the final model.

We defined three key factors and transformed the coded answers into the dummy variables[7]. For the *awareness factor*, answers 'yes' (1) to Q3.1-Q3.14 (Are you aware of the specific type of civic engagement activity) are taken as 1 and 'no' (2) as 0. For the *engagement factor* (Q4.1-Q4.14 - Have you ever been involved in the specific type of civic engagement activity) we took the answer 'I have done this in the past 12 months' (1) as 1 and the four other available options as 0. For *motivation factor* (Q6 - What prevents you from more active engagement in civil initiatives?, and Q7 - Is there anything that would motivate you to engage in any types of civil activities or work closely with civil initiatives which deal with them?) every variable has been coded as dummy in the initial dataset, so no transformations were needed. The *demographic factor* variables were treated as ordinal where possible (settlement size, respondent's age, education, and income). Otherwise, the categorical

[7] A dummy variable is a numerical variable with possible values of 1 and 0, and it is used in regression analysis to represent categorical subgroups of the sample. https://conjointly.com/kb/dummy-variables/

variables were transformed into dummies for every category (region, settlement type, sex, and employment).

Later in this section we describe the final models for population and participants samples, considering their implications. The models for each factor are not discussed separately, although the full list of summaries for all models is added for reference in Appendix 4.

Model for population sample

The CLT score model for the Ukrainian population sample contains eleven predictors: three variables for awareness factor, four for motivation factor, and four for demographics (see Figure 9 for a summary). Note that the engagement factor proved to be not significant, and none of the respective variables were included into the final model. This model explains the total variance within the dependent variable (CLT score).

According to our model estimate, the demographic factor is by far the most important. A higher level of education may add up to 1.7 points to the final score (0.3414 per each education level), while on average, having a higher income adds 0.974 points to the CLT score. Living in bigger cities, on the contrary, penalizes the final score for up to -0.5 points. Regional dimension also has a significant impact: respondents in Western regions tend to get better scores (+0.59 controlled for other variables) but living in Eastern regions means getting 0.9 fewer CLT points.

In the extreme scenarios, structural factors might lead either to the increase of CLT score for 3.27 points or decrease for -1.39 points. In other words, ***the total impact of the demographic factor is 4.67 points***. ***The dominance of demographic variables in the model means that for the general population civic literacy primarily depends on the structural conditions, which do not always depend on the respondent's individual choices.***

Awareness about three types of activities influence CLT score: 1) submitting information requests to the state bodies (A3.11); 2) creation of or participation in a housing, street or block committee (A3.13); 3) initiation and signing of electronic petitions (A3.14). ***The awareness factor adds up to the maximum impact of 1.74 points*** to the CLT score on average.

Demotivation variables are responsible for most of the motivation factor's impact. ***The strongest negative predictor of the CLT score is when respondents were not able to state the reasons regarding what exactly prevents them from civic engagement (A6.11)***. We might assume that the absence of an answer in this case indicates a lack of interest in civic activities in general, thus it is logical to have less knowledge in the non-relevant domain. ***Absence of knowledge about existing possibilities and distrust into existing civic organizations are two other significant demotivators.*** The only motivation variable included in the final model is the absence of repercussions for a respondent in the case of engagement into the civic activity (A7.11). In total, ***the motivation factor may be responsible for a fluctuation of up to 2.11 points*** in the final score.

OLS Regression Results

Dep. Variable:	y	R-squared:	0.211
Model:	OLS	Adj. R-squared:	0.207
Method:	Least Squares	F-statistic:	46.46
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	2.31e-98
Time:	21:43:34	Log-Likelihood:	-4707.0
No. Observations:	2097	AIC:	9440.
Df Residuals:	2084	BIC:	9513.
Df Model:	12		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	4.5510	0.206	22.043	0.000	4.146	4.956
A3.11	0.5555	0.128	4.327	0.000	0.304	0.807
A3.13	0.6681	0.134	4.997	0.000	0.406	0.930
A3.14	0.5186	0.131	3.960	0.000	0.262	0.775
A6.1	-0.3999	0.164	-2.437	0.015	-0.722	-0.078
A6.4	-0.4189	0.144	-2.916	0.004	-0.701	-0.137
A6.11	-0.7196	0.182	-3.959	0.000	-1.076	-0.363
A7.4	0.5748	0.113	5.106	0.000	0.354	0.796
Western	0.5936	0.127	4.674	0.000	0.345	0.843
Eastern	-0.8964	0.152	-5.908	0.000	-1.194	-0.599
setl_size	-0.1649	0.042	-3.943	0.000	-0.247	-0.083
edu	0.3414	0.047	7.341	0.000	0.250	0.433
inc	0.1948	0.056	3.508	0.000	0.086	0.304

Omnibus:	42.745	Durbin-Watson:	1.337
Prob(Omnibus):	0.000	Jarque-Bera (JB):	45.064
Skew:	-0.357	Prob(JB):	1.64e-10
Kurtosis:	2.921	Cond. No.	23.1

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure 9: *Population: summary of final model*

Model for the participants' sample

The model for the sample representing the participants of the USAID/ENGAGE events also includes eleven predictors: three variables for awareness factor, two for engagement, three for motivation, and three for demographics. These factors are balanced differently, although the demographic one still has the strongest impact. 26.3% of total variance in the CLT-score variable within the participants' sample is explained by the model.

The ***demographic factor may increase the CLT score up to maximum 4.94 points. Out of three demographic variables, the level of education has the most substantial impact on the CLT score.*** In fact, its impact is almost twice stronger than in the population model, adding up to three points to the CLT score. Dominance of the education variable in both models suggests that CLT score results are to a certain extent a part of general knowledge rather than specific endeavors stimulated by interest in the topic or by practical necessity.

In the participants' model, income level adds one more point. Besides that, we see that gender impact becomes significant (on average, males score 0.87 more), while regional influence is absent. The latter fact might have several explanations, such as knowledge and experience exchange between the participants and activist groups, leading to a closure of the regional gap in civic literacy. It is also possible that regional differences in CLT scores in the population sample might arise due to the influence of unobserved factors, such as differences of attitude toward civic activism[8], etc. Unfortunately, we are not able to answer this question within the scope of this memo.

[8] As activists are 'selected' according to the specific attitude to activism, different attitudes would not be present in the participants' sample.

OLS Regression Results

Dep. Variable:	y	R-squared:	0.263
Model:	OLS	Adj. R-squared:	0.255
Method:	Least Squares	F-statistic:	31.36
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	5.24e-57
Time:	21:51:41	Log-Likelihood:	-1917.3
No. Observations:	979	AIC:	3859.
Df Residuals:	967	BIC:	3917.
Df Model:	11		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	4.1105	0.419	9.815	0.000	3.289	4.932
A3.4	0.5112	0.214	2.385	0.017	0.091	0.932
A3.11	0.6720	0.163	4.128	0.000	0.353	0.991
A3.14	0.7790	0.226	3.445	0.001	0.335	1.223
A4.4	0.3902	0.120	3.239	0.001	0.154	0.627
A4.14	0.4241	0.120	3.534	0.000	0.189	0.660
A6.5	0.2421	0.114	2.120	0.034	0.018	0.466
A6.7	-0.7488	0.221	-3.385	0.001	-1.183	-0.315
A7.9	-1.4520	0.439	-3.310	0.001	-2.313	-0.591
male	0.8663	0.126	6.902	0.000	0.620	1.113
edu	0.6013	0.075	8.041	0.000	0.455	0.748
inc	0.2133	0.055	3.884	0.000	0.106	0.321

Omnibus:	128.148	Durbin-Watson:	1.915
Prob(Omnibus):	0.000	Jarque-Bera (JB):	211.971
Skew:	-0.858	Prob(JB):	9.35e-47
Kurtosis:	4.500	Cond. No.	48.2

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure 10: *Participants: summary of the final model*

Awareness of participation options, such as 1) participation in a peaceful assembly (A3.4), 2) submitting formal information requests to state bodies (A3.11), and 3) initiation and signing of electronic petitions (A3.14) more or less equally contribute to the ***total impact on the awareness factor by 1.96 points.*** Note that variables A3.11 and A3.14 were also significant for the Ukrainian population in general.

Being actually engaged in peaceful protests (A4.4) and working with electronic petitions (A4.14) leads to a further increase in average civic literacy. However, ***while the engagement factor appears in the participants' model, its impact is the lowest - only 0,8143.***

It is very important to understand that as awareness and engagement factors are inherently correlated, their impact overlaps, so it is more difficult to understand the actual contribution of each factor. For example, in the single-factor model for engagement (see Figure A4.2.2 in Appendix 4), influence of variable A4.11 (submitting information requests) was significant but was neutralized by the variable A3.11 in the final model.

The motivation factor for the participants' sample is structured in an unusual way. None of the motivation variables had a significant factor on the CLT score. However, answering *Hard to say/Don't know* (A7.9) to the motivation question A7 strongly penalized the respondent's score (-1.45 on average, which is the strongest impact for any binary (dummy) variable in both final models). Therefore, we are able to state that ***absence of direct motivation leads to lower interest in civic literacy in general for the participants of USAID/ENGAGE events***.

Conversely, one of demotivators (A6.5 - I do not have time/motivation to participate in civic activities) adds 0.24 points to civic literacy. While there is a 3.4% probability that this coefficient is actually equal to zero (meaning that it is not significant), there is a plausible interpretation to it. If we look closer to the formulation of the question A6, it inquires about the reasons preventing the respondents from *more active* engagement in civil initiatives, rather than *any* engagement in civil initiatives at all. This potential dubiousness of interpretation becomes more evident in case when this

question is addressed to the participants - they might be actively engaged in civic activities, but not have enough time to participate even more than they already do. If this is the case, the positive coefficient actually cannot be interpreted as a demotivator, but rather as a sign of potential burnout.

The last significant demotivator is the belief that the state should take care of solutions to problems (A6.7) - this paternalist logic penalizes the score for -0.75 points. In total, the impact of the motivation factor is up to a maximum of 2.44 points, mostly due to the variable A7.9.

Conclusions from the model

1. For both models, the demographic factor is the most important, namely the level of education. For general population better education may add up to 1.7 points to the final score, while for the participant sample its effect is even stronger (up to 3 points). Dominance of the education variable in both models suggests that CLT score results are to a certain extent a part of general knowledge rather than specific endeavors stimulated by interest in the topic or by practical necessity.
2. Awareness on average has the same impact on engagement for population as for the participants. In particular, awareness of the participation options A3.11 (information requests to the state bodies) and A3.14 (initiation and signing of electronic petitions) leads to statistically significant increase of CLT score for both samples. A3.13 (creation of or participation in a housing, street or block committee) is significant only for general population, while A3.4 (participation in a peaceful assembly) leads to slightly higher scores for the participants.
3. Engagement factor is not significant for the general population, and has only a minor positive impact on the scores of participants. This means that CLT score does not necessarily reflect the actual experience gained from the actual engagement in the civic activities.
4. The demotivation variables in general have stronger impact on the CLT scores than the motivation ones. The strongest negative predictor of the CLT score for the population is when respondents were not able to state the reasons regarding what exactly prevents them from civic engagement (A6.11). For the participants sample, answering *Hard to say/Don't know* (A7.9) to the motivation question A7 strongly penalized the respondent's score (-1.45), which we tend to interpret rather as a sign of burnout (thus, it is also rather a demotivation variable, though formally a part of motivation question).

Factor	Maximum impact[9]	
	population	participants
Demographic	4.67	4.94
Awareness	1.74	1.96
Engagement	0	0.81
Motivation	2.11	2.44

Summary of the Final Models

[9] Maximum impact is calculated as a sum of absolute variable coefficients, included to the factor (coefficients of ordinal variable are multiplied per number of levels before being summed).

Appendix 1: Civic literacy test questions

C1. What legislation contains the formulation of the fundamental rights of Ukrainians?

C2. What are the fundamental rights and freedoms you, as a citizen of Ukraine, possess?

C3. Who is the sole source of state power and the bearer of sovereignty in Ukraine, according to the Constitution of Ukraine?

C4. Who does the Preamble of the 1996 Constitution of Ukraine define as the "Ukrainian people"?

C5. What are the three branches of government in Ukraine?

C6. Who has the right to adopt laws in Ukraine?

C7. How is local self-government formed?

C8. Please choose local bodies of executive power from the list provided:

C9. What is the rate of income tax applied for individuals in Ukraine, according to the legislation?

C10. Which body approves the state budget of Ukraine?

C11. Which body approves the local budget in your community?

C12. Is it necessary to have authorization from the local authorities to hold a peaceful assembly or a demonstration?

C13. On what grounds can a court prohibit holding a rally?

Appendix 2: Set of variables describing the main factors

2.1: Awareness (questions A3.1-A3.14)

Are you aware of:

A3.1 Participation in public hearings

A3.2 Engagement in commenting on draft laws (on national or local levels)

A3.3 Participation in the activities of political parties

A3.4 Participation in a peaceful assembly for a specific cause

A3.5 Reports on corruption cases to the Prosecutor's office or the police (personally or by phone).

A3.6 Anonymous reports on corruption online or violations at elections

A3.7 Open reports on corruption in media (different types, including blogging and social networks)

A3.8 Reporting on a damaged road or other infrastructural issues to local administration (personally or by phone)

A3.9 Reporting on a damaged road or other infrastructural issues to local administration via online platform (website)

A3.10 Participation in a formal advisory body to the local or national government

A3.11 Submitting formal information requests to state bodies

A3.12 Submitting formal complaints to a representative of state bodies

A3.13 Creation of a housing, street or block committee or participation in the work of such a committee

A3.14 Initiation and signing of electronic petitions to the city mayor, district, regional council, the President, etc.

Based on the questions A3.1-A3.14, **14 dummy variables** were created, with the answer "yes" for each question coded as 1 and 0 otherwise.

2.2: Engagement (questions A4.1-A4.14)

Have you ever been involved in:

A4.1 Participation in public hearings

A4.2 Engagement in commenting on draft laws (on national or local levels)

A4.3 Participation in the activities of political parties

A4.4 Participation in a peaceful assembly for a specific cause

A4.5 Reports on corruption cases to the Prosecutor's office or the police (personally or by phone)

A4.6 Anonymous reports on corruption online or violations at elections

A4.7 Open reports on corruption in media (different types, including blogging and social networks)

A4.8 Reported on a damaged road or other infrastructural issues to local administration (personally or by phone)

A4.9 Reported on a damaged road or other infrastructural issues to local administration via online platform (website)

A4.10 Participation in a formal advisory body to the local or national government

A4.11 Submitting formal information requests to state bodies

A4.12 Submitting formal complaints to a representative of state bodies

A4.13 Creation of a housing, street or block committee or participation in the work of such a committee

A4.14 Initiation and signing of electronic petitions to the city mayor, district, regional council, the President, etc.

Based on the questions A4.1-A4.14, **14 dummy variables** were created for direct civic participation, with the answer "I have done this in the past 12 months" coded as 1 and 0 otherwise.

2.3: Motivation (questions A6-A7)

A6. What prevents you from more active engagement in civil initiatives?

01 I do not know about available possibilities

02 No one invited me\asked\proposed
03 I have not found an initiative I would want to join
04 I do not trust organizations and groups that I know
05 I do not have time\motivation to participate in such activities
06 I do not believe that this activity can in fact influence a situation
07 I believe that the state should take care of solutions to problems
08 I myself need assistance as I belong to vulnerable groups such initiatives help
09 I did not participate because of the COVID-19 quarantine
10 Other
11 (Do not read out) Hard to say\Don't know
12 Other: I am too old \ not healthy enough for that
13 Other: Nothing

A7. Is there anything that would motivate you to engage in any of the above-mentioned types of civil activities or work closely with civil initiatives which deal with them?

01 If it has direct relation to my interests and interests of my family
02 If I empathize with people who are influenced by the issue
03 If other people from my circle are engaged in such an activity
04 If I knew that my activity will lead to certain results without repercussions for me
05 If the goals of an initiative correspond to my personal goals (careers, political ambitions, etc.)
06 If I like\trust the leader of an initiative
07 If I will be able to make new connections with likeminded people
08 Other
09 Hard to say\Don't know
10 (for population sample only) Other: Nothing
10 (for participants sample only) Other: I am active enough
11 (for participants sample only) Other: If this initiative is important and useful for the community

Each option of the questions A6-A7 was treated as a separate dummy variable, leading to 23 variables in total (24 for the participants' sample).

Appendix 3: Distribution of demographic variables general population (CEP) and participants sample (PAS)

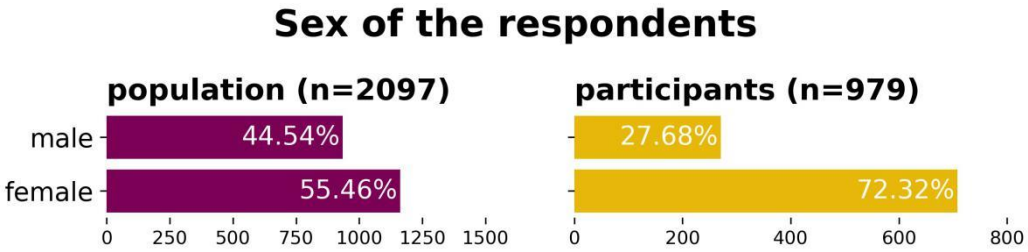


Figure A3.1: *Distribution of samples by sex*

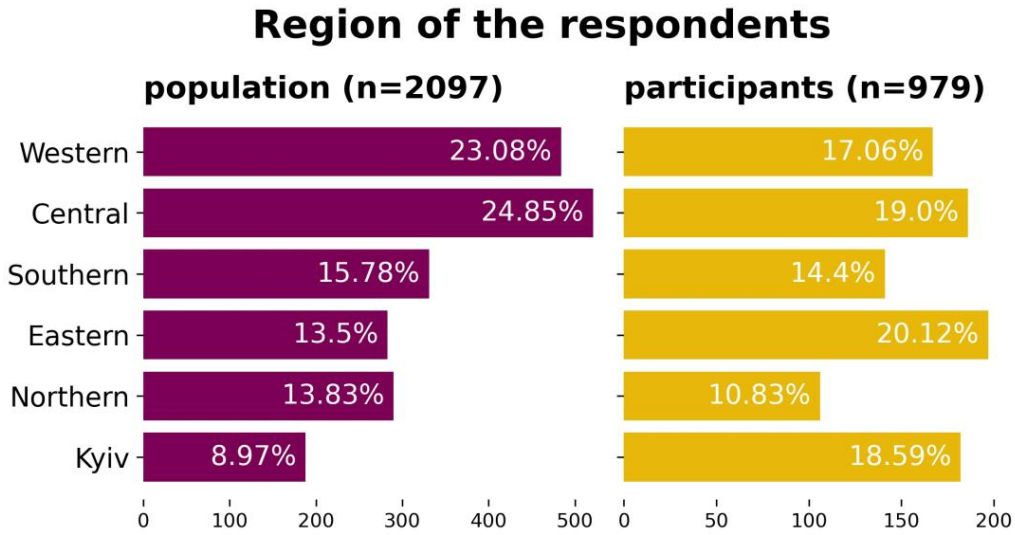


Figure A3.2: *Distribution of samples by region*

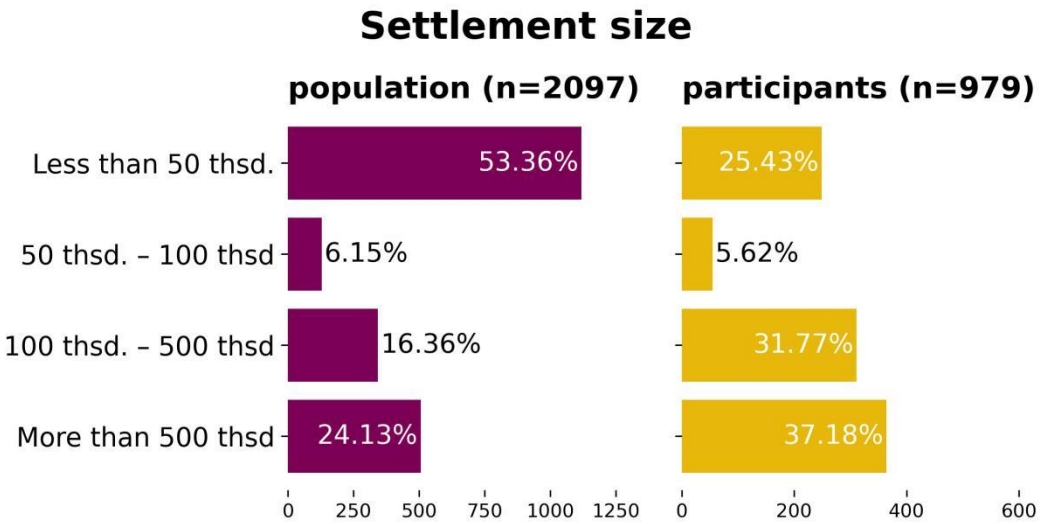


Figure A3.3: *Distribution of samples by settlement size*

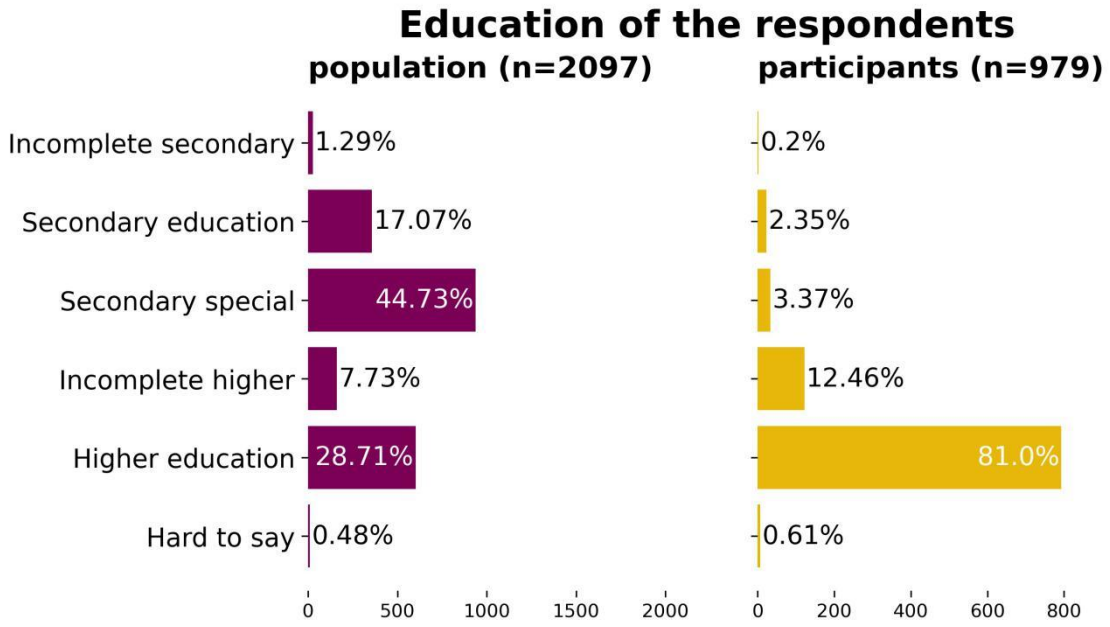


Figure A3.4: *Distribution of samples by the level of education*

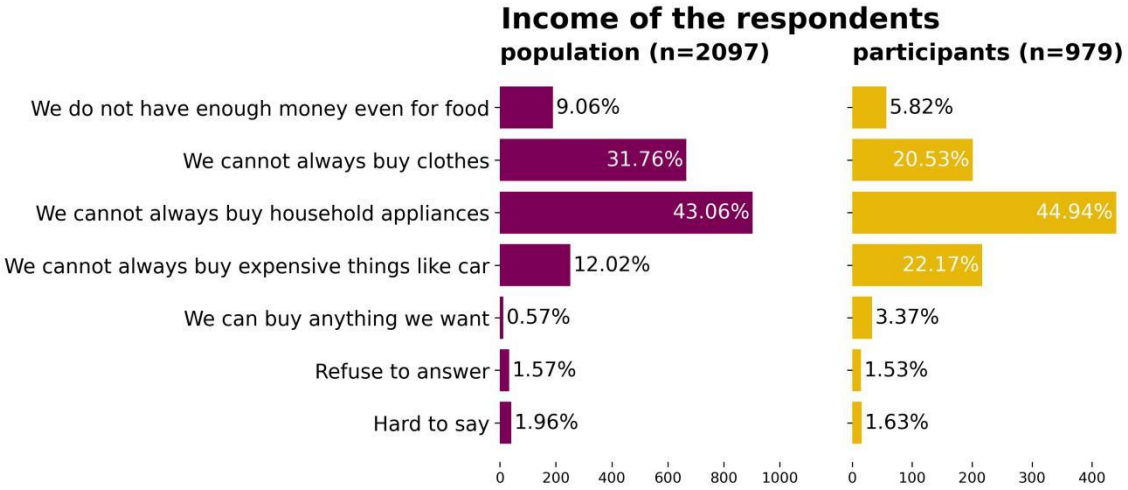


Figure A3.5: *Distribution of samples by the income level*

Appendix 4: Summaries of the models

OLS Regression Results

Dep. Variable:	y	R-squared:	0.118
Model:	OLS	Adj. R-squared:	0.105
Method:	Least Squares	F-statistic:	9.177
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	3.42e-19
Time:	20:38:21	Log-Likelihood:	-2005.4
No. Observations:	979	AIC:	4041.
Df Residuals:	964	BIC:	4114.
Df Model:	14		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	7.4477	0.256	29.087	0.000	6.945	7.950
A3.1	0.1897	0.192	0.986	0.324	-0.188	0.567
A3.2	0.1193	0.139	0.856	0.392	-0.154	0.393
A3.3	-0.0383	0.172	-0.223	0.824	-0.376	0.299
A3.4	0.7381	0.240	3.075	0.002	0.267	1.209
A3.5	-0.0339	0.183	-0.185	0.853	-0.392	0.325
A3.6	0.1799	0.149	1.204	0.229	-0.113	0.473
A3.7	-0.0243	0.162	-0.150	0.881	-0.342	0.293
A3.8	0.1158	0.182	0.636	0.525	-0.241	0.473
A3.9	0.1871	0.164	1.138	0.256	-0.136	0.510
A3.10	0.2105	0.143	1.474	0.141	-0.070	0.491
A3.11	0.5113	0.198	2.582	0.010	0.123	0.900
A3.12	0.0464	0.188	0.247	0.805	-0.323	0.416
A3.13	-0.1119	0.142	-0.786	0.432	-0.391	0.167
A3.14	0.9288	0.254	3.663	0.000	0.431	1.426

Omnibus:	167.907	Durbin-Watson:	1.922
Prob(Omnibus):	0.000	Jarque-Bera (JB):	328.066
Skew:	-1.005	Prob(JB):	5.77e-72
Kurtosis:	5.000	Cond. No.	16.4

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.1.1 *Population: summary of awareness model*

OLS Regression Results

Dep. Variable:	y	R-squared:	0.137
Model:	OLS	Adj. R-squared:	0.131
Method:	Least Squares	F-statistic:	23.54
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	4.52e-57
Time:	17:57:55	Log-Likelihood:	-4801.5
No. Observations:	2097	AIC:	9633.
Df Residuals:	2082	BIC:	9718.
Df Model:	14		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	5.4165	0.109	49.577	0.000	5.202	5.631
A3.1	0.2286	0.146	1.567	0.117	-0.057	0.515
A3.2	-0.2497	0.156	-1.599	0.110	-0.556	0.057
A3.3	-0.1639	0.153	-1.075	0.283	-0.463	0.135
A3.4	0.1511	0.167	0.906	0.365	-0.176	0.478
A3.5	0.3659	0.160	2.281	0.023	0.051	0.681
A3.6	0.3510	0.156	2.252	0.024	0.045	0.657
A3.7	-0.2387	0.157	-1.516	0.130	-0.548	0.070
A3.8	0.1725	0.170	1.015	0.310	-0.161	0.506
A3.9	0.4277	0.149	2.868	0.004	0.135	0.720
A3.10	-0.0596	0.163	-0.365	0.715	-0.380	0.261
A3.11	0.4975	0.157	3.164	0.002	0.189	0.806
A3.12	0.0311	0.158	0.197	0.844	-0.279	0.341
A3.13	0.3900	0.155	2.523	0.012	0.087	0.693
A3.14	0.5569	0.156	3.563	0.000	0.250	0.863

Omnibus:	52.116	Durbin-Watson:	1.272
Prob(Omnibus):	0.000	Jarque-Bera (JB):	54.459
Skew:	-0.381	Prob(JB):	1.49e-12
Kurtosis:	2.795	Cond. No.	9.94

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.1.2 *Participants: summary of awareness model*

OLS Regression Results

Dep. Variable:	y	R-squared:	0.022
Model:	OLS	Adj. R-squared:	0.015
Method:	Least Squares	F-statistic:	3.334
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	2.51e-05
Time:	20:53:55	Log-Likelihood:	-4932.3
No. Observations:	2097	AIC:	9895.
Df Residuals:	2082	BIC:	9979.
Df Model:	14		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	6.8575	0.061	113.290	0.000	6.739	6.976
A4.1	-0.4154	0.257	-1.618	0.106	-0.919	0.088
A4.2	0.2995	0.512	0.585	0.559	-0.704	1.303
A4.3	0.6232	0.401	1.554	0.120	-0.163	1.410
A4.4	0.7139	0.266	2.680	0.007	0.192	1.236
A4.5	0.6167	0.656	0.941	0.347	-0.669	1.902
A4.6	-0.5807	0.652	-0.891	0.373	-1.858	0.697
A4.7	-1.7774	0.613	-2.898	0.004	-2.980	-0.575
A4.8	0.4088	0.275	1.489	0.137	-0.130	0.947
A4.9	0.2434	0.366	0.665	0.506	-0.475	0.961
A4.10	-0.6157	0.516	-1.193	0.233	-1.627	0.396
A4.11	0.7829	0.313	2.501	0.012	0.169	1.397
A4.12	0.1523	0.372	0.410	0.682	-0.577	0.882
A4.13	0.1389	0.223	0.622	0.534	-0.299	0.577
A4.14	0.4104	0.285	1.442	0.149	-0.148	0.969

Omnibus:	81.888	Durbin-Watson:	1.216
Prob(Omnibus):	0.000	Jarque-Bera (JB):	89.879
Skew:	-0.498	Prob(JB):	3.04e-20
Kurtosis:	2.812	Cond. No.	13.4

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.2.1 *Population: summary of engagement model*

OLS Regression Results

Dep. Variable:	y	R-squared:	0.089
Model:	OLS	Adj. R-squared:	0.076
Method:	Least Squares	F-statistic:	6.746
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	2.85e-13
Time:	20:55:06	Log-Likelihood:	-2020.8
No. Observations:	979	AIC:	4072.
Df Residuals:	964	BIC:	4145.
Df Model:	14		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	9.2106	0.100	91.735	0.000	9.014	9.408
A4.1	-0.2205	0.166	-1.329	0.184	-0.546	0.105
A4.2	0.3945	0.171	2.311	0.021	0.059	0.729
A4.3	0.2034	0.194	1.049	0.295	-0.177	0.584
A4.4	0.4373	0.142	3.071	0.002	0.158	0.717
A4.5	-0.2232	0.319	-0.700	0.484	-0.849	0.403
A4.6	-0.0768	0.371	-0.207	0.836	-0.805	0.651
A4.7	0.0861	0.253	0.340	0.734	-0.410	0.582
A4.8	0.1970	0.210	0.938	0.349	-0.215	0.609
A4.9	0.0502	0.202	0.248	0.804	-0.346	0.447
A4.10	-0.0869	0.196	-0.443	0.658	-0.472	0.298
A4.11	0.5315	0.164	3.246	0.001	0.210	0.853
A4.12	-0.1139	0.197	-0.579	0.563	-0.500	0.272
A4.13	0.0076	0.179	0.043	0.966	-0.343	0.358
A4.14	0.5508	0.134	4.106	0.000	0.288	0.814

Omnibus:	207.199	Durbin-Watson:	1.946
Prob(Omnibus):	0.000	Jarque-Bera (JB):	502.293
Skew:	-1.124	Prob(JB):	8.48e-110
Kurtosis:	5.695	Cond. No.	10.1

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.2.2 *Participants: summary of engagement model*

```
                            OLS Regression Results
==============================================================================
Dep. Variable:                      y   R-squared:                       0.051
Model:                            OLS   Adj. R-squared:                  0.045
Method:                 Least Squares   F-statistic:                     8.660
Date:                Thu, 18 Feb 2021   Prob (F-statistic):           1.93e-17
Time:                        20:57:30   Log-Likelihood:                -4900.4
No. Observations:                2097   AIC:                             9829.
Df Residuals:                    2083   BIC:                             9908.
Df Model:                          13
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
const          7.1312      0.123     58.007      0.000       6.890       7.372
A6.1          -0.5141      0.185     -2.778      0.006      -0.877      -0.151
A6.2           0.0386      0.178      0.217      0.828      -0.310       0.387
A6.3           0.0363      0.166      0.218      0.827      -0.290       0.362
A6.4          -0.5388      0.159     -3.389      0.001      -0.851      -0.227
A6.5           0.2807      0.122      2.308      0.021       0.042       0.519
A6.6           0.2495      0.123      2.036      0.042       0.009       0.490
A6.7          -0.5225      0.148     -3.524      0.000      -0.813      -0.232
A6.8          -0.8692      0.213     -4.081      0.000      -1.287      -0.451
A6.9           0.3106      0.190      1.634      0.102      -0.062       0.683
A6.10         -0.5840      0.846     -0.690      0.490      -2.243       1.075
A6.11         -1.0982      0.223     -4.921      0.000      -1.536      -0.661
A6.12         -1.1782      0.368     -3.201      0.001      -1.900      -0.456
A6.13          0.3063      0.640      0.479      0.632      -0.949       1.561
==============================================================================
Omnibus:                       74.299   Durbin-Watson:                   1.252
Prob(Omnibus):                  0.000   Jarque-Bera (JB):               81.712
Skew:                          -0.481   Prob(JB):                     1.80e-18
Kurtosis:                       2.906   Cond. No.                         18.9
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

Figure A4.3.1 *Population: summary of demotivation model*

```
                            OLS Regression Results
==============================================================================
Dep. Variable:                      y   R-squared:                       0.054
Model:                            OLS   Adj. R-squared:                  0.042
Method:                 Least Squares   F-statistic:                     4.258
Date:                Thu, 18 Feb 2021   Prob (F-statistic):           5.74e-07
Time:                        21:02:31   Log-Likelihood:                -2039.3
No. Observations:                 979   AIC:                             4107.
Df Residuals:                     965   BIC:                             4175.
Df Model:                          13
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
const          9.9681      0.139     71.914      0.000       9.696      10.240
A6.1          -0.5045      0.162     -3.110      0.002      -0.823      -0.186
A6.2          -0.2104      0.158     -1.329      0.184      -0.521       0.100
A6.3          -0.0309      0.139     -0.223      0.824      -0.303       0.241
A6.4           0.2419      0.166      1.461      0.144      -0.083       0.567
A6.5           0.3336      0.134      2.498      0.013       0.071       0.596
A6.6          -0.2141      0.157     -1.366      0.172      -0.522       0.093
A6.7          -0.9903      0.252     -3.926      0.000      -1.485      -0.495
A6.8           0.1445      0.251      0.575      0.566      -0.349       0.638
A6.9           0.0664      0.139      0.479      0.632      -0.206       0.338
A6.10          0.2685      0.448      0.600      0.549      -0.610       1.147
A6.11         -0.6824      0.449     -1.520      0.129      -1.563       0.199
A6.12          0.7839      0.373      2.100      0.036       0.051       1.516
A6.13          0.8522      0.517      1.649      0.099      -0.162       1.866
==============================================================================
Omnibus:                      189.624   Durbin-Watson:                   1.976
Prob(Omnibus):                  0.000   Jarque-Bera (JB):              408.121
Skew:                          -1.081   Prob(JB):                     2.39e-89
Kurtosis:                       5.310   Cond. No.                         11.1
==============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

Figure A4.3.2 *Participants: summary of demotivation model*

OLS Regression Results

Dep. Variable:	y	R-squared:	0.038
Model:	OLS	Adj. R-squared:	0.034
Method:	Least Squares	F-statistic:	8.286
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	2.65e-13
Time:	20:58:23	Log-Likelihood:	-4914.7
No. Observations:	2097	AIC:	9851.
Df Residuals:	2086	BIC:	9914.
Df Model:	10		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	6.7719	0.134	50.410	0.000	6.508	7.035
A7.1	0.2043	0.132	1.544	0.123	-0.055	0.464
A7.2	0.2730	0.146	1.864	0.062	-0.014	0.560
A7.3	-0.0587	0.153	-0.384	0.701	-0.359	0.241
A7.4	0.8558	0.134	6.391	0.000	0.593	1.118
A7.5	-0.2412	0.150	-1.609	0.108	-0.535	0.053
A7.6	-0.2052	0.150	-1.368	0.172	-0.499	0.089
A7.7	-0.0698	0.168	-0.414	0.679	-0.400	0.260
A7.8	-0.6771	0.541	-1.251	0.211	-1.739	0.384
A7.9	-0.2380	0.172	-1.387	0.166	-0.575	0.099
A7.10	-0.8291	0.448	-1.851	0.064	-1.707	0.049

Omnibus:	80.191	Durbin-Watson:	1.247
Prob(Omnibus):	0.000	Jarque-Bera (JB):	88.707
Skew:	-0.500	Prob(JB):	5.47e-20
Kurtosis:	2.877	Cond. No.	12.3

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.4.1 *Population: summary of motivation model*

OLS Regression Results

Dep. Variable:	y	R-squared:	0.036
Model:	OLS	Adj. R-squared:	0.025
Method:	Least Squares	F-statistic:	3.255
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	0.000220
Time:	21:08:45	Log-Likelihood:	-2048.8
No. Observations:	979	AIC:	4122.
Df Residuals:	967	BIC:	4180.
Df Model:	11		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	9.6212	0.148	64.840	0.000	9.330	9.912
A7.1	0.0971	0.137	0.707	0.479	-0.172	0.367
A7.2	0.1128	0.133	0.846	0.398	-0.149	0.375
A7.3	0.1310	0.141	0.929	0.353	-0.146	0.408
A7.4	0.0509	0.131	0.388	0.698	-0.206	0.308
A7.5	0.2433	0.133	1.825	0.068	-0.018	0.505
A7.6	-0.0978	0.131	-0.744	0.457	-0.356	0.160
A7.7	0.2519	0.134	1.875	0.061	-0.012	0.516
A7.8	1.1537	0.559	2.062	0.039	0.056	2.251
A7.9	-1.6837	0.515	-3.267	0.001	-2.695	-0.672
A7.10	1.2360	0.761	1.625	0.105	-0.257	2.729
A7.11	-0.1550	0.578	-0.268	0.788	-1.288	0.978

Omnibus:	186.626	Durbin-Watson:	1.944
Prob(Omnibus):	0.000	Jarque-Bera (JB):	395.740
Skew:	-1.071	Prob(JB):	1.16e-86
Kurtosis:	5.261	Cond. No.	19.8

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.4.2 *Participants: summary of motivation model*

OLS Regression Results

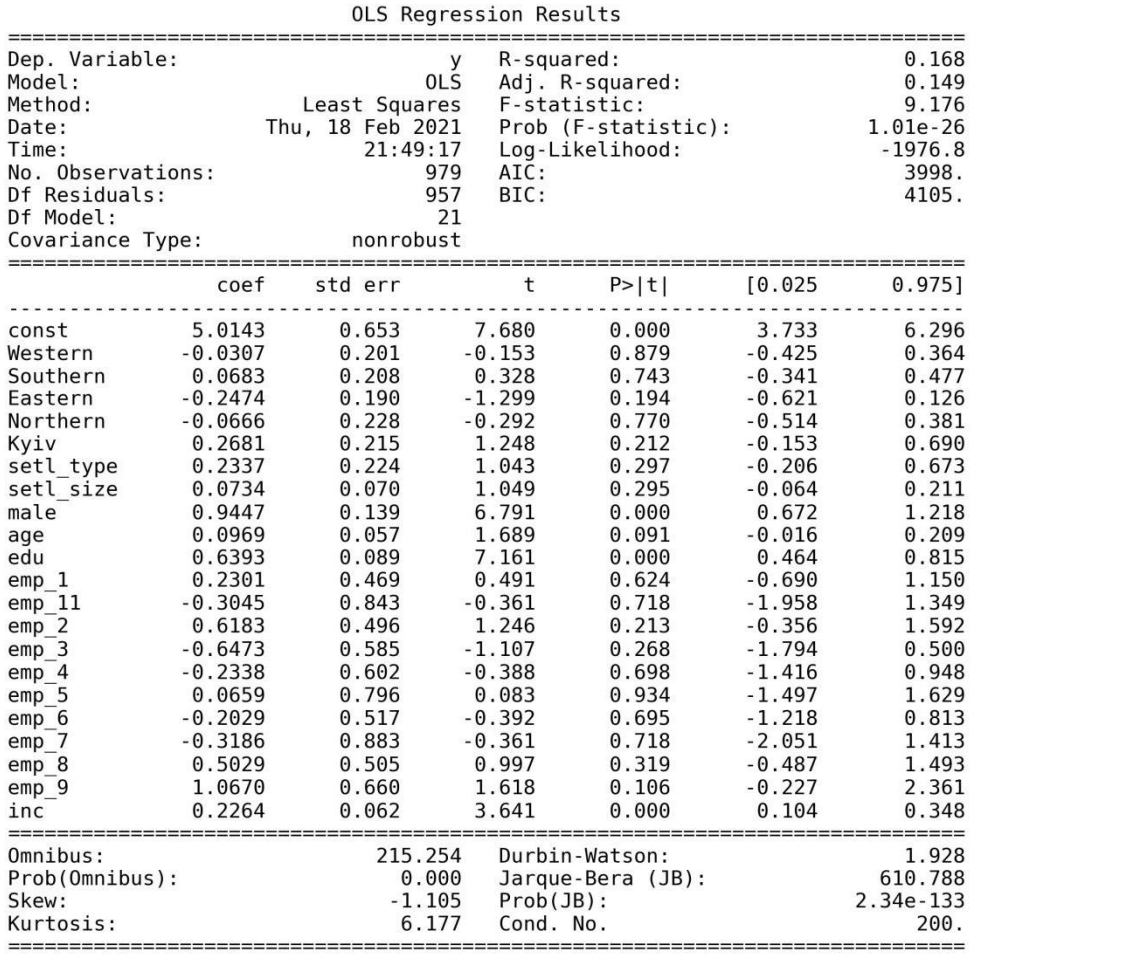
Dep. Variable:	y	R-squared:	0.124
Model:	OLS	Adj. R-squared:	0.115
Method:	Least Squares	F-statistic:	13.96
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	3.03e-46
Time:	21:44:15	Log-Likelihood:	-4817.0
No. Observations:	2097	AIC:	9678.
Df Residuals:	2075	BIC:	9802.
Df Model:	21		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	4.2808	0.842	5.082	0.000	2.629	5.933
Western	0.4050	0.160	2.535	0.011	0.092	0.718
Southern	-0.3519	0.173	-2.040	0.042	-0.690	-0.014
Eastern	-1.3164	0.181	-7.289	0.000	-1.671	-0.962
Northern	-0.3369	0.180	-1.870	0.062	-0.690	0.016
Kyiv	0.3390	0.232	1.463	0.144	-0.115	0.793
urban	-0.0005	0.146	-0.003	0.998	-0.287	0.286
setl_size	-0.2075	0.060	-3.473	0.001	-0.325	-0.090
male	0.1248	0.112	1.118	0.264	-0.094	0.344
age	0.0073	0.051	0.143	0.886	-0.092	0.107
edu	0.4492	0.050	8.992	0.000	0.351	0.547
emp_1	1.1941	0.817	1.462	0.144	-0.408	2.796
emp_11	1.8798	0.919	2.046	0.041	0.078	3.681
emp_2	0.6400	0.833	0.768	0.442	-0.994	2.274
emp_3	0.6016	0.837	0.719	0.472	-1.039	2.242
emp_4	1.0505	0.834	1.259	0.208	-0.586	2.687
emp_5	1.2922	0.927	1.395	0.163	-0.525	3.109
emp_6	0.7078	0.834	0.849	0.396	-0.927	2.343
emp_7	0.5659	0.913	0.620	0.536	-1.225	2.357
emp_8	0.9151	0.859	1.066	0.287	-0.769	2.599
emp_9	1.2379	1.053	1.175	0.240	-0.828	3.304
inc	0.2487	0.063	3.928	0.000	0.125	0.373

Omnibus:	76.662	Durbin-Watson:	1.254
Prob(Omnibus):	0.000	Jarque-Bera (JB):	84.656
Skew:	-0.492	Prob(JB):	4.14e-19
Kurtosis:	3.010	Cond. No.	323.

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.5.1 *Population: summary of demographics model*



OLS Regression Results

Dep. Variable:	y	R-squared:	0.168
Model:	OLS	Adj. R-squared:	0.149
Method:	Least Squares	F-statistic:	9.176
Date:	Thu, 18 Feb 2021	Prob (F-statistic):	1.01e-26
Time:	21:49:17	Log-Likelihood:	-1976.8
No. Observations:	979	AIC:	3998.
Df Residuals:	957	BIC:	4105.
Df Model:	21		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	5.0143	0.653	7.680	0.000	3.733	6.296
Western	-0.0307	0.201	-0.153	0.879	-0.425	0.364
Southern	0.0683	0.208	0.328	0.743	-0.341	0.477
Eastern	-0.2474	0.190	-1.299	0.194	-0.621	0.126
Northern	-0.0666	0.228	-0.292	0.770	-0.514	0.381
Kyiv	0.2681	0.215	1.248	0.212	-0.153	0.690
setl_type	0.2337	0.224	1.043	0.297	-0.206	0.673
setl_size	0.0734	0.070	1.049	0.295	-0.064	0.211
male	0.9447	0.139	6.791	0.000	0.672	1.218
age	0.0969	0.057	1.689	0.091	-0.016	0.209
edu	0.6393	0.089	7.161	0.000	0.464	0.815
emp_1	0.2301	0.469	0.491	0.624	-0.690	1.150
emp_11	-0.3045	0.843	-0.361	0.718	-1.958	1.349
emp_2	0.6183	0.496	1.246	0.213	-0.356	1.592
emp_3	-0.6473	0.585	-1.107	0.268	-1.794	0.500
emp_4	-0.2338	0.602	-0.388	0.698	-1.416	0.948
emp_5	0.0659	0.796	0.083	0.934	-1.497	1.629
emp_6	-0.2029	0.517	-0.392	0.695	-1.218	0.813
emp_7	-0.3186	0.883	-0.361	0.718	-2.051	1.413
emp_8	0.5029	0.505	0.997	0.319	-0.487	1.493
emp_9	1.0670	0.660	1.618	0.106	-0.227	2.361
inc	0.2264	0.062	3.641	0.000	0.104	0.348

Omnibus:	215.254	Durbin-Watson:	1.928
Prob(Omnibus):	0.000	Jarque-Bera (JB):	610.788
Skew:	-1.105	Prob(JB):	2.34e-133
Kurtosis:	6.177	Cond. No.	200.

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Figure A4.5.2 *Participants: summary of demographics model*